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SOLUBILITY DATA SERIES

Volume 54

POLYCYCLIC AROMATIC HYDROCARBONS IN PURE AND BINARY SOLVENTS

SOLUBILITY DATA SERIES

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SOLUBILITY DATA SERIES

Volume 54

POLYCYCLIC AROMATIC HYDROCARBONS IN PURE AND BINARY SOLVENTS

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INTRODUCTION TO THE SOLUBILITY DATA SERIES

SOLUBILITY OF SOLIDS IN LIQUIDS

NATURE OF THE PROJECT

The Solubility Data project (SDP) has as its aim a comprehensive review of published data for solubilities of gases, liquids and solids in liquids or solids. Data of suitable precision are compiled for each publication on data sheets in a uniform format. The data for each system are evaluated and, where data from independent sources agree sufficiently, recommended values are proposed. The evaluation sheets, recommended values, and compiled data sheets are published on consecutive pages.

COMPILATIONS AND EVALUATIONS

The formats for the compilations and critical evaluations have been standardized for all volumes. A description of these formats follows.

Compilations

The format used for the compilations is, for the most part, self-explanatory. Normally, a compilation sheet is divided into boxes, with detailed contents described below.

Components: Each component is listed according to IUPAC name, formula, and Chemical Abstracts (CA) Registry Number. The Chemical Abstracts name is also included if this differs from the IUPAC name, as are trivial names if appropriate. IUPAC and common names are cross-referenced to Chemical Abstracts names in the System Index.

The formula is given either in terms of the IUPAC or Hill (1) system and the choice of formula is governed by what is usual for most current users: i.e., IUPAC for inorganic compounds, and Hill system for organic compounds. Components are ordered on a given compilation sheet according to:

(a) saturating components:

(b) non-saturating components;

(c) solvents.

In each of (a), (b) or (c), the components are arranged in order according to the IUPAC 18column periodic table with two additional rows:

Columns 1 and 2:	H, alkalı elements, ammonium, alkaline earth elements
Columns 3 to 12:	transition elements
Columns 13 to 17:	boron, carbon, nitrogen groups; chalcogenides, halogens
Column 18:	noble gases
Row 1:	Ce to Lu
Row 2:	Th to the end of the known elements, in order of atomic num

Row 2: Th to the end of the known elements, in order of atomic number. The same order is followed in arranging the compilation sheets within a given volume.

Original Measurements: References are abbreviated in the forms given by Chemical Abstracts Service Source Index (CASSI). Names originally in other than Roman alphabets are given as transliterated by Chemical Abstracts. In the case of multiple entrues (for example, translations) an asterisk indicates the publication used for compilation of the data.

Variables: Ranges of temperature, pressure, etc. are indicated here.

Prepared by: The names of all compilers are given here.

Experimental Values: Components are described as (1), (2), etc., as defined in the "Components" box. Data are reported in the units used in the original publication, with the exception that modern names for units and quantities are used; e.g., mass per cent for weight per cent; mol dm³ for molar; etc. Usually, only one type of value (e.g., mass per cent) is found in the original paper, and the compiler has added the other type of value (e.g., mole per cent) from computer calculations based on 1989 atomic weights (2). Temperatures are expressed as $t/^{\circ}C$, $t/^{\circ}F$ or T/K as in the original; if necessary, conversions to T/K are made, sometimes in the compilations and always in the critical evaluation. However, the author's units are expressed according to IUPAC recommendations (3) as far as possible.

Errors in calculations, fitting equations, etc. are noted, and where possible corrected. Material inserted by the compiler is identified by the word "compiler" or by the compiler's name in parentheses or in a footnote. In addition, compiler-calculated values of mole or mass fractions are included if the original data do not use these units. If densities are reported in the original paper, conversions from concentrations to mole fractions are included, but otherwise this is done in the evaluation, with the values and sources of the densities being quoted and referenced.

Details of smoothing equations (with limits) are included if they are present in the original publication and if the temperature or pressure ranges are wide enough to justify this procedure and if the compiler finds that the equations are consistent with the data.

The precision of the original data is preserved when derived quantities are calculated, if necessary by the inclusion of one additional significant figure. In some cases, compilers note that numerical data have been obtained from published graphs using digitizing techniques. In these cases, the precision of the data can be determined by the quality of the original graph and the limitations of the digitizing technique. In some cases graphs have been included, either to illustrate data more clearly, or if this is the only information in the original. Full grids are not usually inserted as it is not intended that users should read data from the graphs.

Method: The apparatus and procedure are mentioned briefly. Abbreviations used in Chemical Abstracts are often used here to save space, reference being made to sources of further detail if these are cited in the original paper.

Source and Purity of Materials: For each component, referred to as (1), (2), etc., the following information (in this order and in abbreviated form) is provided if available in the original paper: source and specified method of preparation; properties; degree of purity.

Estimated Error: If estimated errors were omitted by the original authors, and if relevant information is available, the compilers have attempted to estimate errors (identified by "compiler" or the compiler's name in parentheses or in a footnote) from the internal consistency of data and type of apparatus used. Methods used by the compilers for estimating and reporting errors are based on Ku and Eisenhart (4).

Comments and/or Additional Data: Many compilations include this section which provides short comments relevant to the general nature of the work or additional experimental and thermodynamic data which are judged by the compiler to be of value to the reader.

References: The format for these follows the format for the Original Measurements box, except that final page numbers are omitted. References (usually cited in the original paper) are given where relevant to interpretation of the compiled data, or where cross-reference can be made to other compilations.

Evaluations

The evaluator's task is to assess the reliability and quality of the data, to estimate errors where necessary, and to recommend "best" values. The evaluation takes the form of a summary in which all the data supplied by the compiler have been critically reviewed. There are only three boxes on a typical evaluation sheet, and these are described below.

Components: The format is the same as on the Compilation sheets.

Evaluator: The name and affiliation of the evaluator(s) and date up to which the literature was checked.

Critical Evaluation:

(a) Critical text. The evaluator checks that the compiled data are correct, assesses their reliability and quality, estimates errors where necessary, and recommends numerical values based on all the published data (including theses, patents and reports) for each given system. Thus, the evaluator reviews the merits or shortcomings of the various data. Only published data are considered. Documented rejection of some published data may occur at this stage, and the corresponding compilations may be removed.

The solubility of comparatively few systems is known with sufficient accuracy to enable a set of recommended values to be presented. Although many systems have been studied by at least two workers, the range of temperatures is often sufficiently different to make meaningful comparison impossible.

Occasionally, it is not clear why two groups of workers obtained very different but internally consistent sets of results at the same temperature, although both sets of results were obtained by reliable methods. In such cases, a definitive assessment may not be possible. In some cases, two or more sets of data have been classified as tentative even though the sets are mutually inconsistent.

(b) Fitting equations. If the use of a smoothing equation is justifiable the evaluator may provide an equation representing the solubility as a function of the variables reported on all the compilation sheets, stating the limits within which it should be used.

(c) Graphical summary. In addition to (b) above, graphical summaries are often given.

(d) Recommended values. Data are recommended if the results of at least two independent

groups are available and they are in good agreement, and if the evaluator has no doubt as to the adequacy and reliability of the applied experimental and computational procedures. Data are reported as tentative if only one set of measurements is available, or if the evaluator considers some aspect of the computational or experimental method as mildly undesirable but estimates that it should cause only minor errors. Data are considered as doubtful if the evaluator considers some aspect of the computational or experimental method as undesirable but still considers the data to have some value where the order of magnitude of the solubility is needed. Data determined by an inadequate method or under ill-defined conditions are rejected. However, references to these data are included in the evaluation together with a comment by the evaluator as to the reason for their rejection.

(e) References. All pertinent references are given here, including all those publications appearing in the accompanying compilation sheets and those which, by virtue of their poor precision, have been rejected and not compiled.

(f) Units. While the original data may be reported in the units used by the investigators, the final recommended values are reported in SI units (3) when the data can be accurately converted.

QUANTITIES AND UNITS USED IN COMPILATION AND EVALUATION OF SOLUBILITY DATA

Mixtures, Solutions and Solubilities

A mixture (5) describes a gaseous, liquid or solid phase containing more than one substance, where the substances are all treated in the same way.

A solution (5) describes a liquid or solid phase containing more than one substance, when for convenience one of the substances, which is called the *solvent*, and may itself be a mixture, is treated differently than the other substances, which are called *solutes*. If the sum of the mole fractions of the solutes is small compared to unity, the solution is called a *dilute solution*.

The solubility of a solute 1 (solid, liquid or gas) is the analytical composition of a saturated solution, expressed in terms of the proportion of the designated solute in a designated solvent (6).

"Saturated" implies equilibrium with respect to the processes of dissolution and precipitation; the equilibrium may be stable or metastable. The solubility of a substance in metastable equilibrium is usually greater than that of the same substance in stable equilibrium. (Strictly speaking, it is the activity of the substance in metastable equilibrium that is greater.) Care must be taken to distinguish true metastability from supersaturation, where equilibrium does not exist.

Either point of view, mixture or solution, may be taken in describing solubility. The two points of view find their expression in the reference states used for definition of activities, activity coefficients and osmotic coefficients.

Note that the composition of a saturated mixture (or solution) can be described in terms of any suitable set of thermodynamic components. Thus, the solubility of a salt hydrate in water is usually given as the relative proportions of anhydrous salt in solution, rather then the relative proportions of hydrated salt and water.

Physicochemical Quantities and Units

Solubilities of solids have been the subject of research for a long time, and have been expressed in a great many ways, as described below. In each case, specification of the temperature and either partial or total pressure of the saturating gaseous component is necessary. The nomenclature and units follow, where possible, ref. (3)

A note on nomenclature. The nomenclature of the IUPAC Green Book (3) calls the solute component B and the solvent component A. In compilations and evaluations, the first-named component (component 1) is the solute, and the second (component 2 for a two-component system) is the solvent. The reader should bear these distinctions in nomenclature in mind when comparing equations given here with those in the Green Book.

1. Mole fraction of substance 1, x_1 or x(1):

$$x_1 = n_1 / \sum_{s=1}^{c} n_s$$
 [1]

where n_s is the amount of substance of s, and c is the number of distinct substances present (often

the number of thermodynamic components in the system). Mole per cent of substance 1 is $100 x_1$.

2. Ionic mole fractions of salt i, x_{i+} , x_{i-} : For a mixture of s binary salts i, each of which ionizes completely into v_{i+} cations and v_{i-} anions, with $v_i = v_{i+} + v_i$ and a mixture of p non-electrolytes k, of which some may be considered as solvent components, a generalization of the definition in (7) gives:

$$x_{+i} = \frac{v_{+i}x_{i}}{1 + \sum_{j=1}^{s} (v_{j} - 1)x_{j}}, \quad x_{-i} = \frac{v_{-i}x_{+i}}{v_{+i}} \quad i = 1...s$$
[2]

$$x_{ok} = \frac{x_k}{1 + \sum_{j=1}^{s} (v_j - 1) x_j}, \quad k = (s+1)...c$$
[3]

The sum of these mole fractions is unity, so that, with c = s + p,

$$\sum_{i=1}^{s} (x_{*i} + x_{-i}) + \sum_{i=s+1}^{c} x_{oi} = 1$$
 [4]

General conversions to other units in multicomponent systems are complicated. For a threecomponent system containing non-electrolyte 1, electrolyte 2 and solvent 3,

$$x_{1} = \frac{v_{2}x_{o1}}{v_{2}-(v_{2}-1)x_{2}} \quad x_{2} = \frac{x_{2}}{v_{2}-(v_{2}-1)x_{2}} \quad [5]$$

These relations are used in solubility equations for salts, and for tabulation of salt effects on solubilities of gases.

3. Mass fraction of substance 1, w_1 or w(1):

$$w_1 = g_1 / \sum_{s=1}^{c} g_s$$
 [6]

where g_s is the mass of substance s. Mass per cent of substance 1 is 100 w_1 . The equivalent terms weight fraction, weight per cent and g (1)/100 g solution are no longer used.

4. Solute mole fraction of substance 1, $x_{s,1}$:

$$x_{s,1} = m_1 / \sum_{s=1}^{c'} m_s = x_1 / \sum_{s=1}^{c'} x_s$$
[7]

where c' is the number of solutes in the mixture. These quantities are sometimes called Jänecke mole (mass) fractions (8, 9). Solute mass fraction of substance 1, $w_{s,1}$, is defined analogously.

5. Solvent mole fraction of substance 1, $x_{v,1}$:

$$x_{\nu,1} = x_1 / \sum_{s=1}^{p} x_s$$
 [8]

Here, p is the number of solvent components in the mixture. Solvent mass fraction of substance 1, $w_{v,1}$, is defined analogously.

6. Molality of solute 1 in a solvent 2, m_1 :

$$m_1 = n_1/n_2 M_2$$

roi

SI base units: mol kg⁻¹. Here, M_2 is the molar mass of the solvent.

7. Aquamolality, Solvomolality of substance 1 in a mixed solvent with components 2, 3 (10), $m_1^{(3)}$:

$$m_1^{(3)} = m_1 \overline{M} / M_3 \tag{10}$$

SI base units: mol kg⁻¹. Here, the average molar mass of the solvent is

$$\overline{M} = x_{\nu,2}M_2 + (1 - x_{\nu,2})M_3$$
[11]

and $x_{v,2}$ is the solvent mole fraction of component 2. This term is used most frequently in discussing comparative solubilities in water (component 2) and heavy water (component 3) and in their mixtures.

8. Amount concentration of solute 1 in a solution of volume V, c_1 :

 $c_1 = [\text{formula of solute}] = n_1/V$ [12]

SI base units: mol m⁻³. The symbol c_1 is preferred to [formula of solute], but both are used. The old terms *molarity*, *molar* and *moles per unit volume* are no longer used.

9. Mass concentration of solute 1 in a solution of volume V, ρ_1 :

$$\rho_1 = g_1 / V = c_1 M_1 / V$$
 [13]

SI base units: kg m⁻³.

10. Mole ratio, $r_{n,12}$ (dimensionless):

$$r_{n,12} = n_1 / n_2 \tag{14}$$

Mass ratio, symbol $r_{m,12}$, may be defined analogously.

11. Ionic strength, I_m (molality basis), or I_c (concentration basis):

$$I_m = \frac{1}{2} \sum_i m_i z_i^2, \quad I_c = \frac{1}{2} \sum_i c_i z_i^2$$
 [15]

where z_i is the charge number of ion i. While these quantities are not used generally to express solubilities, they are used to express the compositions of non-saturating components. For a single salt i with ions of charge numbers z_+ , z_- ,

$$I_m = |z_{+}z_{-}|vm_i, \quad I_c = |z_{+}z_{-}|vc_i$$
 [16]

Mole and mass fractions and mole ratios are appropriate to either the mixture or the solution point of view. The other quantities are appropriate to the solution point of view only. Conversions between pairs of these quantities can be carried out using the equations given in Table 1 at the end of this Introduction. Other useful quantities will be defined in the prefaces to individual volumes or on specific data sheets.

Salt hydrates are generally not considered to be saturating components since most solubilities are expressed in terms of the anhydrous salt. The existence of hydrates or solvates is noted carefully the critical evaluation.

Mineralogical names are also quoted, along with their CA Registry Numbers, again usually in in the text, and CA Registry Numbers (where available) are given usually in the critical evaluation.

In addition to the quantities defined above, the following are useful in conversions between concentrations and other quantities.

12. Density, p:

$$\rho = g/V = \sum_{s=1}^{c} \rho_s \qquad [17]$$

SI base units: kg m^{-3} . Here g is the total mass of the system.

13. Relative density, $d = \rho/\rho^0$: the ratio of the density of a mixture at temperature t, pressure p to the density of a reference substance at temperature t', pressure p'. For liquid solutions, the reference substance is often water at 4°C, 1 bar. (In some cases 1 atm is used instead of 1 bar.) The term specific gravity is no longer used.

Thermodynamics of Solubility

Thermodynamic analysis of solubility phenomena provides a rational basis for the construction of functions to represent solubility data, and thus aids in evaluation, and sometimes enables thermodynamic quantities to be extracted. Both these aims are often difficult to achieve because of a lack of experimental or theoretical activity coefficients. Where thermodynamic quantities can be found, they are not evaluated critically, since this task would involve examination of a large body of data that is not directly relevant to solubility. Where possible, procedures for evaluation are based on established thermodynamic methods. Specific procedures used in a particular volume will be described in the Preface to that volume.

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January, 1994

	<i>xi</i>	Wi	m _i	<i>C</i> _i
<i>x</i> _i =	x _i	$\frac{1}{1 + \frac{M_i}{M_c} \left(\frac{1}{w_i} - 1 + \sum_{j \neq i}^{c-1} \left(\frac{M_c}{M_j} - 1\right) \frac{w_j}{w_i}\right)}$	$\frac{1}{1 + \frac{1}{m_i M_c} + \sum_{j \neq i}^{c-1} \frac{m_j}{m_i}}$	$\frac{1}{1 + \frac{1}{M_c} \left(\frac{\rho}{c_i} - M_i\right) + \sum_{j \neq i}^{c-1} \frac{c_j}{c_i} \left(1 - \frac{M_j}{M_c}\right)}$
<i>w_i</i> =	$\frac{1}{1 + \frac{M_c}{M_i} \left(\frac{1}{x_i} - 1 + \sum_{j \neq i}^{c-1} \left(\frac{M_j}{M_c} - 1\right) \frac{x_j}{x_i}\right)}$	Wi	$\frac{1}{1 + \frac{1}{m_i M_i} \left(1 + \sum_{j \neq i}^{c-1} m_j M_j\right)}$	<u><i>c_iM_i</i></u> ρ
<i>m</i> _i =	$\frac{1}{M_c \left(\frac{1}{x_i} - 1 - \sum_{j \neq i}^{c-1} \frac{x_j}{x_i}\right)}$	$\frac{1}{M_i \left(\frac{1}{w_i} - 1 - \sum_{j \neq i}^{c-1} \frac{w_j}{w_i}\right)}$	m _i	$\frac{1}{\frac{1}{c_i} \left(\rho - \sum_{j \neq i}^{c-1} c_j M_j \right) - M_i}$
<i>ci</i> =	$\frac{\rho}{M_i + M_c \left(\frac{1}{x_i} - 1 + \sum_{j \neq i}^{c-1} \left(\frac{M_j}{M_c} - 1\right) \frac{x_j}{x_i}\right)}$	$\frac{\rho w_i}{M_i}$	$\frac{\rho}{\frac{1}{m_i} \left(1 + \sum_{j \neq i}^{c-1} M_j m_j\right) + M_i}$	C _i

Table 1. Interconversions between Quantities Used as Measures of Solubility
c-component Systems Containing c - 1 Solutes i and Single Solvent c

 ρ - density of solution; M_i - molar masses of i. For relations for 2-component systems, set summations to 0.

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PREFACE TO THE VOLUME

The chemical literature contains solubility data for a large number of solutes dissolved in a single solvent. Solubility data for crystalline solutes in binary solvent systems are relatively scarce, and data for ternary (and higher-order) solvent systems are virtually nonexistent as experimental measurements become progressively more difficult, time-consuming and expensive with each additional_solvent component. Despite continued efforts by experimentalists and scientific organizations, both in terms of new experimental measurements and critically evaluated data compilations, there still exist numerous systems for which actual solubility data are not readily available. To address this problem, researchers have to determine precise experimental data in binary solvents, and then use the measured results to check the predictive ability of modern semi-empirical relationships derived from basic thermodynamic principles.

With the aforementioned ideas in mind, we have compiled published solubility data for anthracene, naphthalene, phenanthrene, pyrene, fluorene, fluoranthene, carbazole, thianthrene, and other two- and three-ring polycyclic aromatic heteroatom compounds in binary organic solvent mixtures so that experimental values will be readily available in a single reference source. Experimental data for well over 250 different systems were retrieved from the chemical literature and are compiled in this volume. Each system contains solubility data for the solute dissolved in each pure solvent and in four to ten binary solvent mixtures covering the entire range of mole fraction compositions. Literature sources searched include a complete coverage of *Chemical Abstracts* from 1907 to October 1991; Beilstein, *Handbuch der Organischen Chemie*; and the *International Critical Tables*. Polycyclic aromatic compounds are an important chemical class. They have been used as model compounds in coal liquefication process design calculations, serve as the "parent" compound or base found in a number of drug molecules, and several are common organic pollutants resulting from oil spills.

Compilations of published solubility data for crystalline polycyclic aromatic compounds dissolved in binary organic solvent systems alone, however, do not address entirely the needs of the scientific community. There are a number of systems that one encounters for which actual experimental data may consist solely of solute solubilities in the two pure solvents, and for which additional experimental measurements are not feasible. Solubility determinations are both time-consuming and expensive, and presume that the necessary chemicals and instrumentation have been procured. Research laboratories are not routinely equipped to measure solubility data, and one cannot always wait days for additional supplies to be delivered. In such instances, predictive expressions provide the sole means to generate desired values in timely fashion. Predictive methods facilitate interpolation between measured data points and help to screen data sets for possible outliers (incorrect entries) in need of redetermination.

Recognizing the increasing role that predictive expressions have enjoyed in modern science, we have decided to include in this volume a very brief survey of select

methods currently being used to estimate solute solubilities in mixed solvents. Admittedly, not every predictive expression can be presented. Several hundred pages of text would be required to adequately examine the various quantitative structureactivity relationships (QSARs), semi-empirical, stoichiometric complexation and group contribution models developed during the past fifty years. Discussion in the present volume is limited to basic thermodynamic principles governing the solubility of crystalline nonelectrolyte solutes, and predictive expressions actually used by the editors to screen the compiled solubility data sets for possible outliers. Agreement between theory and experimental solubilities indicates that the measured values are internally consistent. Such comparisons afford a convenient means to critically evaluate single measurement systems, as is the case with the majority of published solubility data for polycyclic aromatic compounds in binary solvent mixtures. Conventional methods of evaluation used in the Solubility Data Series are not applicable since data available from the different laboratories were not measured under the same conditions of temperature and solvent composition. For a more detailed treatment of solubility behavior, readers are referred to monographs by Acree (1), Grant and Higuchi (2), Hildebrand and Scott (3), James (4), Prausnitz et al. (5), and Shinoda (6).

BASIC THERMODYNAMIC PRINCIPLES

Composition of a liquid solution can be expressed in a variety of ways, as (1) the ratio of the amount of one component to the amount of a second component, n_1/n_2 , etc., (2) amount concentration

 $c_i = [i] = n_i/V$ SI base units: mol dm⁻³ [1] (3) mole fraction

 $x_1 = n_1/(n_1 + n_2 + n_3 + \dots + n_3)$

or (4) volume fraction

 $\phi_1 = n_1 V_1 / (n_1 V_1 + n_2 V_2 + n_3 V_3 + \dots)$ [3]

[2]

Strictly speaking, the true volume of a real solution is not equal to the sum of the volumes of the individual components but is the fractional sum of partial molar volumes, which for a ternary solution is $V = x_1V_1 + x_2V_2 + x_3V_3$. For purposes of this monograph, volume fractions are defined in terms of the molar volumes of the pure unmixed components $V_{m,i}$ (molar mass divided by density)

 $\phi_1 = n_1 V_{m,1} / (n_1 V_{m,1} + n_2 V_{m,2} + n_3 V_{m,3} + \cdots)$ [4]

as this quantity serves as an input parameter in expressions for estimating solubilities in mixed solvents since it requires no a priori knowledge concerning volumetric behavior. Solute solubilities can be found in the chemical literature in terms of any of the aforementioned concentration variables, or as molality, m_i , which is the amount of solute \underline{i} divided by the mass of the solvent

 $m_i = n_i/n_s M_s$ SI base unit: mol kg⁻¹ [5] where M_s is the molar mass of the solvent.

Solubility is a strong function of the intermolecular forces between the solute and solvent molecules. The well-known adage similis similibus solvuntur (like is dissolved by like) serves merely as an empirical statement of the fact that, in the absence of specific interactions, the molecular forces between chemically similar species lead to a smaller endothermic enthalpy of solution than those between dissimilar species. Because dissolution must be accompanied by a decrease in the Gibbs energy, a low endothermic enthalpy is preferable to a large one. Factors other than the intermolecular forces between the solute and solvent, however, play an important role in determining the solubility of a crystalline material.

The solubility of a solid substance may be considered to arise from three, and in some cases four, contributions:

- (a) The breaking of solute-solute interactions in the crystalline lattice;
- (b) the breaking of solvent-solvent interactions, often referred to as cavity formation;
- (c) the formation of solute-solvent interactions; and
- (d) the pertubation of solvent-solvent interactions in the immediate vicinity of the solute, as in solvent structuring.

Each of these four contributions may be further divided into specific chemical (complexation) and nonspecific physical (simple dispersion) interactions. To illustrate, consider the solubilities of the two isomers phenanthrene and anthracene. The mole fraction solubility of phenanthrene in benzene at 298 K ($x_1 = 0.2068$) is approximately 25 times greater than that of anthracene ($x_1 = 0.0074$), even though both solutes are chemically similar to each other. The reason for this difference in solubility results from something that is all too often overlooked, that is, the solubility depends not only upon the activity coefficient of the solute (which reflects the intermolecular forces between the solute and solvent and between solute molecules), but also depends upon the chemical potential of the standard state to which the activity coefficient refers and on the chemical potential of the pure solid.

The thermodynamic criterion governing solute solubility (component 1) and solidliquid equilibrium is

 $a_1 = a_1^*$

[6]

[7]

or

 $a_1^* = \gamma_1 x_1 a_1^\circ$

where * is the pure solid, x_1 is the mole fraction solubility of the solute in the solvent, γ_1 is the liquid-phase activity coefficient and a_1° is the standard state activity to which γ_1 refers. Selection of the standard state a_1° is arbitrary, the only thermodynamic requirement being that it must be at the same temperature as the saturated solution. For thermodynamic modeling of nonelectrolyte solutions, it is advantageous to define the standard state activity as the activity of the pure supercooled liquid, $a_1^*(1)$, at the solution's temperature and some specified pressure. Although this is a hypothetical standard state, it is one whose properties can be calculated with reasonable accuracy provided that the solution's temperature is not too far removed from the melting point temperature of the solute, T_{up} .

The standard state activity is computed from the following three-step thermodynamic cycle:

Step I: Solute 1 (solid, T) \longrightarrow Solute 1 (solid, T_{MP}) Step II: Solute 1 (solid, T_{MP}) \longrightarrow Solute 1 (liquid, T_{MP}) Step III: Solute 1 (liquid, T_{MP}) \longrightarrow Solute 1 (liquid, T) with the overall process being

Solute 1 (solid, T) \longrightarrow Solute 1 (supercooled liquid, T) and

 $\Delta G = RT \ln a_1(s) = \Delta G_1 + \Delta G_{11} + \Delta G_{111}$ (8)

Assuming that the difference in heat capacities between the solid and supercooled liquid remains constant over the temperature range from T to $T_{\mu\rho}$, the following expression is obtained

 $\ln a_{1}(s) = \ln (\gamma_{1}x_{1}) = -\Delta H^{fus} (T_{MP} - T)/R T T_{MP} + \Delta C_{p} (T_{MP} - T)/RT - (\Delta C_{p}/R) \ln (T_{MP}/T)$ [9]

for the solubility of a crystalline solute in a liquid solvent. The expression for $a_1(s)$ must include additional term(s) if the solid undergoes a phase transition (7,8).

Equation [9] immediately provides two useful conclusions regarding the solubility of solids in liquids. Although these conclusions rigorously apply to ideal solutions $(\gamma_i = 1)$, they serve as useful guidelines for other solutions that do not deviate excessively from ideal behavior.

- (a) For a given solid-solvent system, the solubility increases with increasing temperature. The rate of increase is approximately proportional to the enthalpy of fusion and, to a first approximation, does not depend upon the melting point temperature.
- (b) For a given solvent and at a fixed temperature, if two solids have a similar entropy of fusion then the solid with the lower melting temperature has the higher solubility. Similarly, if two solids have about the same melting temperature then the one with the lower enthalpy of fusion has the higher solubility.

In the preceeding discussion Raoult's law is used to define the thermodynamic properties of an ideal solution. For very high molecular weight solvent systems, eqn. [9] (with $\gamma_1 = 1$) grossly underestimates solute solubilities. This is not too surprising because the Flory-Huggins model

 $G = RT [x_1 \ln \phi_1 + x_2 \ln \phi_2]$ [

$$\ln a_1 = \ln \phi_1 + \phi_2 (1 - V_{m,1}/V_{m,2})$$

[10] [11]

[12]

provides a more realistic description of solution ideality in polymer solutions. The corresponding expression for solubility is given by

$$\ln \phi_1 + (1 - \phi_1)(1 - V_{m,1}/V_{m,2}) = -\Delta H^{fus} (T_{TP} - T)/RT T_{TP} + \Delta C_P (T_{TP} - T)/RT - (\Delta C_P/R) \ln (T_{TP}/T)$$

Chiou and Manes (9) compared experimental solubilities of 11 crystalline nonpolar polycyclic aromatic compounds and their derivatives in glycerol trioleate ($V_{m,s} = 966$ cm³ mol⁻¹) to predictions based upon eqns. [9] and [12]. The authors' calculations revealed that the observed mole fraction solubilities are considerably higher than the predictions of eqn. [9] (with $\Delta C_p = 0$); the predictions in some instances being low by as much as 100 percent. In comparison, the observed volume fraction solubilities, ϕ_1 , were comparable to or only slightly lower than the predictions of eqn. [12] (again with $\Delta C_p = 0$). The magnitude of the deviations from Raoult's law is well beyond the uncertainty of the observed solubilities. Since the solubility data can be explained by the Flory-Huggins model and since there is no convincing evidence to indicate strong specific solute-solvent interactions, the observed negative deviations from Raoult's law appears to be an artifact of the model caused by large molecular size disparity. The solubility measurements of Chiou and Manes, combined with an earlier study on glycerol trioleate/water partition coefficients (10), suggest that the Flory-Huggins model should be considered in systems having molar volume ratios of 4 or more.

SCATCHARD-HILDEBRAND SOLUBILITY PARAMETER THEORY

Elementary ideas from statistical thermodynamics lead to some general conclusions at the molecular level concerning nonideality of mixtures. Nonelectrolyte mixtures are classified according to their molecular properties by considering the kind of internal forces acting between like and unlike molecules. Such a division of intermolecular forces leads to classification of mixtures into simple and complex liquids. The interactions in simple liquids result exclusively from dispersion forces, or nonspecific interactions as they are often called. On the other hand, in complex liquids the molecules have a permanent nonuniform distribution of charge (polar liquids) so that they interact through electrostatic forces in addition to dispersion forces. The electrostatic interactions (primarily dipole-dipole interactions) lead to some degree of specific interactions resulting in a specific geometric orientation of one molecule with respect to an adjacent molecule. For this reason this interaction is sometimes called the orientation effect. If these interactions are strong enough, stable dimers or larger complexes may be formed and the liquid is said to be associated. The boundary between weakly polar liquids and associated liquids is nebulous, and there have been numerous disagreements in the published literature regarding the separation of specific and nonspecific interactions.

The Scatchard-Hildebrand solubility parameter model (6,11) provides reasonable estimates of solute solubility in systems containing only nonspecific interactions

RT ln $(a_1(s)/x_1) = V_{m,1} (1 - \phi_1)^2 (\delta_1 - \delta_{solvent})^2$ [13] where $\delta_{solvent}$ and δ_1 refer to the solubility parameters of the solvent and supercooled liquid solute, respectively, $V_{m,1}$ is the molar volume of the supercooled liquid solute, x_1 is the saturation mole fraction solubility, and ϕ_1 is the solute's volume fraction solubility calculated using the ideal molar volume approximation (eqn. [4]). For solvent components, the liquid molar volumes and solubility parameters are often tabulated in the literature (for example, see both Hoy (12) and Barton (11)), and when not available, they can be calculated directly from density and vapor pressure measurements on the pure liquid. Molar volumes of supercooled liquid solutes, $V_{m,1}$, on the other hand, are estimated either by group contribution methods or by the experimentally determined apparent partial molar volumes in the solvent of interest. Solubility parameters of the supercooled liquid can be obtained indirectly from solubility measurements or can be estimated by group contribution methods. Tables I and II compare the predictions of eqn. [13] to experimental solubilities of naphthalene and biphenyl in a wide range of organic solvents. Properties used in the computations include the activities of the supercooled liquid solutes, a(s,biphenyl) = 0.384 and a(s,naphthalene) = 0.312, the molar volumes, $V_{m,biphenyl} =$ 149.4 cm³ mol⁻¹ and $V_{m,naphthalene} = 123.0$ cm³ mol⁻¹, and best estimates for the solubility parameters, $\delta_{biphenyl} = 20.05 \ J^{1/2} \ cm^{-3/2}$ and $\delta_{naphthalene} = 19.84 \ J^{1/2} \ cm^{-3/2}$. Inspection of Tables I and II reveals that the predicted values are, for the most part, within 10 % of the experimental solubilities.

The solubility parameter approach is extended to binary solvent mixtures by defining $\delta_{\rm solvent}$

 $\delta_{\text{solvent}} = (\phi_2 \ \delta_2 + \phi_3 \ \delta_3)/(\phi_2 + \phi_3) = \phi_2^{(s)} \ \delta_2 + \phi_3^{(s)} \ \delta_3 \qquad [14]$ as a volume fraction average of the solubility parameters of the two pure solvents, δ_2 and δ_3 . The superscript (s) indicates that the solvent composition is calculated as if the solute were not present.

The popularity of the solubility parameter approach arises because it relates the solubility of a solute in a given solvent, either pure or mixed, to the bulk properties of the pure components. Whereas this particular application of the solubility parameter theory has certain practical advantages in that it requires only a minimal number of experimental observations, a more flexible expression for binary solvent systems can be derived by replacing the individual δ_i values with the measured solubilities in the pure solvents and the measured thermodynamic excess properties of the solvent mixture.

To incorporate direct experimental observations into the basic solubility parameter model, first substitute eqn. [14] into eqn. [13]

 $(1 - \phi_1)^{-2} RT \ln (a_1(s)/x_1) = V_{m,1} (\phi_2^{(s)} \delta_2 + \phi_3^{(s)} \delta_3 - \delta_1)^2$ [15] and multiply out the squared term

$$(1 - \phi_1)^{-2} RT \ln (a_1(B)/x_1) = V_{m,1} [\phi_2^{(S)} (\delta_2 - \delta_1)^2 + \phi_3^{(S)} (\delta_3 - \delta_1)^2 - \phi_2^{(S)} \phi_3^{(S)} (\delta_2 - \delta_3)^2]$$
[16]

Inspection of eqn. [16] reveals that, for model systems obeying this expression, the saturation solubility of the solute in a pure solvent (components 2 and 3) is described by

 $(G_1^E)_i^{\infty} = (1 - \phi_1)^{-2} RT \ln (a_1(s)/x_1) = V_{m,1} (\delta_i - \delta_1)^2$ i = 2,3 [17] The small subscripts i = 2 and i = 3 are used to distinguish the properties of the solute in a pure solvent from those in the binary solvent system. Similarly, the excess Gibbs energy of the binary solvent mixture can be expressed

 $G_{23}^{E} = (x_2^{(s)} V_{m,2} + x_3^{(s)} V_{m,3}) \phi_2^{(s)} \phi_3^{(s)} (\delta_2 - \delta_3)^2$ [18] in terms of solubility parameters.

Combining eqns. [16]-[18] one finds that the solubility of a solute in binary solvent mixtures containing only nonspecific interactions is

$$RT \ln (a_1(s)/x_1) = (1 - \phi_1)^2 [\phi_2^{(s)} (G_1^E)_2^{\circ} + \phi_3^{(s)} (G_1^E)_3^{\circ} - V_{m,1} (x_2^{(s)} V_{m,2} + x_3^{(s)} V_{m,3})^{-1} G_{23}^{E}]$$
[19]

a volume fraction average of the solute's properties in the two pure solvents, $(G_1^E)_2^{\circ}$ and $(G_1^E)_3^{\circ}$, and a contribution due to the non-mixing of the solvent pair by the

Solvent	δ ₂ ª	V _{m,2} ª	$x_1(exp)^b$	x ₁ (calc)
Dichloromethane	20.21	64.50	0.330	0.311
Chlorobenzene	19.78	102.26	0.311	0.312
Benzene	18.74	89.41	0.292	0.305
Trichloromethane	18.74	80.64	0.339	0.305
Methylbenzene	18.27	106.84	0.292	0.295
Ethylbenzene	18.08	123.08	0.289	0.289
Tetrachloromethane	17.49	97.08	0.255	0.275
Cyclohexane	16.75	108.76	0.147	0.242
Methylcyclohexane	15.95	128.32	0.147	0.189
n-Octane	15.42	163.48	0.142	0.146
n-Heptane	15.34	147.48	0.130	0.144
n-Hexane	14.87	131.51	0.122	0.119
Carbon disulfide	20.29	60.62	0.283	0.311

TABLE I. Comparison Between Experimental and Predicted Naphthalene Solubilities

^a $\delta_2/(10^3 \text{ g/kg}^{1/2} \text{ m}^{-1/2} \text{ s}^{-1}); V_{m,2}/(\text{cm}^3 \text{ mol}^{-1}).$ ^b Experimental solubilites were determined by Chang (54).

TABLE II. Comparison Between Experimental and Predicted Biphenyl Solubilities

Solvent	δ2 ^a	V _{m,2} ª	x ₁ (exp) ^b	x ₁ (calc)
ichloromethane	20.21	64.50	0.412	0.384
hlorobenzene	19.78	102.26	0.397	0.384
enzene	18.74	89.41	0.381	0.374
richloromethane	18.74	80.64	0.422	0.375
ethylbenzene	18.27	106.84	0.377	0.362
thylbenzene	18.08	123.08	0.363	0.353
etrachloromethane	17.49	97.08	0.342	0.340
yclohexane	16.75	108.76	0.190	0.295
ethylcyclohexane	15.95	128.32	0.183	0.215
-Octane	15.42	163.48	0.147	0.147
-Heptane	15.34	147.48	0.138	0.145
-Hexane	14.87	131.51	0.124	0.112
arbon disulfide	20.29	60.62	0.369	0.384

 $\frac{1}{a} \frac{\delta_2}{(10^3 \text{ g/kg}^{1/2} \text{ m}^{-1/2} \text{ s}^{-1})}; V_{m,2}/(\text{cm}^3 \text{ mol}^{-1}).$ b Experimental solubilities were determined by Chang (54).

presence of the solute. Enhancement of the non-mixing term by a large solute molecule can lead to predictions of maximum $(G_{23}^{E} > 0)$ or minimum $(G_{23}^{E} < 0)$ mole fraction solubilities. The predictions of eqn. [19] will be compared later (in Table III) to experimental solubilities of naphthalene, 1,4-dibromobenzene, iodine, stannic iodide, 1,2-diphenyl-ethanedione, 1,4-benzoquinone, anthracene, biphenyl, pyrene and thianthrene in simple binary solvent mixtures.

Thus far, attention has focussed primarily on the predictive aspects of the solubility parameter approach. It should be noted that the basic solution model can also serve as the point of departure for the mathematical representation of solubility data. The extended Hildebrand solubility equation

$$-\log x_{1} = -\log a_{1}(s) + (V_{m,1} \phi_{solvent}^{2}/2.303 \text{ RT}) [\delta_{solvent}^{2} + \delta_{1}^{2} - 2\Sigma A_{1} \delta_{solvent}^{1}]$$
[20]

derived by Martin and co-workers (13-15) reproduces very accurately the solubility behavior of many crystalline nonelectrolytes in very nonideal binary solvent mixtures. Numerical values of the various A_i -coefficients are computed from the solubility data using a least squares analysis. Mathematical representations, such as eqn. [20], do enable the calculation of interpolated solubilities between two measured values and facilitate computerized storage and retrieval of experimental data. Ochsner *et al.* (16) discussed the mathematical representation of solubility data using expressions based upon mixture response-surface methods, and Acree *et al.* (17,18) suggested representations based upon the Nearly Ideal Binary Solvent (NIBS) and Modified Wilson models. Readers are encouraged to read these articles for several interesting ideas and comparisons.

THE NEARLY IDEAL BINARY SOLVENT (NIBS) MODEL

The NIBS approach was developed by Bertrand and co-workers (19-24) for describing the thermodynamic properties of a solute in binary solvent systems, and has been successful in predicting enthalpies of solution and solubilities in mixed solvents in which only nonspecific interactions are importance. The basic principles of this method as they pertain to the chemical potential of a solute will be reviewed to identify the assumptions made in the derivation of the final predictive expressions.

In the NIBS approach, expressions for the partial molar excess properties of the solute near infinite dilution were developed for a model ternary system obeying a general mixing equation

$$Z^{E} = (n_{1} \Gamma_{1} + n_{2} \Gamma_{2} + n_{3} \Gamma_{3})^{-1} [n_{1} \Gamma_{1} n_{2} \Gamma_{2} A_{12} + n_{1} \Gamma_{1} n_{3} \Gamma_{3} A_{13} + n_{2} \Gamma_{2} n_{3} \Gamma_{3} A_{23}]$$

$$(21)$$

in which Z represents any extensive thermodynamic property, Γ_i is the weighting factor for component <u>i</u>, and A_{ij} is a binary interaction parameter that is independent of composition. Through differentiation of Eqn. [21] the corresponding partial molar excess properties of the solute can be expressed in terms of a weighted mole fraction average of the infinite dilution properties in the two pure solvents, $(Z_1^E)_2^{\circ}$ and $(Z_1^E)_3^{\circ}$, and a contribution resulting from the unmixing of the binary solvent pair $(Z_1^E)^{\circ} = f_2^{(s)} (Z_1^E)_2^{\circ} + f_3^{(s)} (Z_1^E)_3^{\circ} - \Gamma_1 (x_2^{(s)} \Gamma_2 + x_3^{(s)} \Gamma_3)^{-1} Z_{23}^E$ [22] where $f_2^{(s)} = 1 - f_3^{(s)} = n_2 \Gamma_2 / (n_2 \Gamma_2 + n_3 \Gamma_3)$ and $x_2^{(s)} = 1 - x_3^{(s)} = n_2 / (n_2 + n_3)$.

In eqn. [22] and subsequent expressions, the superscript (∞) indicates an extrapolated value for the infinite dilution solution ($f_1 = 0$). Most of the specific elements of the model eqn. [21] were removed; only the weighting factors remain. If reasonable estimates for the weighting factors can be developed, then the thermodynamic excess properties of the solute in binary solvent systems can be predicted and compared to measured experimental data.

Weighting factors represent a measure of the skew of the binary thermodynamic excess property from mole fraction symmetry, and can be evaluated only in a relative sense, as the ratio of two weighting factors (Γ_i/Γ_j) . Several methods (19-21) have been proposed previously for the evaluation of these weighting factors from the thermodynamic properties of binary mixtures. Many of these methods are not applicable in the case of solute solubility, as only a single data point is associated with each solute-solvent pair. To circumvent this problem, several simple approximations can be made: (a) approximating the weighting factors for each component by its molar volume; (b) equating the weighting factors of all components; or (c) approximating the weighting factors for each component by the surface area of the molecule.

Thermodynamic excess properties are relatively simple for directly observed excess properties such as volume and enthalpy. But in the case of Gibbs energy, thermodynamic excess properties are complicated by the fact that the total free energy of mixing is experimentally determined. The excess value must be calculated as the difference between the observed value and the value of an ideal mixture

 $G = RT \Sigma n_i \ln x_i + G^E$ [23] For mixtures containing molecules with considerable differences in molar volumes, general mixing equations possessing the form of eqn. [21] more accurately describe differences between the total free energy of mixing and that predicted via the Flory-Huggins model

 $G^{mix} = RT \Sigma n_i \ln \phi_i + G^{FH}$ [24] For a binary mixture, the difference between the excess Gibbs energy and the Flory-

Huggins excess Gibbs energy is

 $G_{23}^{FH} = G_{23}^{E} + RT [ln (x_2 V_{m,2} + x_3 V_{m,3}) - x_2 ln V_{m,2} - x_3 ln V_{m,3}]$ [25]

The mathematical treatment of these general mixing equations leads to two general expressions for estimating excess chemical potential of a solute at low mole fractions in a binary solvent:

 $G_{1}^{E} = (1 - f_{1})^{2} [f_{2}^{(s)} (G_{1}^{E})_{2}^{\circ} + f_{3}^{(s)} (G_{1}^{E})_{3}^{\circ} - \Gamma_{1} (x_{2}^{(s)} \Gamma_{2} + x_{3}^{(s)} \Gamma_{3})^{-1} G_{23}^{E}] [26]$ and $G_{1}^{FH} = (1 - f_{1})^{2} [f_{2}^{(s)} (G_{1}^{FH})_{2}^{\circ} + f_{3}^{(s)} (G_{1}^{FH})_{3}^{\circ} - \Gamma_{1} (x_{2}^{(s)} \Gamma_{2} + x_{3}^{(s)} \Gamma_{3})^{-1} G_{23}^{FH}]$

The term G_1^{FH} represents an excess molar Gibbs energy of the solute relative to an ideal mixing equation based upon volume fractions rather than mole fractions.

Through basic thermodynamic relationships the excess chemical potential of the solute in binary solvent mixtures can be related to the solubility

 $G_1^E = RT \ln (a_1(s)/x_1)$ [28]

 $G_1^{\text{FH}} = RT \{ \ln (a_1(s)/\phi_1) - [1 - (V_{m,1}/V_{\text{solvent}})] \}$ [29] in which $V_{m,1}$ is the molar volume of the solute in the liquid state at the desired temperature, and $a_1(s)$ is the activity of the solute referred to the hypothetical supercooled liquid below the normal melting point temperature.

Based upon different weighting factor approximations and definitions of mixture ideality, Acree and Bertrand (22-24) derived the following three NIBS expressions

$$RT \ln (a_1(s)/x_1) = (1 - x_1)^2 [x_2^{(s)} (G_1^E)_2^{\circ} + x_3^{(s)} (G_1^E)_3^{\circ} - G_{23}^E]$$
 [XX]

$$RT \ln (a_1(s)/x_1) = (1 - \phi_1)^2 [\phi_2^{(s)} (G_1^E)_2^{\infty} + \phi_3^{(s)} (G_1^E)_3^{\infty} - V_{m,1} (x_2^{(s)} V_{m,2} + x_3^{(s)} V_{m,3})^{-1} G_{23}^E]$$
 [XV]

and

RT { ln
$$(a_1(B)/\phi_1) - (1 - \phi_1)[1 - V_{m,1}/(x_2^{(s)} V_{m,2} + x_3^{(s)} V_{m,3})]$$
 =
 $(1 - \phi_1)^2 [\phi_2^{(s)} (G_1^{FH})_2^{\circ} + \phi_3^{(s)} (G_1^{FH})_3^{\circ} - V_{m,1} (x_2^{(s)} V_{m,2} + x_3^{(s)} V_{m,3})^{-1} G_{23}^{FH}]$
[VV

for predicting solubilities in binary solvents. Readers should note that the NIBS equations are named using alphabetical letters rather than numbers to permit easy identification. The first letter in the NIBS equation name indicates whether mole fractions (X) or volume fractions (V) appear inside the logarithm term, while the second letter denotes the weighting factor approximation employed, i.e., V is used if $\Gamma_i = V_{m,i}$ and X is used for $\Gamma_i = \Gamma_j$, etc. Two additional predictive expressions involving molecular surface areas, eqns. [XA] and [VA], will be presented shortly.

As was shown in the preceeding section, eqn. [XV] can be derived from the Scatchard-Hildebrand solubility parameter theory by eliminating the three δ s with the experimental solubilities in the pure solvents and the themrodynamic excess properties of the binary solvent. The NIBS treatment is more general, however, and does not place any restrictions on the numerical values that the binary interaction parameters can assume.

To illustrate the predictive application of eqn. [XX], assume that one wished to estimate the solubility of naphthalene in binary tetrachloromethane (2) + n-hexane (3) mixtures, at $x_2^{(s)} = 0.5971$ and 298.15 K, from measured solubilities in the pure solvents, $(x_1)_2 = 0.2591$ and $(x_1)_3 = 0.1168$. Begin by calculating $(G_1^{E})_2^{\circ}$ and $(G_1^{E})_3^{\circ}$ using $a_1(s) = 0.312$

 $(G_1^E)_2^{\circ} = (8.314)(298.15) (1 - 0.2951)^{-2} \ln (0.312/0.2591) = 838.93 \text{ J mol}^{-1}$

 $(G_1^E)_3^{\circ} = (8.314)(298.15) (1 - 0.1168)^{-2} \ln (0.312/0.1168) = 3122.17 \text{ J mol}^{-1}$

These values are then combined with the experimental excess Gibbs energy of the binary solvent, $G_{23}^{E} = 141.8 \text{ J mol}^{-1}$, to yield

$(8.314)(298.15) \ln (0.312/x_1) = (1 - x_1)^2 [(0.5971)(838.93) + (0.4029)(3122.17) - 141.8]$

The above expression can be solved reiteratively. Letting $(1 - x_1)^2 = 1$, generate a first approximation of $x_1 = 0.1625$, which is then used to calculate $(1 - x_1)^2$ for a second approximation. Convergence to a constant value of x_1 generally takes three or four iterations, depending upon the saturation solubility.

The predictive abilities of eqns. [XX], [XV] and [VV] are summarized in Table III for 128 systems for which solubility data and thermodynamic mixing data of the binary solvents were available at or near the same temperature. In a few instances, the Scatchard-Hildebrand solubility parameter model was used to estimate the G_{23}^{E} values required as part of the NIBS input parameters. The actual experimental solubilities of the various polycyclic aromatic compounds are tabulated in data compilation portion of this volume, which immediately follows the survey of predictive methods. Each system contains solubility data for four to ten binary solvent compositions, in addition to the measured solubilities in both pure solvents. With the exception of anthracene and pyrene solubilities in benzene + n-heptane, multiple entries for a given solute-binary solvent system indicate that more than one data set was retrieved from the chemical literature. Molar volumes and molecular surface areas used in these computations are listed in Table IV.

For the most part, eqns. [XV] and [VV] provide reasonable estimates (\pm 5 %) for the experimental solubilities; the exceptions being the anthracene and pyrene solubilities in solvent mixtures containing either benzene, methylbenzene or 1,4dimethylbenzene. (These systems will be discussed in more detail later.) No attempt has been made to critically evaluate the published solubility data as only one set of measurements could be found for each system. An assessment of each data set's reliability can be gained by comparing the experimental solubilities against the various predicted values. Very close agreement between observed and predicted values suggests that each data set is internally consistent, which is further supported by the fact that plots of log x_1 versus $x_2^{(5)}$ appear as smooth curves with no noticeable outliers.

The success of eqns. [XV] and [VV] become more remarkable if one realizes that 1,2-diphenylethanedione and 1,4-benzoquinone dissolved in binary alkane + tetrachloromethane solvent mixtures cover up to a 14-fold and 6-fold range in mole fraction solubilities, respectively, despite which the observed values differ only slightly from predicted values based upon eqns. [XV] and [VV]. Stoichiometric complexation models that attribute all solubility enhancement to the formation of molecular solute-solvent complexes require at least 2 (and sometimes 3) equilibrium constants to describe these latter two sets of systems. Significant solubility enhancement can result in systems containing only nonspecific interactions. One should not naively expect that differences in nonspecific interactions, shown to be present in mixtures of two noncomplexing solvent components, to suddenly vanish whenever one of the inert solvents is replaced by a complexing solvent.

The superiority of expressions based upon molar volumes suggests that the relative sizes of the molecules are an important consideration. The use of surface areas as weighting factors may be revealing because surface area represents a different measure of molecular size. Introduction of molecular surface areas (A_i) into the basic NIBS model leads to the development of two more predictive expressions (25)

 $RT \ln (a_1(B)/x_1) = (1 - \Theta_1)^2 [\Theta_2^{(s)} (G_1^E)_2^{\bullet} + \Theta_3^{(s)} (G_1^E)_3^{\bullet} - A_1 (x_2^{(s)} A_2 + x_3^{(s)} A_3)^{-1} G_{23}^E]$ [XA]

TABLE III. Comparison Between Experimental Solubilities and Predicted Values Based Upon the NIBS Equations for Nonelectrolyte Solutes Dissolved in Binary Solvent Mixtures

	RMS Deviations	d. Values	
Binary Solvent System	[XX]	[XV]	[77]
Solute = Naphthalene			
Benzene + cyclohexane	- 1.4	+ 1.2	- 1.1
Benzene + tetrachloromethane	+ 1.5	+ 1.7	+ 1.9
Benzene + n-hexane	+ 2.3	1.4	1.4
Cyclohexane + n-hexadecane	- 4.0	+ 2.9	+ 1.4
n-Hexane + n-hexadecane	- 6.8	+ 1.8	+ 0.8
Tetrachloromethane + cyclohexane	0.3	- 0.5	- 0.6
Tetrachloromethane + n-hexadecane	+ 8.0	+ 4.5	+ 2.4
Benzene + n-hexadecane	+ 9.2	+ 2.4	+ 0.7
Tetrachloromethane + n-hexane	+ 3.2	1.3	0.5
Cyclohexane + n-hexane	0.8	0.6	0.6
Benzene + methylbenzene	+ 0.5	0.5	+ 0.6
Tetrachloromethane + methylbenzene	- 1.5	- 1.5	- 1.5
Cyclohexane + methylbenzene	- 1.8	- 0.9	- 0.8
Ethylbenzene + tetrachloromethane	0.5	0.7	0.6
Ethylbenzene + cyclohexane	- 0.7	0.3	0.3
olute = 1,4-Dibromobenzene			
Tetrachloromethane + n-hexadecane	+ 5.4	+ 1.8	- 0.8
n-Hexane + n-hexadecane	- 8.5	+ 1.6	0.6
Tetrachloromethane + cyclohexane	- 0.6	- 1.5	- 1.5
olute = Stannic Iodide			
Benzene + cyclohexane	2.2	2.8	3.1
Cyclohexane + tetrachloromethane	- 0.8	- 1.3	- 1.2
olute = Iodine			
Cyclohexane + n-hexane	+ 1.7	- 1.5	- 2.5
Cyclohexane + n-hexane	1.2	- 2.0	- 3.0
Cyclohexane + n-hexane	+ 1.6	- 1.9	- 2.0
Tetrachloromethane + n-hexane	+ 5.0	- 1.3	- 2.0
Tetrachloromethane + n-hexane	+ 5.8	- 0.8	- 1.3
Cyclohexane + n-heptane	+ 2.1	- 0.5	- 0.8
n-Heptane + n-hexadecane	~ 8.2	2.4	- 1.0
2,2,4-Trimethylpentane + hexadecane	~ 8.1	+ 1.8	- 0.9
Cyclohexane + tetrachloromethane	+ 0.9	- 0.7	- 0.7
Cyclohexane + OMCTS	+ 5.3	+ 4.2	- 3.0
Tetrachloromethane + OMCTS	+ 8.6	+ 5.3	- 4.5
n-Heptane + tetrachloromethane	+ 5.4	- 0.6	- 1.3
olute = 1,2-Diphenylethanedione			
n-Hexane + cyclohexane	- 0.4	- 1.3	- 1.2
n-Hexane + tetrachloromethane	+13.0	- 3.4	- 3.1
n-Heptane + tetrachloromethane	+17.2	- 3.1	- 2.5
n-Hexane + n-heptane	- 0.6	0.3	0.3
Cyclohexane + tetrachloromethane	+ 1.5	- 2.2	- 2.4
Benzene + methylbenzene	0.2	- 0.3	- 0.3
2,2,4-Trimethylpentane + cyclohexane	+ 2.4	- 1.8	- 1.2
Cyclohexane + cyclooctane	- 2.2	0.3	0.4
n-Octane + tetrachloromethane	+25.9	- 1.8	0.9
Cyclohexane + n-octane	+ 1.8	0.6	0.3
Cyclohexane + n-heptane	+ 2.0	0.5	+ 0.7
2,2,4-Trimethylpentane + tetrachloromethane	+25.7	- 4.2	- 3.4

TABLE III. (Continued)			:
Solute = 1,4-Benzoquinone n-Octane + tetrachloromethane	+15.7	- 3.1	- 4.2
	+12.4	- 3.8	- 4.4
n-Heptane + tetrachloromethane	- 1.4	+ 1.3	0.2
n-Heptane + n-dodecane	- 1.4	0.6	- 1.1
Cyclohexane + 2,2,4-trimethylpentane	- 0.5	0.8	- 1.1
Cyclohexane + cyclooctane	- 0.5 + 0.4	- 0.5	- 0.8
Cyclohexane + n-heptane	+ 0.4	- 0.5	- 0.8
Solute = Anthracene	1.0	0.6	0.6
Cyclohexane + n~heptane	- 1.4	0.9	0.9
Cyclohexane + cyclooctane		+ 0.6	+ 0.7
Cyclohexane + n~octane	- 1.3 + 1.9	- 1.2	- 1.0
Cyclohexane + 2,2,4-trimethylpentane	- 1.2	- 1.2	- 1.1
Cyclohexane + n~hexane		- 1.2	- 1.1
Benzene + n-heptane	+10.6		- 3.8
Benzene + n-heptane	+ 7.9	- 4.6	- 3.8
Benzene + cyclohexane	- 6.9	- 7.7 - 6.8	
Benzene + cyclohexane	- 6.2		- 6.6
Benzene + tetrachloromethane	- 3.1	- 2.1	- 2.0
Benzene + n-hexane	+ 2.7	- 6.0	- 5.4
Benzene + cyclooctane	1.8	- 8.3	- 7.7
Benzene + 2,2,4-trimethylpentane	+10.5	-11.6	-10.7
Benzene + n-octane	+12.7	2.2	1.4
Benzene + methylcyclohexane	+ 2.7	- 4.7	- 4.2
Methylbenzene + n-hexane	- 1.1	- 5.7	- 5.6
Methylbenzene + cyclohexane	-12.7	-13.6	-13.4
Methylbenzene + n-heptane	+ 4.6	- 4.3	- 4.0
Methylbenzene + methylcyclohexane	- 7.4	-10.9	-10.7
Methylbenzene + n-octane	+ 8.0	- 3.6	- 3.3
Methylbenzene + 2,2,4-trimethylpentane	+14.6	1.7	1.6
Methylbenzene + cyclooctane	- 2.5	- 5.8	- 5.6
1,4-Dimethylbenzene + n-hexane	- 7.9	- 8.2	- 8.2
1,4-Dimethylbenzene + cyclohexane	-12.7	- 5.3	- 5.3
1,4-Dimethylbenzene + methylcyclohexane	-10.0	- 9.9	- 9.9
1,4-Dimethylbenzene + n-octane	+ 2.0	- 5.9	- 5.9
1,4-Dimethylbenzene + n-heptane	+ 0.7	- 4.0	- 3.9
1,4-Dimethylbenzene + 2,2,4-trimethylpentane	+10.6	0.6	0.6
Tetrachloromethane + n-hexane	+ 7.0	0.9	1.2
Tetrachloromethane + cyclohexane	0.2	- 1.5	- 1.4
Tetrachloromethane + n-heptane	+10.5	+ 2.4	+ 2.8
Tetrachloromethane + methylcyclohexane	+ 4.3	- 1.1	0.9
Tetrachloromethane + n-octane	+11.2	+ 2.3	+ 2.9
Tetrachloromethane + 2,2,4-trimethylpentane	+12.4	- 2.2	- 1.8
1,1-Oxybisbutane + n-hexane	- 5.9	0.3	0.3
1,1-Oxybisbutane + n-heptane	- 4.3	- 1.8	- 1.8
1,1-Oxybisbutane + cyclohexane	- 9.4	- 1.3	- 1.0
1,1-Oxybisbutane + methylcyclohexane	- 6.9	- 2.1	- 2.1
1,1-Oxybisbutane + n-octane	- 2.6	- 2.1	- 2.1
1,1-Oxybisbutane + 2,2,4-trimethylpentane	- 2.6	- 2.5	- 2.5
1,1-Oxybisbutane + cyclooctane	- 6.9	- 4.6	- 4.6
Solute = Biphenyl			-
Cyclohexane + n-hexane	+ 1.5	+ 0.5	+ 0.5
Cyclohexane + n-octane	+ 2.7	0.6	0.6
Tetrachloromethane + n-hexane	+ 2.8	0.7	0.7
Tetrachloromethane + n-heptane	+ 4.8	0.6	+ 0.6

TABLE III. (Continued)			
Cyclohexane + tetrachloromethane	0.7	+ 0.7	+ 0.7
Cyclohexane + n-heptane	+ 2.2	0.4	0.6
Solute = Pyrene			
Cyclohexane + n-hexane	- 2.9	- 2.5	- 2.4
Cyclohexane + n-heptane	- 2.3	- 1.4	- 1.0
Cyclohexane + n-octane	- 3.8	- 1.2	0.7
Cyclohexane + 2,2,4-trimethylpentane	+ 2.0	- 1.6	- 1.1
Cyclohexane + cyclooctane	- 4.3	- 1.1	- 0.9
Benzene + n-hexane	1.1	- 8.0	- 7.5
Benzene + cyclohexane	-10.0	- 9.2	- 9.1
Benzene + n-heptane	+ 5.9	- 5.6	- 4.5
Benzene + n-heptane	+ 3.6	- 9.3	- 8.4
Benzene + n-octane	+ 5.7	- 9.7	- 8.6
Benzene + cyclooctane	- 7.2	-12.0	-11.3
Benzene + 2,2,4-trimethylpentane	+10.3	-13.4	-12.2
Methylcyclohexane + 1,1-oxybisbutane	- 8.7	- 3.5	- 3.4
n-Octane + 1,1-oxybisbutane	0.8	0.8	0.8
n-Heptane + 1,1-oxybisbutane	- 6.6	- 3.5	- 3.5
Cyclohexane + 1,1-oxybisbutane	-13.4	- 3.0	- 2.5
t-Butylcyclohexane + 1,1-oxybisbutane	- 7.3	- 7.6	- 7.6
2,2,4-Trimethylpentane + 1,1-oxybisbutane	- 2.7	- 2.0	- 2.0
n-Hexane + 1,1-oxybisbutane	-10.3	- 3.0	- 2.9
olute = Thianthrene			
Cyclohexane + n-hexane	0.3	- 1.6	- 1.3
Cyclohexane + methylcyclohexane	0.4	0.5	0.7
Cyclohexane + n-heptane	0.6	- 2.8	- 2.5
Cyclohexane + n-octane	+ 2.2	- 0.9	- 0.6
Cyclohexane + cyclooctane	- 4.9	- 1.5	- 1.3
Cyclohexane + 2,2,4-trimethylpentane	+ 4.0	- 2.5	- 2.1
olute = Carbazole			
Cyclohexane + n-hexane	0.5	- 0.7	- 0.7
- Cyclohexane + n-heptane	0.5	0.5	0.4
- Cyclohexane + n-octane	- 0.8	0.6	0.8
Cyclohexane + methylcyclohexane	0.2	0.2	0.3
Cyclohexane + 2,2,4-trimethylpentane	+ 1.6	- 1.4	- 1.2
Cyclohexane + cyclooctane	- 2.7	0.5	0.5

* % RMS Deviations = 100 { $\Sigma [\ln x_1(calc)/x_1(exp)]^2/N$ }^{1/2}; the algebraic sign indicates that all deviations were of the same sign.

^b Experimental solubilities and literature references for the binary solvent properties are given elsewhere (1,20,22,23,41-53).

^c OMCTS is used as the abbreviation of octamethylcyclotetrasiloxane.

Component (i)	$V_{m,i}/(cm^3 mol^{-1})$	$A_i/(Å^2 mol^{-1})$	$\delta_i / (J^{1/2} \text{ cm}^{-3/2})^a$
Solvents		<u>,</u> _, <u>, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,</u>	
n-Hexane	131.51	142.1	14.87
n-Heptane	147.48	160.3	15.34
n-Octane	163.46	178.4	15.42
Cyclohexane	108.76	120.8	16.75
Methylcyclohexane	128.32	137.7	16.02
2,2,4-Trimethylpentane	106.09	163.1	14.03
Cyclooctane	134.88	148.8	17.41
Benzene	89.41	109.5	18.74
Methylbenzene	106.84	126.5	18.27
1,4-Dimethylbenzene	123.93	150.3	18.06
1,1-Oxybisbutane	170.41		15.87
Tetrachloromethane	97.08		17.49
Squalane ^b	525.30		16.16
n-Hexadecane	294.12	323.2	16.34
t-Butylcyclohexane	173.93		16.00
1-Chlorobutane	105.10		17.12
1,4-Dichlorobutane	112.12		19.78
Ethylbenzene	123.06	144.9	
omcts ^c	314.00		
Butyl ethanoate	132.61		17.78
Diethyl hexadedioate	202.25		18.16
Solutes			
Anthracene	150.0	202.2	$(a_1(s) = 0.01049)$
Carbazole	150.0		(a ₁ (s) = 0.009354)
Thianthrene	156.0		$(a_1(s) = 0.04411)$
Naphthalene	123.0	155.8	$(a_1(s) = 0.312)$
Biphenyl	149.4	182.0	$(a_1(s) = 0.4025)$
Iodine	59.6		$(a_1(s) = 0.258)$
1,2-Diphenylethanedione	183.0		$(a_1(s) = 0.224)$
1,4-Benzoquinone	82.1		$(a_1(s) = 0.182)$
1,4-Dibromobenzene	118.0	156.6	$(a_1(s) = 0.248)$
Pyrene	166.5	213.0	$(a_1(s) = 0.1282)$
Stannic iodide	151.0		$(a_1(s) = 0.1127)$

TABLE IV. Solute and Solvent Properties used in the NIBS Predictions

^a equivalent to $\delta_i / (10^3 \text{ g/kg}^{1/2} \text{ m}^{-1/2} \text{ s}^{-1})$.

^b Squalane is 2,6,10,15,19,23-hexamethyltetracosane.

^c OMCTS is octamethylcyclotetrasiloxane.

and

$$RT \{ \ln (a_1(s)/\phi_1) - (1 - \phi_1)[1 - V_{m,1}/(x_2^{(s)} V_{m,2} + x_3^{(s)} V_{m,3})] \} = (1 - \Theta_1)^2 [\Theta_2^{(s)} (G_1^{FH})_2^{\infty} + \Theta_3^{(s)} (G_1^{FH})_3^{\infty} - A_1 (x_2^{(s)} A_2 + x_3^{(s)} A_3)^{-1} G_{23}^{FH}]$$

$$[VA]$$

depending upon whether Raoult's law (eqn. [XA]) or the Flory-Huggins model (eqn. [VA]) is used to define solution ideality.

The predictive abilities of these new equations are compared in Table V for 49 systems. The unavailability of molecular surface areas for 1,2-diphenylethanedione, 1,4-benzoquinone, tetrachloromethane, and several other solvents prevented the application of eqns. [XA] and [VA] to the remaining 79 systems considered in Table III. Equation [XA], based upon surface areas as weighting factors for the excess free energies relative to Raoult's law, is seen to be the most generally applicable predictive expression with an overall average root-mean-square (rms) deviation of about 2.0 % and a maximum error for a single data point of about 9.5 %. This maximum deviation occurs in a system (benzene + n-heptane) in which conflicting values of G_{23}^{E} were reported. As shown in Table V, deviations between the predicted and observed solubilities depend to a large extent upon which literature source is used for the solvent properties. This leads to two sets of predicted anthracene and pyrene solubilities that differ from each other by as much as 6 %. Discrepancies in the reported values of G_{23}^{E} were not noted for the remaining binary systems listed in Tables III and V. The primary advantage of eqn. [XA] over expressions based upon molar volumes, eqns. [XV] and [VV], is its applicability to anthracene and pyrene solubilities in solvent mixtures containing either benzene, methylbenzene or 1,4dimethylbenzene. If these 29 systems are excluded from the calculations, eqns. [XV] and [VV] are slightly better than equations based upon surface areas.

Unfortunately, the present set of calculations does not clearly establish whether weighting factors are better approximated with molar volumes or surface areas. From the standpoint of calculational simplicity and the ready availability of molar volumes, eqn. [XV] is preferred, and some support for this form can be found in its adaptability to the Scatchard-Hildebrand solubility parameter theory. Similar support for eqns. [XA] and [VA] can be found in correlations of partition coefficients with surface areas and in several semi-empirical expressions developed for predicting vapor-liquid equilibrium. Equation [VV], however, is also applicable to polymer solutions, and this form of the basic NIBS model is preferred by this author because it is more ideally suited to concentration-based equilibrium constants and to gas-liquid chromatographic partition coefficients. Furthermore, Chiou and Manes (9) have shown that the Flory-Huggins model, upon which eqn. [VV] is based, represents a more realistic description of ideality in systems having molecules of moderate size disparity.

EXTENDED NIBS MODEL FOR SYSTEMS HAVING SOLUTE-SOLVENT COMPLEXATION

An early detailed treatment of association equilibria was presented by Gibbs (26). He considered the anomalous vapor densities of compounds like nitrogen dioxide and acetic acid, and concluded that these compounds must be strongly associated. By

	RMS Deviations (%	
nary Solvent System	[XX]	[VA]
olute = Naphthalene		
Benzene + cyclohexane	+ 0.4	+ 0.6
Benzene + n-hexane	+ 1.9	+ 2.2
Cyclohexane + n-hexadecane	+ 2.8	+ 1.5
n-Hexane + n-hexadecane	+ 1.7	+ 0.6
Benzene + n-hexadecane	+ 3.3	+ 2.5
Cyclohexane + n-hexane	0.8	0.8
Benzene + methylbenzene	+ 0.5	+ 0.7
Cyclohexane + methylbenzene	+ 1.0	+ 1.0
Ethylbenzene + cyclohexane	+ 1.4	+ 1.5
olute = Anthracene		
Cyclohexane + n-heptane	0.6	+ 1.0
Cyclohexane + cyclooctane	+ 1.0	+ 1.2
Cyclohexane + n-octane	+ 0.9	+ 1.5
Cyclohexane + 2,2,4-trimethylpentane	+ 0.5	+ 1.1
Cyclohexane + n-hexane	0.3	0.3
Benzene + n-heptane	+ 5.9	+ 6.9
Benzene + n-heptane	+ 2.1	+ 3.1
-	- 1.8	- 1.7
Benzene + cyclohexane		- 1.7
Benzene + cyclohexane	1.1	+ 3.1
Benzene + n-hexane	+ 2.6	+
Benzene + cyclooctane	- 3.6	3.0
Benzene + 2,2,4-trimethylpentane	+ 1.8	+ 3.0
Benzene + n-octane	+ 4.0	+ 5.2
Benzene + methylcyclohexane	2.9	3.5
Methylbenzene + n-hexane	0.9	1.0
Methylbenzene + n-heptane	1.3	+ 1.6
Methylbenzene + methylcyclohexane	- 5.7	- 5.6
Methylbenzene + n-octane	1.3	+ 1.8
Methylbenzene + cyclooctane	1.1	- 1.7
1,4-Dimethylbenzene + n-hexane	- 2.0	- 2.0
1,4-Dimethylbenzene + cyclohexane	0.6	0.6
1,4-Dimethylbenzene + methylcyclohexane	- 5.1	- 5.1
1,4-Dimethylbenzene + n-octane	- 1.3	- 1.2
1,4~Dimethylbenzene + n-heptane	+ 1.2	+ 1.4
olute = Biphenyl		
Cyclohexane + n-hexane	+ 1.4	+ 1.5
- Cyclohexane + n-octane	+ 0.9	+ 1.1
Cyclohexane + n-heptane	+ 1.0	+ 1.1
lute = Pyrene		
Cyclohexane + n-hexane	- 1.6	- 1.4
Cyclohexane + n-heptane	- 0.8	0.4
Cyclohexane + n-octane	0.8	0.4
Cyclohexane + 2,2,4-trimethylpentane	0.5	+ 1.0
	- 1.0	- 0.7
Cyclohexane + cyclooctane	- 1.0 2.0	- 0.7
Benzene + n-hexane		
Benzene + cyclohexane	- 4.2	- 4.2
Benzene + n-heptane	+ 2.1	+ 2.8

TABLE V. Comparison Between Experimental Solubilities and Predicted Values Based Upon the NIBS Equations [XA] and [VA]

TABLE V. (Continued)		
Benzene + n-octane Benzene + cyclooctane Benzene + 2,2,4-trimethylpentane	- 4.0 - 7.6 0.8	- 2.8 - 7.1 + 1.5
Solute = 1,4-Dibromobenzene n-Hexane + n-hexadecane	+ 1.7	0.5

^a % RMS Deviation = 100 { $\Sigma [\ln x_1(calc)/x_1(exp)]^2/N$ }^{1/2}; the algebraic sign indicates that all deviations were of the same sign.

^b Experimental solubilities and literature references for the binary solvent properties are given elsewhere (1,23,44-47,50). attributing deviations from the expected vapor densities solely to the formation of associated molecules, and by assuming that the individual monomeric and associated species obeyed the ideal gas law, Gibbs calculated equilibrium constants and formation enthalpies for reactions such as

2 NO₂ \searrow N₂O₄ 2 CH₃COOH \bigcirc (CH₃COOH)₂ PCl₃ + Cl₂ \bigcirc PCl₅

The basic idea that association parameters can be inferred by observing deviations from an idealized relation has persisted almost without modification to the present. In fact, it is fair to state that virtually all published thermodynamic constants for complexation reactions have been obtained by comparing experimental results on associating systems with expectations from some ideal law or combination of laws.

It is not difficult to identify distinct schools of thought regarding the propriety of various methods for treating experimental data to obtain association parameters. At one extreme are those who, with Dolezalek (27,28), ascribe all deviations from ideality to the formation of chemical compounds between interacting molecules. Negative deviations from Racult's law are rationalized in terms of the assumed existence of heteromolecular complexes, while positive deviations are attributed to the formation of homomolecular complexes between molecules of the individual components. However, there have been numerous challenges to the assumption that all deviations from the ideal solution are chemical in origin. Quite early, van Laar (29-31) advocated the concept that physical factors that are too weak to stabilize discrete molecular aggregates lead to nonideality in nonelectrolyte solutions. Molecular theories of liquid mixtures, such as the Scatchard-Hildebrand solubility parameter model, can account for fairly sizeable deviations from Raoult's law in systems where chemical effects are presumably absent. Consequently, it is often argued that complex formation should be considered to occur only to the extent that solution nonideality exceeds that predicted by models based upon nonspecific physical interactions. There is, as one can imagine, still considerable ground for disagreement concerning the quantitative contributions of physical effects in associating systems, or stated differently, the degree to which activity coefficient effects complicate the interpretation of experimental data. These ambiguities clearly make it difficult to develop meaningful descriptions and explanations of solution nonideality, particularly in the case of weak association complexes.

The chemical and physical descriptions of solutions represent extreme, one-sided statements of what thermodynamicists believe to be the actual situation. Generally, both physical and chemical forces should be taken into account. A comprehensive theory of liquid solutions should provide for a smooth transition from one limit of an entirely physical description to the other limit of a completely chemical description. It is, of course, difficult to formulate theories that take into account the physical and chemical effects, as the mathematics become complex and the number of adjustable parameters rapidly increases. Nevertheless, a few classical attempts have been made and in this section the Extended NIBS approach for describing the solubility behavior of crystalline solutes in complexing systems will be discussed in detail.

The success of eqn. [VV] in predicting solubilities in binary solvent mixtures with molar volumes covering a three-fold range and for solutes encompassing up to a 14fold range of mole fraction solubilities suggests that this expression should provide adequate estimates of the physical contributions to nonideality in systems containing chemical interactions such as those between the solute and a complexing solvent. Application of the Flory-Huggins form of the basic NIBS mixing model to the quarternary system (A₁, B, C₁, AC)

$$A_1 + C_1 \xrightarrow{} AC \qquad K_{AC}^{\phi} = \phi_{AC} / (\phi_{A1} \phi_{C1}) \qquad [30]$$

takes the form

$$G = RT [n_{A1} \ln \phi_{A1} + n_B \ln \phi_B + n_{C1} \ln \phi_{C1} + n_{AC} \ln \phi_{AC}] + (n_{A1} V_{m,A1} + n_B V_{m,B} + n_{C1} V_{m,C1} + n_{AC} V_{m,AC}) [\phi_{A1} \phi_B A_{A1B} + \phi_{A1} \phi_{C1} A_{A1C1} + \phi_{A1} \phi_{AC} A_{A1AC} + \phi_B \phi_{C1} A_{BC1} + \phi_B \phi_{AC} A_{BAC} + \phi_{C1} \phi_{AC} A_{C1AC}]$$
[31]

the only assumption being that the molar volume of the AC-complex equals the sum of the molar volumes of components A and C, that is, $V_{m,AC} = V_{m,A} + V_{m,C}$. Through suitable mathematical manipulations and simplifying approximations for the three binary interaction parameters involving the molecular complex, eqn. [31] can be transformed into the following expression

$$RT [ln (a_{A}(B)/\phi_{A1}) - 1 + V_{m,A}/V_{soln}] = (1 - \phi_{A})^{2} [\phi_{B}^{(s)} (G_{A}^{FH})_{B}^{\circ} + \phi_{C}^{(s)} (G_{A}^{FH})_{C}^{\circ} - V_{m,A} (x_{B}^{(s)} V_{m,B} + x_{C}^{(s)} V_{m,C})^{-1} G_{BC}^{FH}]$$
[32]

for describing the solubility of a crystalline solute (component A) in binary solvent mixtures, where

$$(G_{A}^{FH})_{B}^{\circ\circ} = RT (1 - \phi_{A})^{-2} [\ln (a_{A}(B)/\phi_{A}) - (1 - \phi_{A})(1 - V_{m,A}/V_{m,B})]$$
[33]

$$(G_{A}^{FH})_{C}^{\infty} = RT (1 - \phi_{A})^{-2} [\ln (a_{A}(s)/\phi_{A1}) - 1 + \phi_{A1} + \phi_{C}(V_{m,A}/V_{m,C})]$$
[33]

$$1/V_{soln} = \phi_{A1}/V_{m,A} + \phi_{B}/V_{m,B} + \phi_{C1}/V_{m,C1} + \phi_{AC}/V_{m,AC}$$
[34]

Calculation of the solute-solvent equilibrium using eqn. [32] is relatively straightforward. The quantities $(G_A^{FH})_B^{\circ}$ and $(G_A^{FH})_C^{\circ}$ are calculated from the measured volume fraction solubility of the solute

$$\phi_{A} = \phi_{A1} \left[1 + V_{m,A} K_{AC}^{\phi} \phi_{C1} / (V_{m,A} + V_{m,C}) \right]$$
[35]

in the pure solvents using an assumed value for the equilibrium constant. These quantities, along with the excess Gibbs energy of the binary solvent mixture, are then used in eqn. [32] to calculate ϕ_A via an iterative approach. One continues to vary K_{AC}^{ϕ} until one obtains a numerical value that best describes the experimental solubilities in a particular binary solvent mixture.

When the solubility is sufficiently small, $\phi_A = 0$ and $1 - \phi_A = 1$, reasonable estimates of K_{AC}^{ϕ} are often obtainable from a simplified form of eqn. [32] relating the overall solute solubility in the binary solvent mixture to the solubility in the two pure solvents, $(\phi_A)_B$ and $(\phi_A)_C$.

$$\ln (\phi_{A}) = \phi_{B}^{(s)} \ln (\phi_{A})_{B} + \phi_{C}^{(s)} \ln (\phi_{A})_{C} + \ln [1 + V_{m,A} K_{AC}^{\phi} \phi_{C}^{(s)} / (V_{m,A} + V_{m,C})] - \phi_{C}^{(s)} \ln [1 + V_{m,A} K_{AC}^{\phi} / (V_{m,A} + V_{m,C})] - V_{m,A} (RT)^{-1} (x_{B}^{(s)} V_{m,B} + x_{C}^{(s)} V_{m,C})^{-1} G_{BC}^{FH} [37]$$

In the absence of solute-solvent complexation, $K_{AC}^{\phi} = 0$, eqns. [32] and [37] correctly reduce to eqn. [VV] of the basic NIBS model, thereby providing a smooth transition between complexing and noncomplexing systems.

To calculate the equilibrium constant, substitute the solute solubility at a particular solvent composition (*i.e.*, $\phi_B^{(S)} = 0.5$) into eqn. [37] and solve the resulting mathematical expression for K_{AC}^{ϕ} . For example, to evaluate the carbazole-bisoxybutane association constant from the carbazole solubility in the n-hexane (B) + 1,1,-oxybisbutane (C) system at $x_C^{(S)} = 0.3404$ ($\phi_C^{(S)} = 0.4007$), one would need to solve in 0.001208 = (0.5993) in 0.0001585 + (0.4007) in 0.004414

+ ln [l + K_{AC}^{ϕ} (150.00)(0.4007)/(324.41)]

- (0.4007) ln [1 + K_{AC}^{ϕ} (150.00)/(324.71)]

+ [(150.00)(49.04)/(8.314)(298.15)(144.75)]

obtaining a numerical of $K_{AC}^{\phi} = 24.0$. Volume fraction compositions of carbazole used in the preceding example were

 $\{\phi_A\}_C = (0.005011)(150.00)/[(0.005011)(150.00) + (0.994989)(170.41)] = 0.004414$ $\{\phi_A\}_B = (0.000139)(150.00)/[(0.000139)(150.00) + (0.999861)(131.51)] = 0.0001585$ $\phi_A = (0.001166)(150.00)/[(0.001166)(150.00) + (0.998834)(144.75)] = 0.001208$ calculated from the experimental solubilities (which are listed in the compilation portion of this volume) using the ideal molar volume approximation. Excess Gibbs energy of the binary solvent mixture, $G_{BC}^{FH} = 49.04 \text{ J mol}^{-1}$, was estimated from the solubility parameter model, with $\delta_{hexane} = 14.87 \text{ J}^{1/2} \text{ cm}^{-3/2}$ and $\delta_{oxybisbutane} = 15.87 \text{ J}^{1/2} \text{ cm}^{-3/2}$.

McCargar and Acree (32-35) showed that the Extended NIBS model can be used to calculate solute-solvent association constants from the measured solubility in binary solvent mixtures. Calculated carbazole-oxybisbutane equilibrium constants are summarized in Table VI for the ten inert hydrocarbon cosolvents the authors considered. Inspection of Table VI reveals that the Extended NIBS model does mathematically describe the experimental solubilities to within an average absolute deviation of \pm 2 % using a single association constant, indicating that the solubility data is both internally consistent and that there are no obvious outliers (incorrect entries) in the ten data sets. Calculated K_{AC}^{ϕ} values do vary slightly with inert cosolvent, the numerical values ranging from $K_{ac}^{\phi} \approx 22$ for n-heptane solvent to an upper limit of $K_{ac}^{\phi} \approx$ 30 for 2,2,4-trimethylpentane and t-butylcyclohexane. The success of the Extended NIBS model is even more remarkable if one realizes that the mole fraction solubilities of carbazole covered up to a 35-fold range, and that the inert hydrocarbon cosolvents included both small (cyclohexane, n-hexane) and large (n-hexadecane, squalane) alkanes. Also included in Table VI are calculated association constants for presumed anthracenediethyl hexanedioate (36), anthracene-butyl ethanoate (37), anthracene-chlorobutane (38), pyrene-dichlorobutane (39) and anthracene-dichlorobutane (40) molecular

TABLE VI.

Volume Fraction and Mole Fraction Based Association Constants for Presumed Solute-Solvent Molecular Complexes

Inert Hydrocarbon	K _{AC} ¢,a	% Dev. ^b	K _{AC} ^{x,a}	% Dev. ^b
Complex = Carbazole-Oxybis	butane	<u></u>		······································
n-Hexane	24.0	2.0	15.2	2.0
n-Heptane	22.0	1.8	12.0	1.8
n-Octane	25.0	1.7	12.5	1.6
Cyclohexane	24.0	2.2	18.5	1.8
Methylcyclohexane	26.0	1.8	17.0	1.6
Cyclooctane	25.0	2.1	15.5	2.1
2,2,4-Trimethylpentane	30.0	1.7	14.0	1.4
n-Hexadecane	24.0	1.4	6.3	1.4
Squalane ^c	23.0	1.7	3.5	1.6
-Butylcyclohexane	30.0	1.5	14.0	1.7
Complex = Anthracene-Dieth	yl hexanedio	ate		
n-Hexane	10.5	0.6		
n-Heptane	10.5	0.9		
n-Octane	10.5	0.9		
Cyclohexane	13.0	1.6		
- Methylcyclohexane	12.5	1.1		
2,2,4-Trimethylpentane	9.0	1.8		
Complex = Anthracene-Butyl	ethanoate			
n-Hexane	5.5	0.3	3.0	0.5
n-Heptane	5.8	0.4	2.7	0.6
n-Octane	5.5	0.6	2.4	1.0
Cyclohexane	8.0	1.5	5.9	1.3
- Methylcyclohexane	8.0	0.9	4.1	0.4
2,2,4-Trimethylpentane	4.5	1.3	1.7	0.8
Complex = Anthracene-Chlor	obutane			
n-Hexane	3.5	0.6		
n-Heptane	3.5	0.6		
n-Octane	3.0	0.6		
Cyclohexane	6.0	1.3		
Methylcyclohexane	5.0	0.3		
2,2,4-Trimethylpentane	2.5	1.0		
Complex = Anthracene-Dichl	orobutane			
n-Heptane	8.5	0.9		
n-Octane	8.0	1.1		
Cyclohexane	12.0	1.2		
Methylcyclohexane	10.0	1.0		
Complex = Pyrene-Dichlorob	utane			
n-Hexane	13.5	1.6		
n-Heptane	15.0	1.2		
n-Octane	12.5	1.8		
Cyclohexane	18.0	1.9		
Methylcyclohexane	15.0	1.1		
2,2,4-Trimethylpentane	11.0	3.9		

^a Scatchard-Hildebrand solubility parameter model was used to estimate G_{BC}^E. Association parameters are subject to re-evaluation whenever binary solvent

```
TABLE VI. (Continued)

properties become available.

<sup>b</sup> & Dev. = (100/N) \Sigma | \ln [x_1(cal)/x_1(exp)] |.

<sup>c</sup> Squalane is 2,6,10,15,19,23-hexamethyltetracosane.
```

complexes. Again the Extended NIBS model described the solubility behavior to within \pm 3 %, and there was no indication that any individual data point was in error.

Volume fraction-based carbazole-oxybisbutane equilibrium constants do vary slightly with inert cosolvent, and one naturally wonders if a mole fraction-based constant, K_{Ar}^{x} ,

 $A_1 + C_1 \longrightarrow AC$ $K_{AC}^x = x_{AC}/(x_{A1} x_{C1})$ [38] would be more appropriate. Volume fraction-based constants are consistent with the Flory-Huggins model definition of mixture ideality, whereas mole fraction concentrations are consistent with an ideal mixture defined in terms of Raoult's law. Modification of the entropic contribution eqn. [32] to include Raoult's law leads to the following expression

$$\ln x_{A} = \phi_{B}^{(s)} \ln (x_{A})_{B} + \phi_{C}^{(s)} \ln (x_{A})_{C} + \ln [1 + K_{AC}^{x} x_{C}^{(s)}] - \phi_{C}^{(s)} \ln [1 + K_{AC}^{x}] + V_{m,A}^{(RT)^{-1}} (x_{B}^{(s)} V_{m,B} + x_{C}^{(s)} V_{m,C})^{-1} G_{BC}^{E}$$
[39]

for solute solubility in a binary solvent. Again it has been assumed that the solute has a very limited solubility so that $1 - x_A = 1$ and $x_{C1} = x_C^{(S)}$. The rigorous derivation of eqn. [39] appears in the chemical literature (35).

Table VI summarizes the descriptive ability of eqn. [39] for carbazole solubilities in the ten binary alkane + 1,1-oxybisbutane solvent mixtures. Surprisingly, this particular form of the Extended NIBS model also describes the solubility data to an average deviation of about \pm 2 %, despite the fact that considerable molecular size disparity exists in both the n-hexadecane + 1,1oxybisbutane and squalane + 1,1,-oxybisbutane mixtures. The molar volume of squalane, $V_{m,souslane} = 525.30 \text{ cm}^3 \text{ mol}^{-1}$, is over three times greater than the molar volume of 1,1oxybisbutane, $V_{m,oxybisbutane} = 170.41 \text{ cm}^3 \text{ mol}^{-1}$. Comparable descriptive abilities suggest that it may be impossible to resolve questions regarding the superiority between eqns. [37] and [39] solely on the basis of experimental solubilities in a single binary solvent system. If all ten systems are considered as a whole, however, one discovers that the volume fraction-based equilibrium constants are more independent of the inert hydrocarbon cosolvent. Numerical values of the volume fraction equilibrium constant vary by about 36 %, while the mole fraction constant of K_{AC}^{X} = 18.5 for cyclohexane is more than five times greater that $K_{ac}^{x} = 3.5$ for squalane cosolvent. Equations [37] and [39] theoretically require that the equilibrium parameters depend only upon purecomponent chemical potentials (μ_A^* , μ_C^* and μ_{AC}^*), molar volumes of components A and C, and the AAICI binary interaction parameter which was initially used in modelling the quarternary system (A1, B, C1, AC).

Readers are reminded that it is fundamentally impossible to prove that a particular model is correct. One can demonstrate, however, that a model is consistent with a wide range of experimental observations. Similarly, it can be shown that a given model is inconsistent with experimental data so that the model must be either incorrect or incomplete. In the case of the NIBS model, one started with the prior knowledge that the basic model described experimental solubilities in a large number of binary solvent mixtures containing only nonspecific interactions. The Extended NIBS model and expressions derived therefrom mathematically describe the solubility behavior of carbazole in binary alkane + 1,1-oxybisbutane, of anthracene in binary alkane + diethyl hexanedioate, of anthracene in binary alkane + butyl ethanoate, and of anthracene in binary alkane + chloroalkane solvent mixtures. The ability to accurately describe experimental solubility data with semi-empirical thermodynamic models ensures, in part, that the measured values are internally consistent with each other and that there are no obvious outliers. Models, such as the NIBS and Extended NIBS models, do provide a means for assessing the reliability of measured solubility data in binary solvent mixtures, particularly in those many instances for which only a single set of measurements exist.

MATHEMATICAL REPRESENTATION OF SOLUBILITY DATA IN BINARY SOLVENTS

Expressions for predicting the thermodynamic properties of ternary nonelectrolyte systems have served as the point of departure for mathematical representation of experimental excess molar Gibbs energy, excess molar heat capacity, excess molar enthalpy and excess molar volume data. Differences between predicted and observed values are expressed as

 $(Z^{E}_{ABC})^{exp} - (Z^{E}_{ABC})^{calc} = x_{A} x_{B} x_{C} Q_{ABC}$ [40] with Q-functions of varying complexity. For most systems encountered, the experimental data can be adequately represented by a power series expansion

$$Q_{ABC} = A_{ABC} + \Sigma B_{AB}^{(i)} (x_A - x_B)^i + \Sigma B_{AC}^{(j)} (x_A - x_C)^j + \Sigma B_{BC}^{(k)} (x_B - x_C)^k$$
 [41]

though rarely are experimental data determined with sufficient precision to justify more than a few parameters.

Conceptually, these ideas can be extended to solute solubilities in binary solvent mixtures, however, there has never been up until this volume a sufficiently large solid solute solubility data base to warrant computerized storage in equational form. With computerized data storage and retrieval becoming increasingly popular, it seems appropriate to review the various mathematical expressions that have been proposed in the chemical literature for describing the variation of solute solubility with binary solvent composition. Like the predictive expressions discussed in the preceding sections, mathematical representations provide not only a means to screen experimental data sets for possible outliers in need of redetermination, but also facilitate interpolation at solvent compositions falling between measured data points.

Acree and coworkers (17,18,54) suggested possible mathematical representations for isothermal solubility data based upon either a Combined NIBS/Redlich-Kister model

$$\ln x_{A} = x_{B}^{(s)} \ln (x_{A})_{B} + x_{C}^{(s)} \ln (x_{A})_{C} + x_{B}^{(s)} x_{C}^{(s)} \Sigma S_{1} (x_{B}^{(s)} - x_{C}^{(s)})^{\dagger}$$
[42]

or Modified Wilson equation

$$\ln (a_{A}(s)/x_{A}) = 1 - x_{B}^{(s)} \{1 - \ln [a_{A}(s)/(x_{A})_{B}]\}/(x_{B}^{(s)} + x_{C}^{(s)} \Lambda_{BC}^{ad_{J}}) - x_{C}^{(s)} \{1 - \ln [a_{A}(s)/(x_{A})_{C}]\}/(x_{B}^{(s)} \Lambda_{CB}^{ad_{J}} + x_{C}^{(s)})$$
[43]

where the various S_i and Λ_{ij}^{adj} "curve-fit" parameters can be evaluated via least squares analysis. A summarized comparison presenting the descriptive abilities of eqns. [42] and [43] is given in Tables VII and VIII, respectively. Careful examination of Table VII reveals that eqn. [43] provides a reasonable mathematical representation of the carbazole solubility data in all 16 systems considered, which cover up to a 40-fold and 340-fold range in mole fraction solubilities in the case of 2,2,4-trimethylpentane + 1,1-oxybisbutane and 2,2,4-trimethylpentane + tetrahydropyran. The actual experimental solubilities are given in the data compilation portion of this volume. Back-calculated and experimental values generally differ by less than \pm 3 %. Surprisingly, this simple two-parameter expression is able to imitate the sharp, pronounced solubility enhancement that occurs when both 1,1-oxybisbutane and tetrahydropyran are initially added to a pure alkane cosolvent. Carbazole solubilities increase between 5- and 15fold by the time the tetrahydropyran mole fraction reaches $x_{THP} = 0.15$.

Based upon spectroscopic studies on similar mixtures, carbazole is expected to interact with both ethers to form a 1:1 carbazole-ether association complex. Complexation with tetrahydropyran is further suggested by the fact that the measured carbazole solubility far exceeds the activity of the solid solute, *i.e.*, $x_A > a_A(B)$. The calculated activity coefficient of carbazole in pure tetrahydropyran is considerably less than unity, $\gamma_A^{sat} = a_A(s)/(x_A)_{THP} = 0.218$, indicating substantial negative deviations from Raoult's Law. Included in Table VII are similar calculations for anthracene dissolved in select binary solvent mixtures. While eqn. [43] does describe the solubility data as a whole, it should be noted that there may be one or two individual data points within each system for which deviations may exceed ± 6 %.

During the course of evaluating parameters for the Modified Wilson equation, the authors noted that on a Λ_{BC}^{adj} versus Λ_{CB}^{adj} versus & Deviation three-dimensional map there existed several parameter pairs which described the carbazole solubility to within the quoted uncertainty. For example, in the case of carbazole solubilities in 2,2,4-trimethylpentane + tetrahydropyran mixtures, the percent deviation was approximately 4 % for $\Lambda_{BC}^{adj} = 1.300$ and $\Lambda_{CB}^{adj} = 0.14$, 2.6 % for $\Lambda_{BC}^{adj} = 1.25$ and $\Lambda_{CB}^{adj} = 0.12$, and 1.8 % for $\Lambda_{BC}^{adj} = 1.188$ and = $\Lambda_{CB}^{adj} = 0.107$. No special attempt was made to optimize calculated Λ_{ij}^{adj} values as the authors wished only to learn if eqn. [43] could be used to mathematically represent experimental data in systems covering extremely large solubility ranges. Any parameter set having ± 2.5 % (quoted experimental uncertainty in the alkane + dibutyl ether systems) was sufficient for this purpose.

In comparison, the two-parameter form of eqn. [42] failed badly to describe the carbazole solubility data as the average absolute deviations were about 15-25 %. Many of these systems have highly skewed $\ln x_A$ versus $x_B^{(s)}$ curves caused by the large initial solubility enhancement, and will necessitate expanding the Redlich-Kister powere series by at least 2 (perhaps more) additional terms. Similar failures in the Redlich-Kister equation can be found in the chemical literature in the mathematical representation of exces enthalpy data for highly nonideal alcohol + hydrocarbon mixtures. Linear least squares analysis of

$$[\ln x_{A} - x_{B}^{(s)} \ln (x_{A})_{B} + x_{C}^{(s)} \ln (x_{A})_{C}] / x_{B}^{(s)} x_{C}^{(s)}$$
[44]

Solvent (B) + Solvent (C)	Λ _{ij} edj,a	% Dev. ^b
Solute = Carbazole		
t-Butylcyclohexane + tetrahydropyran	1.151	1.5
• • •	0.116	
n-Hexane + tetrahydropyran	2.280	1.1
• •	0.0560	
n-Hexadecane + tetrahyropyran	0.650	3.2
	0.219	
Cyclohexane + tetrahydropyran	1.800	1.6
	0.0900	
n-Heptane + tetrahydropyran	1.405	3.3
·	0.106	
2,2,4-Trimethylpentane + tetrahydropyran	1.188	1.8
	0.107	1.0
n-Hexane + 1,1-oxybisbutane	2.349	2.6
. HEADING - 1/1-DAYDIEBALGHE	0.0100	2.0
n-Heptane + 1,1-oxybisbutane	2.179	1.5
-neptane + 1,1-0xybibbutane		1.5
n-Octane + 1,1-oxybisbutane	0.0308	2.4
-Octane + 1,1-OxyDisbutane	2.188	2.4
	0.0287	
Aethylcyclohexane + 1,1-oxybisbutane	2.897	1.7
	0.0195	
Cyclooctane + 1,1-oxybisbutane	3.113	1.5
	0.0110	
-Hexadecane + 1,1-oxybisbutane	2.630	1.6
	2.985	
Squalane + 1,1-oxybisbutane	1.860	1.5
	4.390	
-Butylcyclohexane + 1,1-oxybisbutane	2.520	1.8
	0.0260	
2,2,4-Trimethylpentane + 1,1-oxybisbutane	2.321	2.0
	0.00833	
Cyclohexane + 1,1-oxybisbutane	2.926	2.2
	0.000	
<u>olute = Anthracene</u>		
-Hexane + dibutyl oxalate	3,825	0.8
	0.290	
-Heptane + dibutyl oxalate	3.323	0.6
	0.304	
-Octane + dibutyl oxalate	3.263	0.7
	0.308	
yclohexane + dibutyl oxalate	5.353	0.3
	0.279	
ethylcyclohexane + dibutyl oxalate	6.037	0.5
	0.345	0.0
,2,4-Trimethylpentane + dibutyl oxalate	4.302	0.4
	0.514	0.4

TABLE VII. Mathematical Representation of Carbazole and Anthracene Solubilities in artica Mil .

 a Adjustable parameters for the Modified Wilson equation are ordered as $\Lambda_{_{
m BC}}{}^{adj}$ and then Λ_{CB}^{adj} . ^b & Dev. = (100/N) Σ | ln [$x_A(cal)/x_A(exp)$] |.

lvent (B) + Solvent (C)	s _i	% Dev ^a	s _i	% Dev ^a
lute = Carbazole				
Butylcyclohexane + tetrahydropyran	5.473	17.8	4.250	2.6
	4.931		2.901	
			4.024	
			3.878	
Hexane + tetrahydropyran	8.415	19.7	6.951	1.9
	6.558		5.102	
			5.739	
			4.806	
lexadecane + tetrahyropyran	2.971	11.6	2.103	1.3
	3.216		2.001	
			2.776	
lohexane + tetrahydropyran	7.153	18.4	1.992 5.901	3.8
Tournane 4 certanydropyrau	7.153 5.214	TO • 4	4.004	2.0
	~~~~		4.265	
			3.495	
leptane + tetrahydropyran	6.863	25.8	4.853	3.3
	6.334		2.551	
			5.161	
			5.564	
,4-Trimethylpentane + tetrahydropyran	5.582	14.6	4.720	4.2
	4.407		2.998	
			3.272	
			4.012	
exane + 1,1-oxybisbutane	3.850	10.7	3.250	2.1
	3.388		1.671	
			1.865	
			3.211	
eptane + 1,1-oxybisbutane	3.229	5.5	2.921	2.9
	2.490		1.999	
thene + 1 1_emiliability	2 202	- •	1.369	1 -
ctane + 1,1-oxybisbutane	3.209	7.1	2.650 2.001	1.7
	2.190		2.001	
ylcyclohexane + 1,1~oxybisbutane	4.035	10.1	3.398	1.9
"Telesenergie - Els ovipropagaie	3.209		2.302	
			2.316	
			1.137	
exadecane + 1,1-oxybisbutane	1.618	2.7		
•	1.092			
looctane + 1,1-oxybisbutane	3.829	10.9	3.200	2.7
	3.105		1.998	
			2.074	
			1.856	
alane + 1,1-oxybisbutane	0.517	1.6		
	0.592			
utylcyclohexane + 1,1-oxybisbutane	3.328	6.7	2.848	2.2
	2.379		2.332	

TABLE VIII. Mathematical Representation of Carbazole and Anthracene Solubilities in

TABLE VIII. (Continued)				
2,2,4-Trimethylpentane + 1,1-oxybisbutane	3.648	7.1	3.150	2.3
2,2,4-Irimethylpencame ( 1,1 chipteratum	2.752		1.951	
			1.964	
			1.598	
Cyclohexane + 1,1-oxybisbutane	4.286	13.7	3.615	3.7
Cyclonexane ( 1/1 Cxybiblecome	4.438		2.750	
			2.387	
			2.067	
<u>Solute = Anthracene</u>		F 0	2.350	0.7
n-Hexane + dibutyl oxalate	2.716	5.0	1.449	017
	1.765		1.375	
				1.0
n-Heptane + dibutyl oxalate	2.252	3.0	2.100	1.0
	1.305		1.156	
			0.626	0.4
n-Octane + dibutyl oxalate	2.065	3.0	1.860	0.4
	1.076		0.988	
		_	0.712	
Cyclohexane + dibutyl oxalate	2.714	6.0	2.400	2.0
	2.256		1.726	
			1.368	
Methylcyclohexane + dibutyl oxalate	2.512	5.6	2.100	1.2
-	1.929		1.567	
			1.550	
2,2,4-Trimethylpentane + dibutyl oxalate	2.512	4.1	2.250	0.9
	1.519		1.348	
			0.968	

 $\frac{1}{9}$  % Dev. = (100/N)  $\Sigma$  | ln [ $x_A(cal)/x_A(exp)$ ] |.

versus  $x_8^{(5)} - x_c^{(5)}$  leads to abnormally large  $S_0$  and  $S_1$  values as the two-parameter form of eqn. [42] tries to describe the solubility behavior near the pure alkane cosolvent. Unfortunately, even with these large "curve-fit" parameters, eqn. [42] still underpredicts the initial carbazole solubilities in binary n-hexane + tetrahydropyran, n-heptane + tetrahydropyran, cyclohexane + tetrahydropyran, and 2,2,4-trimethylpentane + tetrahydropyran mixtures by as much as 25 %. At mole fraction compositions near  $x_8^{(s)}$ = 0.5, eqn. [42] has overcompensated for the high initial skew and now the backcalculated solubilities are much too large.

Unlike the Modified Wilson model discussed above, eqn. [42] does contain provisions for additional parameterization. Examination of Table VIII further reveasl that eqn. [42] requires 3 or 4 parameters to describe 13 of the 16 carbazole systems to within an average deviation of 3.5 %. Slightly larger average deviations of 3.8 % and 4.2 % were noted in cyclohexane + tetrahydropyran and 2,2,4-trimethylpentane + tetrahydropyran mixtures where the reproducibility in measured carbazole solubilities was about  $\pm 4$  %. Again, there may be one or two individual data points within each system for which the deviation exceeds  $\pm 6$  %.

Excellent agreement between experimental values and those back-calculated from the Combined NIBS/Redlich-Kister and Modified Wilson equations further document the internal consistency of the anthracene and carbazole solubility data. For this latter set of systems there were no other convenient means to critically evaluate the published isothermal solubility data. The simple NIBS expressions based upon only nonspecific interactions are not applicable because of strong solute-solvent complexation. Lack of excess Gibbs energy data for the fairly nonideal alkane + tetrahydropyran solvent systems prevented one from using the Extended NIBS model. Many of the systems discussed as part of the NIBS comparisons (see Tables III and V) covered less than a 10-fold mole fraction range, and they too can be described by either the Combined NIBS/Redlich-Kister (eqn. [42]) or Modified Wilson (eqn. [43]) mathematical representation. In all of the computations performed to date, we failed to find any experimental data in need of redetermination.

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# ACENAPHTHENE SOLUBILITES IN BINARY SOLVENT MIXTURES

# I. <u>Alkane + Alkane (including cycloalkanes)</u>

None

II. Alkane + Aromatic Hydrocarbon

cyclohexane + benzene

### III. <u>Alkane + Ester</u>

None

IV. Alkane + Ether

None

V. <u>Alkane + Chloroalkane</u>

None

VI. Ether + Chloroalkane

None

VII. <u>Miscellaneous</u>

benzene + pyridine cyclohexane + pyridine benzene + thiophene cyclohexane + thiophene thiophene + pyridine 1,2,3,4-tetrahydronaphthalene + decahydronaphthalene

COMPONENTS:			ORIGINAL MEASUREMENTS:				
(1) Acenapht	hene; C ₁₂ H ₁₀ ;	[83-32-9]	Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E.				
(2) Cyclohex	(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]			J. Chem. Eng. Data <u>1985</u> , 30, 403-409.			
<pre>(3) Benzene;</pre>	C ₆ H ₆ ; [71-43-	-2]	5. Chem. Eng. Data <u>1909</u> , 50, 405 405.				
VARIABLES:	ARIABLES:		PREPARED B				
Temperature, Solvent composition			W.E. Acree, Jr.				
EXPERIMENTAL V	VALUES ^a		-				
T/K	x2 ^(s)	<b>x</b> 1	T/K	x2 ^(s)	×1		
306.55	0.0000	0.2253	303.95	0.7000	0.1333		
312.95	0.0000	0.2724	314.55	0.7000	0.2015		
319.85	0.0000	0.3309	325.25	0.7000	0.3032		
328.05	0.0000	0.4158	333.45	0.7000	0.4059		
335.95	0.0000	0.5101	339.95	0.7000	0.5084		
345.75	0.0000	0.6498					
			303.35	1.0000	0.0853		
312.75	0.3000	0.2467	307.35	1.0000	0.1031		
319.65	0.3000	0.3050	312.05	1.0000	0.1274		
333.25	0.3000	0.4545	316.45	1.0000	0.1565		
338.55	0.3000	0.5240	320.95	1.0000	0.1931		
344.55	0.3000	0.6148	325.65	1.0000	0.2421		
			329.95	1.0000	0.2984		
314.45	0.5000	0.2400	334.65	1.0000	0.3697		
325.85	0.5000	0.3459	339.85	1.0000	0.4645		
333.15	0.5000	0.4347	346.45	1.0000	0.5992		
343.15	0.5000	0.5815	354.45	1.0000	0.7742		
350.25	0.5000	0.7010					
^a x ₂ ^(s) : i solubilit	nitial mole in the solution of	fraction of binary ute.	solvent mixt	ture; x ₁ : mol	le fraction		
		AUXILIARY	INFORMATION				
ETHOD: APPARI	TUS/PROCEDUR		SOURCE AND	PURITY OF M	ATERIALS:		
Constant temp thermometer.	perature bath	and a precision	SOURCE AND PURITY OF MATERIALS: (1) 99.2 %, British Drug Houses, United Kingdom, was recrystallized and then				
Solubilities	were measure	d using a	<ul> <li>(2) Gold Label, 99.9+ %, Aldrich Chemica: Company, Milwaukee, Wisconsin, USA, was used as received.</li> </ul>				
trations were glass ampoule	e sealed in the	in a constant					
glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.				%, Aldrich Chemical as received.			
			ESTIMATED	ERRORS :			
			$\begin{array}{c} T/K: \ \text{prec} \\ x_2^{(s)}: \ \pm \ 0 \\ x_1: \ \pm \ 0.00 \end{array}$	ision <u>+</u> 0.1. .0001. 003.			

	DEPONENTS :		ORIGINAL MEASUREMENTS:				
(1) Acenaphth	<ol> <li>Acenaphthene; C₁₂H₁₀; [83-32-9]</li> <li>Benzene; C₆H₆; [71-43-2]</li> <li>Pyridine; C₅H₅N; [110-86-1]</li> </ol>		Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E.				
(2) Benzene;							
(3) Pyridine;				•	<u>1987</u> , <i>32</i> , 233–240.		
ARIABLES: Temperature, Solvent composition			B.; McLaughli m. Eng. Funda	um. <u>1983</u> , 22, 46-51			
		PREPARED BY:					
		W.E. Acre	æ, Jr.				
EXPERIMENTAL V	ALUES ^a		•				
T/K	x3 ^(s)	×1	T/K	x3 ^(s)	×1		
306.55	0.0000	0.2253	340.3	0.3000	0.5775		
312.95	0.0000	0.2724	349.6	0.3000	0.7182		
319.85	0.0000	0.3309					
328.05	0.0000	0.4158	306.7	1.0000	0.2102		
335.95	0.0000	0.5101	320.0	1.0000	0.3166		
345.75	0.0000	0.6498	332.9	1.0000	0.4592		
			337.5	1.0000	0.5191		
311.1	0.3000	0.2524	343.7	1.0000	0.6110		
322.9	0.3000	0.3545					
322.9 331.8	0.3000	0.3545 0.4570					
331.8 333.6 ^a x _x (s): i	0.3000 0.3000	0.4570 0.4786 fraction of binary	solvent mix	ture; x _i : mol	le fraction (		
331.8 333.6 ^a x _x (s): i	0.3000 0.3000 nitial mole :	0.4570 0.4786 fraction of binary	solvent mix	ture; x _i : mol	le fraction '		
331.8 333.6 ^a x _x ^(s) : i	0.3000 0.3000 nitial mole :	0.4570 0.4786 fraction of binary ute.	BOlvent mix		le fraction		
331.8 333.6 ^a x ₃ ^(s) : і воlubilit	0.3000 0.3000 nitial mole : y of the sol	0.4570 0.4786 fraction of binary ute. AUXILIARY	INFORMATION				
331.8 333.6 a _{x3} (s): <u>i</u> solubilit solubilit ETHOD: APPARA Constant temp thermometer.	0.3000 0.3000 nitial mole : y of the sol TUS/PROCEDUR erature bath	0.4570 0.4786 fraction of binary ute. AUXILIARY E and a precision	INFORMATION SOURCE AND (1) 99.2 Kingd	) PURITY OF M %, British D			
331.8 333.6 a _{x3} (s): <u>i</u> solubilit solubilit ETHOD: APPARA Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule	0.3000 0.3000 nitial mole : y of the sol TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s and placed	0.4570 0.4786 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant	INFORMATION SOURCE AND (1) 99.2 Kingd zone (2) Gold Compa	PURITY OF M %, British D lom, was recr refined. Label, 99.9+	<b>ATERIALS:</b> rug Houses, United ystallized and then %, Aldrich Chemica e, Wisconsin, USA,		
331.8 333.6 a x3 ^(s) : i solubilit solubilit Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule temperature t	0.3000 0.3000 nitial mole : by of the sol TUS/PROCEDUR merature bath were measure d. Mixtures sealed in t s and placed o equilibrat	0.4570 0.4786 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled	INFORMATION SOURCE AND (1) 99.2 Kingd zone (2) Gold Compa was u	PURITY OF M %, British D lom, was recr refined. Label, 99.9+ ny, Milwauke used as recei	ATERIALS: rug Houses, United ystallized and then %, Aldrich Chemica e, Wisconsin, USA, ved.		
331.8 333.6 ^a x ₃ ^(s) ; <u>i</u> solubilit <b>ETHOD:</b> APPARA Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule temperature t were rotated the bath temp by 0.1 K ever determined by ature at whic	0.3000 0.3000 nitial mole : y of the sol TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s and placed o equilibrat at a speed o erature was y 1200 secon visually no h the last t	0.4570 0.4786 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid	INFORMATION SOURCE AND (1) 99.2 Kingd zone (2) Gold Compa was u (3) Gold	PURITY OF M %, British D lom, was recr refined. Label, 99.9+ my, Milwauke used as recei Label, 99.9+	<b>ATERIALS:</b> rug Houses, United ystallized and then %, Aldrich Chemica e, Wisconsin, USA,		
331.8 333.6 ^a x ₃ ^(s) ; <u>i</u> solubilit <b>ETHOD:</b> APPARA Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule temperature t were rotated the bath temp by 0.1 K ever determined by ature at whic	0.3000 0.3000 nitial mole : y of the sol TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s and placed o equilibrat at a speed o erature was y 1200 secon visually no h the last t eared. At le	0.4570 0.4786 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.2 Kingd zone (2) Gold Compa was u (3) Gold	PURITY OF M %, British D lom, was recr refined. Label, 99.9+ my, Milwauke used as recei Label, 99.9+	ATERIALS: rug Houses, United ystallized and then %, Aldrich Chemica e, Wisconsin, USA, ved. %, Aldrich Chemica		
331.8 333.6 a x3(s): i solubilit solubilit <b>ETHOD: APPARA</b> Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule temperature t were rotated the bath temp by 0.1 K ever determined by ature at whic solute disapp ments were pe	0.3000 0.3000 nitial mole : y of the sol TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s and placed o equilibrat at a speed o erature was y 1200 secon visually no h the last t eared. At le	0.4570 0.4786 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.2 Kingd zone (2) Gold Compa was u (3) Gold	PURITY OF M %, British D kom, was recr refined. Label, 99.9+ iny, Milwauke sed as recei Label, 99.9+ iny was used	ATERIALS: rug Houses, United ystallized and then %, Aldrich Chemica e, Wisconsin, USA, ved. %, Aldrich Chemica		

omponents:			ORIGINAL MEASUREMENTS:				
(1) Acenaphthene; C ₁₂ H ₁₀ ; [83-32-9]			Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. <i>J. Chem. Eng. Data</i> <u>1985</u> , <i>30</i> , 403-409.				
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]			Coon, J.E.; Troth, M.; McLaughlin, E.				
(3) Pyridine; C ₅ H ₅ N; [110-86-1]					<u>.987</u> , <i>32</i> , 233-240.		
				3.; McLaughli n. Eng. Funda	.n, E. um. <u>1983</u> , <i>22</i> , 46-51		
ARIABLES:			PREPARED BY:				
Temperature, Solvent composition			W.E. Acre	e, Jr.			
EXPERIMENTAL \	ALUES ⁸						
T/K	x3 ^(s)	×1	T/K	x3 ^(s)	×1		
303.35	0.0000	0.0853	304.5	0.3000	0.1702		
307.35	0.0000	0.1031	310.3	0.3000	0.2079		
312.05	0.0000	0.1274	319.2	0.3000	0.2810		
316.45	0.0000	0.1565	326.8	0.3000	0.3602		
320.95	0.0000	0.1931					
325.65	0.0000	0.2421	306.7	1.0000	0.2102		
329.95	0.0000	0.2984	320.0	1.0000	0.3166		
334.65	0.0000	0.3697	332.9	1.0000	0.4592		
339.85	0.0000	0.4645	337.5	1.0000	0.5191		
		0.4045	00110				
346.45	0.0000	0.5992	343.7	1.0000	0.6110		
354.45 ^a x _x (s): i	0.0000	0.5992 0.7742 fraction of binary	343.7	1.0000			
354.45 ^a x _x (s): i	0.0000 nitial mole	0.5992 0.7742 fraction of binary	343.7	1.0000			
354.45 a _{Xx} (s): i	0.0000 nitial mole	0.5992 0.7742 fraction of binary ute.	343.7	1.0000 ture; x ₁ : mol			
354.45 ^a _{x3} (s): i solubilit	0.0000 nitial mole : y of the sol	0.5992 0.7742 fraction of binary ute. AUXILIARY	343.7 Bolvent mix	1.0000 ture; x ₁ : mol	le fraction		
354.45 a _{x3} (s); i solubilit <b>ETHOD: APPARA</b> Constant temp thermometer.	0.0000 nitial mole : y of the sol	0.5992 0.7742 fraction of binary ute. AUXILIARY E and a precision	343.7 Bolvent mix INFORMATION SOURCE AND (1) 99.2 Kingd	1.0000 ture; x ₁ : mol	le fraction		
354.45 a _{x3} (s); i solubilit method: Appara Constant temp thermometer. Solubilities dynamic method trations were glass ampoule	0.0000 nitial mole y of the sol y of the sol were measure because bath were measure s sealed in t s and placed	0.5992 0.7742 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant	343.7 Bolvent mix INFORMATION SOURCE AND (1) 99.2 Kingd zone (2) Gold Compa	1.0000 ture; x ₁ : mol purity of M %, British D lom, was recr refined. Label, 99.9+	Le fraction ATERIALS: rug Houses, United ystallized and then *, Aldrich Chemica; e, Wisconsin, USA,		
354.45 a x ₃ (s); i solubilit solubilit METHOD: APPARA Constant temp thermometer. Solubilities dynamic method trations were glass ampoule temperature to were rotated the bath temp by 0.1 K ever determined by ature at whice	0.0000 nitial mole y of the sol y of the sol y of the sol y of the sol y of the sol were measure becature bath were measure becauled in t sealed in t	0.5992 0.7742 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	343.7 Bolvent mix INFORMATION (1) 99.2 Kingd Zone (2) Gold Compa was u (3) Gold	1.0000 ture; x ₁ : mol purity of M %, British D lom, was recr refined. Label, 99.9+ iny, Milwauke ised as recei Label, 99.9+	Le fraction ATERIALS: rug Houses, United ystallized and then *, Aldrich Chemica; e, Wisconsin, USA,		
354.45 a _{x3} (s); i solubilit solubilit METHOD: APPARA Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule temperature t were rotated the bath temp by 0.1 K ever determined by ature at whic solute disapp ments were pre	0.0000 nitial mole y of the sol y of the sol y of the sol y of the sol y of the sol were measure becature bath were measure becauled in t sealed in t	0.5992 0.7742 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	343.7 Bolvent mix INFORMATION (1) 99.2 Kingd Zone (2) Gold Compa was u (3) Gold	1.0000 ture; x ₁ : mol ture; x ₁ : mol <b>D PURITY OF M</b> <b>%</b> , British D lom, was recr refined. Label, 99.9+ my, Milwauke used as recei Label, 99.9+ my, was used	Le fraction TATERIALS: rug Houses, United ystallized and then *, Aldrich Chemical e, Wisconsin, USA, ved. *, Aldrich Chemical		

onponents:			ORIGINAL MEASUREMENTS:											
<ol> <li>Acenaphthene; C₁₂H₁₀; [83-32-9]</li> <li>Benzene; C₆H₆; [71-43-2]</li> <li>Thiophene; C₄H₄S; [110-02-1]</li> </ol>			Choi, P.B.; Williams. C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E. J. Chem. Eng. Data <u>1987</u> , 32, 233-240.											
											Choi, P.B.; McLaughlin, E. Ind. Chem. Eng. Fundam. <u>1983</u> , 22, 46-51.			
							ARIABLES: Temperature, Solvent composition			PREPARED BY:				
W.E. Acre	38, Jr.													
EXPERIMENTAL V	ALUES ⁸													
T/K	x3 ^(s)	<i>*</i> 1	T/K	x3 ^(s)	<b>x</b> 1									
306.55	0.0000	0.2253	344.9	0.3000	0.6414									
312.95	0.0000	0.2724	355.6	0.3000	0.8148									
319.85	0.0000	0.3309												
328.05	0.0000	0.4158	307.3	1.0000	0.2548									
335.95	0.0000	0.5101	319.6	1.0000	0.3542									
345.75	0.0000	0.6498	328.4	1.0000	0.4407									
			335.7	1.0000	0.5224									
301.5	0.3000	0.2007	344.8	1.0000	0.6428									
309.2	0.3000	0.2514												
317.9	0.3000	0.3189												
325.7	0.3000	0.3959												
	0.3000 nitial mole : y of the sol	0.5039 fraction of binary ute.	solvent mix	ture; x ₁ : mol	e fraction									
a x. (s): i	nitial mole :	fraction of binary	solvent mix	ture; x ₁ : mol	e fraction									
a _{xz} (s); i	nitial mole :	fraction of binary ute.	solvent mix		e fraction									
a _{X3} (s); i Bolubilit	nitial mole : y of the sol	fraction of binary ute. AUXILIARY	INFORMATION											
a _{X3} (s); i Bolubilit ETHOD: APPARJ Constant temp thermometer.	nitial mole : cy of the sol	AUXILIARY E and a precision	INFORMATION SOURCE ANI (1) 99.2 Kingd	) PURITY OF M %, British D	ATERIALS: rug Houses, United ystallized and									
<pre>a x3(s); i solubilit solubilit ETHOD: APPARJ Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule</pre>	nitial mole : y of the sol MTUS/PROCEDUR perature bath were measure d. Mixtures a sealed in t se and placed	AUXILIARY and a precision d using a of known concen-	INFORMATION SOURCE AND (1) 99.2 Kingd then (2) Gold Compa	PURITY OF M %, British D lom, was recr zone refined Label, 99.9+	ATERIALS: rug Houses, United ystallized and %, Aldrich Chemica e, Wisconsin, USA,									
a _{x3} (s); i solubilit solubilit CerrHOD: APPARJ Constant temp thermometer. Solubilities dynamic method trations were glass ampoule temperature t were rotated the bath temp by 0.1 K even determined by ature at whice	nitial mole : y of the sol <b>TUS/PROCEDUR</b> berature bath were measure od. Mixtures a sealed in t as and placed to equilibrat at a speed o werature was y 1200 secon visually no th the last t weared. At le	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.2 Kingd then (2) Gold Compa was t (3) Gold	PURITY OF M %, British D lom, was recr zone refined Label, 99.9+ iny, Milwauke used as recei	ATERIALS: rug Houses, United ystallized and %, Aldrich Chemica: e, Wisconsin, USA, ved. %, Aldrich Chemica:									
a x3 ⁽⁵⁾ ; i solubilit GETHOD: APPARJ Constant temp thermometer. Solubilities dynamic metho trations were glass ampouls temperature t were rotated the bath temp by 0.1 K ever determined by ature at whice solute disapp ments were poe	nitial mole : y of the sol <b>TUS/PROCEDUR</b> berature bath were measure od. Mixtures a sealed in t as and placed to equilibrat at a speed o werature was y 1200 secon visually no th the last t weared. At le	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.2 Kingd then (2) Gold Compa was t (3) Gold Compa	PURITY OF M \$, British D lom, was recr zone refined Label, 99.9+ uny, Milwauke uny was used Label, 99.9+ uny was used	ATERIALS: rug Houses, United ystallized and %, Aldrich Chemica: e, Wisconsin, USA, ved. %, Aldrich Chemica:									
a x3 ⁽⁵⁾ ; i solubilit <b>ETHOD: APPARJ</b> Constant temp thermometer. Solubilities dynamic metho trations were glass ampouls temperature t were rotated the bath temp by 0.1 K ever determined by ature at whice solute disapp ments were poe	nitial mole : y of the sol <b>TUS/PROCEDUR</b> berature bath were measure od. Mixtures a sealed in t as and placed to equilibrat at a speed o werature was y 1200 secon visually no th the last t weared. At le	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.2 Kingd then (2) Gold Compa was u (3) Gold Compa	PURITY OF M \$, British D lom, was recr zone refined Label, 99.9+ uny, Milwauke uny was used Label, 99.9+ uny was used	ATERIALS: rug Houses, United ystallized and * %, Aldrich Chemica: e, Wisconsin, USA, ved. %, Aldrich Chemica: as received.									

COMPONENTS:	MPONENTS:		ORIGINAL N	ORIGINAL MEASUREMENTS:			
<ol> <li>Acenaphthene; C₁₂H₁₀; [83-32-9]</li> <li>Cyclohexane; C₆H₁₂; [110-82-7]</li> <li>Thiophene; C₄H₄S; [110-02-1]</li> </ol>		K.G.; Mcl	Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409.				
		Coon, J.1	E.; Troth, M.	; McLaughlin, E.			
		1		<u>.987</u> , 32, 233-240.			
			B.; McLaughli m. Eng. Funda	n, E. m. <u>1983</u> , 22, 46-51			
ARIABLES:	ARIABLES:		PREPARED I	BY:			
Temperature,	Solvent comp	osition	W.E. Acre	e, Jr.			
XPERIMENTAL V	ALUES ⁸						
T/K	x3 ^(s)	×1	T/K	×3 ^(s)	<b>x</b> 1		
303.35	0.0000	0.0853	321.5	0.3000	0.2820		
307.35	0.0000	0.1031	327.8	0.3000	0.3519		
312.05	0.0000	0.1274	333.5	0.3000	0.4311		
316.45	0.0000	0.1565	340.6	0.3000	0.5381		
320.95	0.0000	0.1931	348.0	0.3000	0.6654		
325.65	0.0000	0.2421	356.3	0.3000	0.8193		
329.95	0.0000	0.2984					
334.65	0.0000	0.3697	307.3	1.0000	0.2584		
339.85	0.0000	0.4645	319.6	1.0000	0.3542		
346.45	0.0000	0.5992	328.4	1.0000	0.4407		
354.45	0.0000	0.7742	335.7	1.0000	0.5224		
			344.8	1.0000	0.6428		
304.1	0.3000	0.1511					
310.2	0.3000	0.1885					
316.0	0.3000	0.2332					
a x ₃ ^(s) : in solubilit	nitial mole : y of the sol	fraction of binar ute.	y solvent mix	ture; x ₁ : mol	e fraction		
<u> </u>	<u> </u>	AUXILIAI	RY INFORMATION	τ			
ETHOD: APPARA	TUS/PROCEDUR	E	SOURCE ANI	PURITY OF M	ATERIALS:		
Constant temp thermometer.	erature bath	and a precision	(1) 99.2 Kingd zone	SOURCE AND PURITY OF MATERIALS: (1) 99.2 %, British Drug Houses, United Kingdom, was recrystallized and then			

dynamic method. Mixtures of known concentrations were sealed in thick-walled

trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper-ature at which the last trace of solid solute disappeared. At least two measure-ments were performed for each mixture composition.

composition.

(2) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was used as received.

(3) Gold Label, 99.9+ %, Aldrich Chemical Company was used as received.

ESTIMATED ERRORS:

T/K: precision  $\pm$  0.1.  $x_3^{(5)}$ :  $\pm$  0.0001.  $x_1$ :  $\pm$  0.0003.

6

Components :			ORIGINAL MEASUREMENTS:									
(1) Acenaphthene; $C_{12}H_{10}$ ; [83-32-9] (2) Thiophene; $C_{4}H_{4}S$ ; [110-02-1] (3) Pyridine; $C_{5}H_{5}N$ ; [110-86-1] <b>VARIABLES:</b> Temperature, Solvent composition			Choi, P.B.; Williams, C.P.; Buehring, McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E. J. Chem. Eng. Data <u>1987</u> , 32, 233-240. Choi, P.B.; McLaughlin, E. Ind. Chem. Eng. Fundam. <u>1983</u> , 22, 46-51. <b>PREPARED BY:</b>									
							W.E. Acre	ee, Jr.				
							EXPERIMENTAL	VALUES				
							T/K	x3 ^(s)	<i>x</i> 1	T/K	x3 ^(s)	<b>x</b> 1
			307.3	0.0000	0.2584	341.6	0.3000	0.5956				
319.6	0.0000	0.3542	350.4	0.3000	0.7258							
328.4	0.0000	0.4407										
335.7	0.0000	0.5224	306.7	1.0000	0.2102							
344.8	0.0000	0.6428	320.0	1.0000	0.3166							
			332.9	1.0000	0.4592							
311.5	0.3000	0.2825	337.5	1.0000	0.5191							
322.2	0.3000	0.3619	343.7	1.0000	0.6110							
331.2	0.3000	0.4572										
335.9 • _{x,} (s): j	0.3000	0.5195 fraction of binary	solvent mix	ture; x ₁ : mo)	le fraction							
335.9 • _{x,} (s): j	0.3000	0.5195 fraction of binary	solvent mix	ture; x ₁ : mo)	le fraction							
335.9 • _{x-} (s): j	0.3000	0.5195 fraction of binary ute.	solvent mix		le fraction							
335.9 * _{%3} (\$); j solubili	0.3000 Initial mole f ty of the sol	0.5195 fraction of binary ute. AUXILIARY	INFORMATION	1								
335.9 • _{X3} (s); j solubili <b>GETHOD: APPAR</b> Constant temp thermometer.	0.3000 Initial mole in ty of the sol	0.5195 fraction of binary ute. AUXILIARY E and a precision	SOURCE AND (1) 99.2 Kingd	PURITY OF M 4, British D								
335.9 • x3 ^(s) ; j solubili <b>GETHOD: APPAR</b> Constant temp thermometer. Solubilities dynamic method trations were glass ampould temperature d	0.3000 Initial mole is ty of the sol ATUS/PROCEDUR perature bath were measure od. Mixtures is as and placed to equilibrat	0.5195 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were	INFORMATION SOURCE AND (1) 99.2 Kingd zone (2) Gold Compa was u	PURITY OF M %, British D dom, was recr refined. Label, 99.9+ my, Milwauke used as recei	ATERIALS: Drug Houses, United ystallized and the *, Aldrich Chemic re, Wisconsin, USA, ved.							
335.9 • x ₃ (s); j solubili solubili <b>GETHOD: APPAR</b> Constant temp thermometer. Solubilities dynamic method trations werr glass ampould temperature of were rotated the bath temp by 0.1 K even determined by ature at which solute disapp	0.3000 Initial mole is ty of the sol atty of t	0.5195 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.2 Kingd zone (2) Gold Compa was u (3) Gold	PURITY OF M 4, British D lom, was recr refined. Label, 99.9+ my, Milwauke used as recei Label, 99.9+	ATERIALS: Frug Houses, United ystallized and the S, Aldrich Chemic He, Wisconsin, USA,							
335.9 * x ₃ (s); i solubili solubili <b>GETHOD: APPAR</b> Constant temp thermometer. Solubilities dynamic methetrations were glass ampoult temperature of were rotated the bath temp by 0.1 K ever determined by ature at whice solute disapp ments were poet	0.3000 initial mole i ty of the sol ty of the sol attraction of the sol attraction of the sol attraction of the sol tes and placed to equilibrat at a speed o perature was ry 1200 secon y visually not the last to beared. At les	0.5195 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.2 Kingd zone (2) Gold Compa was u (3) Gold Compa	PURITY OF M %, British D dom, was recr refined. Label, 99.9+ mny, Milwauke used as recei Label, 99.9+ mny was used	ATERIALS: Fug Houses, United ystallized and the *, Aldrich Chemic re, Wisconsin, USA, ved. *, Aldrich Chemic							
335.9 * x ₃ (s); i solubili solubili <b>GETHOD: APPAR</b> Constant temp thermometer. Solubilities dynamic methetrations were glass ampoult temperature of were rotated the bath temp by 0.1 K ever determined by ature at whice solute disapp ments were poet	0.3000 initial mole i ty of the sol ty of the sol attraction of the sol attraction of the sol attraction of the sol tes and placed to equilibrat at a speed o perature was ry 1200 secon y visually not the last to beared. At les	0.5195 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.2 Kingd zone (2) Gold Compa was u (3) Gold Compa	PURITY OF M %, British D dom, was recr refined. Label, 99.9+ mny, Milwauke used as recei Label, 99.9+ mny was used	ATERIALS: Prug Houses, United ystallized and the *, Aldrich Chemic e, Wisconsin, USA, ved. *, Aldrich Chemic as received.							

COMPONENTS:			ORIGINAL MEASUREMENTS:			
(1) Acenaphth	nene; C ₁₂ H ₁₀ ;	[83~32-9]	Coon, J.E E.	.; Auwaerter	, J.E.; McLaughlin,	
(2) 1,2,3,4-7 C ₁₀ H ₁₂ ; [1	<pre>(2) 1,2,3,4-Tetrahydronaphthalene; C₁₀H₁₂; [119-64-2]</pre>			se Equilibr.	<u>1989</u> , <b>44</b> , 305-345.	
<pre>(3) Decahydronaphthalene; C₁₀H₁₈; [91-17-8]</pre>						
VARIABLES:			PREPARED BY:			
Temperature,	Solvent comp	osition	W.E. Acre	e, Jr.		
EXPERIMENTAL V	VALUES ⁸		Į			
T/K	x3 ^(s)	<b>x</b> 1	T/K	x3 ^(s)	×1	
308.1	0.0000	0.2521	342.6	0.5000	0.5878	
312.6	0.0000	0.2849	349.4	<b>0.5000</b>	0.7053	
322.2	0.0000	0.3641				
331.9	0.0000	0.4695	300.7	1.0000	0.1239	
343.7	0.0000	0.6175	310.9	1.0000	0.1873	
351.9	0.0000	0.7461	318.7	1.0000	0.2496	
			327.8	1.0000	0.3302	
305.6	0.5000	0.2020	336.0	1.0000	0.4477	
319.3	0.5000	0.3055	348.3	1.0000	0.6597	
328.8	0.5000	0.4065				
336.9	0.5000	0.5046				
		AUXILIARY	INFORMATION		<u></u>	
METHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:	
METHOD: APPARATUS/PROCEDURE Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.		<ul> <li>(1) 99.2 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was passed over an activated alumina column and recrystallized from solution.</li> <li>(2) 99.6+ %, Aldrich Chemical Company.</li> <li>(3) 99+ %, Aldrich Chemical Company, having an isomer ratio of 60.6 % cis and 39.4 % trans.</li> <li>Components 2 and 3 were stored over molecular sieves to remove trace water.</li> </ul>				
			ESTIMATED T/K:  prec $x_3^{(5)}: \pm 0$ $x_1: \pm 0.00$	ision + 0.1.		

ANTHRACENE SOLUBILITIES IN BINARY SOLVENT MIXTURES

#### I. <u>Alkane + Alkane (including cycloalkanes)</u>

n-hexane + cyclohexane n-heptane + cyclohexane n-octane + cyclohexane 2,2,4-trimethylpentane + cyclohexane cyclohexane + cyclooctane

#### II. Alkane + Aromatic Hydrocarbon

n-hexane + benzene n-heptane + benzene n-octane + benzene cyclohexane + benzene methylcyclohexane + benzene 2,2,4-trimethylpentane + benzene cyclooctane + benzene n-hexane + methylbenzene n-heptane + methylbenzene n-octane + methylbenzene cyclohexane + methylbenzene methylcyclohexane + methylbenzene 2,2,4-trimethylpentane + methylbenzene cyclooctane + methylbenzene n-hexane + 1,4-dimethylbenzene n-heptane + 1,4-dimethylbenzene n-octane + 1,4-dimethylbenzene cyclohexane + 1,4-dimethylbenzene methylcyclohexane + 1,4-dimethylbenzene 2,2,4-trimethylpentane + 1,4-dimethylbenzene

#### III. <u>Alkane + Ester</u>

n-hexane + butyl ethanoate n-heptane + butyl ethanoate n-octane + butyl ethanoate cyclohexane + butyl ethanoate methylcyclohexane + butyl ethanoate 2,2,4-trimethylpentane + butyl ethanoate n-hexane + ethyl ethanoate n-heptane + ethyl ethanoate n-octane + ethyl ethanoate cyclohexane + ethyl ethanoate methylcyclohexane + ethyl ethanoate 2,2,4-trimethylpentane + ethyl ethanoate n-heptane + dimethyl hexanedioate cyclohexane + dimethyl hexanedioate methylcyclohexane + dimethyl hexanedioate n-hexane + diethyl hexanedioate n-heptane + diethyl hexanedioate n-octane + diethyl hexanedioate cyclohexane + diethyl hexanedioate methylcyclohexane + diethyl hexanedioate 2,2,4-trimethylpentane + diethyl hexanedioate n-hexane + dibutyl oxalate

n-heptane + dibutyl oxalate n-octane + dibutyl oxalate cyclohexane + dibutyl oxalate methylcyclohexane + dibutyl oxalate 2,2,4-trimethylpentane + dibutyl oxalate

#### IV. <u>Alkane + Ether</u>

n-hexane + 1,1-oxybisbutane n-heptane + 1,1-oxybisbutane n-octane + 1,1-oxybisbutane cyclohexane + 1,1-oxybisbutane methylcyclohexane + 1,1-oxybisbutane n-hexadecane + 1,1-oxybisbutane 2,2,4-trimethylpentane + 1,1-oxybisbutane cyclooctane + 1,1-oxybisbutane squalane + 1,1-oxybisbutane n-hexane + 1,4-dioxane n-heptane + 1,4-dioxane n-octane + 1,4-dioxane cyclohexane + 1,4-dioxane methylcyclohexane + 1,4-dioxane 2,2,4-trimethylpentane + 1,4-dioxane cyclooctane + 1,4-dioxane n-hexane + tetrahydropyran n-heptane + tetrahydropyran n-octane + tetrahydropyran cyclohexane + tetrahydropyran methylcyclohexane + tetrahydroopyran 2,2,4-trimethylpentane + tetrahydropyran

#### V. <u>Alkane + Chloroalkane</u>

n-hexane + tetrachloromethane n-heptane + tetrachloromethane n-octane + tetrachloromethane cyclohexane + tetrachloromethane methylcyclohexane + tetrachloromethane 2,2,4-trimethylpentane + tetracloromethane n-hexane + 1-chlorobutane n-heptane + 1-chlorobutane n-octane + 1-chlorobutane cyclohexane + 1-chlorobutane methylcyclohexane + 1-chlorobutane 2,2,4-trimethylpentane + 1-chlorobutane n-heptane + 1,4-dichlorobutane n-octane + 1,4-dichlorobutane cyclohexane + 1,4-dichlorobutane methylcyclohexane + 1,4-dichlorobutane

#### VII. <u>Miscellaneous</u>

n-hexane + nitrobenzene cyclohexane + aniline

# ANTHRACENE SOLUBILITIES (Continued)

2,2,4-trimethylpentane + 1-butanol 2,2,4-trimethylpentane + 1-octanol benzene + trichloromethane benzene + tetrachloromethane methylbenzene + tetrachloromethane 1,4-dimethylbenzene + tetrachloromethane methylbenzene + pyridine 2-propanone + pyridine 2-propanone + nitrobenzene benzene + methanol benzene + 1-propanol methylbenzene + methanol methylbenzene + phenol carbon disulfide + 2-propanone iodoethane + cyclohexene iodoethane + benzene iodobenzene + benzene methanol + carbon disulfide carbon disulfide + nitrobenzene nitrobenzene + aniline bromobenzene + chlorobenzene benzene + diethyl ether trichloromethane + diethyl ether

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.; Rytting, J.H.
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]	J. Pharm. Sci. <u>1983</u> , 72, 292-296.
(3) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25.0 °C	
x ₂ ^(s) x ₂	×1
0.0000 0.0000	0.001574
0.1735 0.1732	0.001572
0.3565 0.3559	0.001544
0.4498 0.4491	0.001515
0.5571 0.5563	0.001478
0.7646 0.7635	0.001398
1.0000 0.9987	0.001290
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	(2) 99 %, Aldrich Chemical Company.
in amber glass bottles and allowed to equilibrate for several days at constant	(3) 99.5+ %, Phillips Petroleum, Bartles- ville, Oklahoma, USA.
temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [12	0-12-71	Acree, W.E., Jr.; Rytting, J.H.
<pre>(1) n=Heptane; C₇H₁₆; [142=</pre>		J. Pharm. Sci. <u>1983</u> , 72, 292-296.
<ul> <li>(1) Cyclohexane; C₆H₁₂; [11</li> </ul>		
VARIABLES:		PREPARED BY:
T/K = 298, Solvent composi	tion	W.E. Acres, Jr.
EXPERIMENTAL VALUES ^a t = 25.0 °C		l
x2 ^(s) x2		×1
0.0000 0.00	00	0.001574
0.1542 0.15	40	0.001608
0.3283 0.32	78	0.001642
0.4230 0.423	23	0.001640
0.5250 0.52	41	0.001621
0.7236 0.77	24	0.001605
0.8813 0.87	99	0.001585
1.0000 0.99	84	0.001571
	AUXILIARY	INFORMATION
(ETHOD: APPARATUS/PROCEDURE	AUXILIARY	INFORMATION SOURCE AND PURITY OF MATERIALS:
<b>METHOD: APPARATUS/PROCEDURE</b> Constant temperature bath, thermometer, and an ultravi spectrophotometer.	calorimetric	F
Constant temperature bath, thermometer, and an ultravispectrophotometer. Binary solvent mixtures were	calorimetric iolet/visible re prepared by	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Phillips Petroleum, Bartles-</li> </ul>
Constant temperature bath, thermometer, and an ultravi- spectrophotometer. Binary solvent mixtures wer weight. Excess solute and a in amber glass bottles and	calorimetric iolet/visible re prepared by solvent placed allowed to	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Phillips Petroleum, Bartles- ville, Oklahoma, USA.</li> </ul>
thermometer, and an ultravise spectrophotometer. Binary solvent mixtures were weight. Excess solute and so in amber glass bottles and equilibrate for several day temperature. Attainment of	calorimetric iolet/visible re prepared by solvent placed allowed to ys at constant f equilibrium	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Phillips Petroleum, Bartles- ville, Oklahoma, USA.</li> <li>(3) 99.5+ %, Phillips Petroleum.</li> </ul>
Constant temperature bath, thermometer, and an ultravis spectrophotometer. Binary solvent mixtures were weight. Excess solute and a in amber glass bottles and equilibrate for several day	calorimetric iolet/visible re prepared by solvent placed allowed to ys at constant f equilibrium petitive ching equili- . Aliquots of erred through volumetric i with methanol.	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Phillips Petroleum, Bartles- ville, Oklahoma, USA.</li> <li>(3) 99.5+ %, Phillips Petroleum. Components 2 and 3 were stored over</li> </ul>
Constant temperature bath, thermometer, and an ultravi- spectrophotometer. Binary solvent mixtures wer- weight. Excess solute and s in amber glass bottles and equilibrate for several day temperature. Attainment of was verified by several rep measurements and by approad brium from supersaturation. saturated solutions transfe a coarse filter into tared flasks, weighed and diluted	calorimetric iolet/visible re prepared by solvent placed allowed to ys at constant f equilibrium petitive ching equili- . Aliquots of erred through volumetric i with methanol.	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Phillips Petroleum, Bartles- ville, Oklahoma, USA.</li> <li>(3) 99.5+ %, Phillips Petroleum. Components 2 and 3 were stored over molecular sieves and distilled shortly</li> </ul>
Constant temperature bath, thermometer, and an ultravi- spectrophotometer. Binary solvent mixtures wer- weight. Excess solute and s in amber glass bottles and equilibrate for several day temperature. Attainment of was verified by several rep measurements and by approad brium from supersaturation. saturated solutions transfe a coarse filter into tared flasks, weighed and diluted	calorimetric iolet/visible re prepared by solvent placed allowed to ys at constant f equilibrium petitive ching equili- . Aliquots of erred through volumetric i with methanol.	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Phillips Petroleum, Bartles- ville, Oklahoma, USA.</li> <li>(3) 99.5+ %, Phillips Petroleum. Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>

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components:	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.; Rytting, J.H.
(2) n-Octane; C ₈ H ₁₈ ; [111-65-9]	J. Pharm. Sci. <u>1983</u> , 72, 292-296.
(3) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25.0 °C	
$x_2^{(s)}$ $x_2$	<i>x</i> 1
0.0000 0.0000	0.001574
0.1463 0.1461	0.001648
0.3114 0.3109	0.001717
0.3954 0.3948	0.001749
0.5519 0.5509	0.001774
0.7930 0.7915	0.001832
1.0000 0.9982	0.001850
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	(2) Gold Label, 99+ %, Aldrich Chemical Chemical Company.
in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium	(3) 99.5+ %, Phillips Petroleum Bartles- ville, Oklahoma, USA.
was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

COMPONENTS :	ORIGINAL MEASUREMENTS:
	Acree, W.E., Jr.; Rytting, J.H.
<ol> <li>Anthracene; C₁₄H₁₀; [120-12-7]</li> <li>(2) 2,2,4-Trimethylpentane; C₈H₁₈;</li> </ol>	J. Pharm. Sci., <u>1983</u> , 72, 292-296.
[540-84-1]	
(3) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 25.0  ^{\circ}C$	
$x_2^{(s)}$ $x_2$	×1
0.0000 0.0000	0.001574
0.1385 0.1383	0.001488
0.2988 0.2984	0.001407
0.3895 0.3890	0.001362
0.5391 0.5384	0.001283
0.7725 0.7716	0.001182
1.0000 0.9989	0.001087
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	<ul> <li>Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> </ul>
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant	<ul> <li>(2) 99+ %, Phillips Petroleum, Bartles- ville, Oklahoma, USA.</li> <li>(3) 99.5+ %, Phillips Petroleum.</li> </ul>
temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortl before use.
	ESTIMATED ERRORS:
	$T/K: \pm 0.05. x_2^{(s)}: \pm 0.0001. x_1: \pm 1 % (relative error).$

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.; Rytting, J.H.
(2) Cyclooctane; C ₈ H ₁₆ ; [292-64-8]	J. Pharm. Sci. <u>1983</u> , 72, 292-296.
(3) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	
VARIABLES:	PREPARED BY:
$T/K \approx 298$ , Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ⁸ t = 25.0 °C	
x ₂ ⁽⁵⁾ x ₂	×1
0.0000 0.0000	0.001574
0.1746 0.1743	0.001704
0.3412 0.3406	0.001824
0.4475 0.4467	0.001882
0.5533 0.5522	0.001989
0.7580 0.7564	0.002096
1.0000 0.9977	0.002258
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	(2) Gold Label, 99+ %, Aldrich Chemical Company.
in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive	(3) 99.5+ %, Phillips Petroleum Bartles- ville, Oklahoma, USA.
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

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COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.; Rytting, J.H.
(2) n-Hexane; C ₆	H ₁₄ ; [110-54-3]	J. Pharm. Sci. <u>1983</u> , 72, 292-296.
(3) Benzene; C ₆ H	₅ ; [71-43-2]	
VARIABLES:		PREPARED BY:
T/K = 298, Solve	nt composition	W.E. Acree, Jr.
EXPERIMENTAL VALU	ES ⁸	Į
×2 ^(s)	<b>x</b> 2	×1
0.0000	0.0000	0.007418
0.1442	0.1433	0.006274
0.3093	0.3078	0.004908
0.3842	0.3825	0.004317
0.4963	0.4945	0.003549
0.5536	0.5518	0.003180
0.6624	0.6607	0.002602
0.7365	0.7348	0.002242
1.0000	0.9987	0.001290
a x2 ^(s) : initi fraction solution the ternary i	al mole fraction of binary ubility of the solute; x ₂ : m solution.	solvent mixture; x _i : mole mole fraction of component 2 in
fraction solu	ubility of the solute; x ₂ : n	solvent mixture; x _i : mole mole fraction of component 2 in
fraction solu	ubility of the solute; x ₂ : r solution.	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION
fraction solu	AUXILIARY	nole fraction of component 2 in
fraction solution the ternary of (ETHOD: APPARATUS, Constant temperat	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	INFORMATION
GETHOD: APPARATUS, Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for a temperature. Att was verified by a measurements and brium from supera saturated solutio a coarse filter if flasks, weighed a	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible for an ultravi	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene; (	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.; Rytting, J.H.
(2) n-Heptane; C ₇	H ₁₆ ; [142-82-5]	J. Pharm. Sci. <u>1983</u> , 72, 292-296.
(3) Benzene; C ₆ H ₆	; [71-43-2]	
VARIABLES:	·····	PREPARED BY:
T/K = 298, Solvent composition		W.E. Acree, Jr.
EXPERIMENTAL VALU	ES ^a	·····
×3 ^(s)	x3	<b>x</b> 1
0.0000	0.0000	0.001571
0.2323	0.2318	0.002283
0.3518	0.3508	0.002783
0.4637	0.4621	0.003375
0.5546	0.5524	0.003922
0.7103	0.7067	0.005022
0.8280	0.8230	0.005987
1.0000	0.9926	0.007418
* x3 ⁽⁵⁾ : initi fraction solution the ternary s	al mole fraction of binary ability of the solute; x ₃ : r solution.	solvent mixture; x ₁ : mole nole fraction of component 3 in
* x ₃ ^(s) : initi fraction solution the ternary is	al mole fraction of binary ability of the solute; x ₃ : n solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in
* x ₃ ^(s) ; initi fraction solution the ternary solution	eolution.	solvent mixture; x ₁ : mole nole fraction of component 3 in INFORMATION
the ternary f	AUXILIARY	
The ternary i METHOD: APPARATUS/ Constant temperat	AUXILIARY /PROCEDURE :ure bath, calorimetric an ultraviolet/visible	INFORMATION
METHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f. Lixtures were prepared by plute and solvent placed	INFORMATION SOURCE AND FURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
METHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for a temperature. Att was verified by s	AUXILIARY /PROCEDURE cure bath, calorimetric an ultraviolet/visible c. Lixtures were prepared by plute and solvent placed ottles and allowed to several days at constant cainment of equilibrium several repetitive	<pre>INFORMATION SOURCE AND FURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Phillips Petroleum Bartles- ville, Oklahoma, USA. (3) Spectroanalyzed, 99.9+ %, Fisher Scientific Pittsburgh, Pennsylvania, USA.</pre>
METHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks, weighed s	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible tures were prepared by plute and solvent placed by thes and allowed to several days at constant cainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric und diluted with methanol. ttermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Phillips Petroleum Bartles- ville, Oklahoma, USA. (3) Spectroanalyzed, 99.9+ %, Fisher Scientific Pittsburgh, Pennsylvania,</pre>
METHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solution a coarse filter i flasks, weighed a Concentrations de	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible tures were prepared by plute and solvent placed by thes and allowed to several days at constant cainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric und diluted with methanol. ttermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Phillips Petroleum Bartles- ville, Oklahoma, USA. (3) Spectroanalyzed, 99.9+ %, Fisher Scientific Pittsburgh, Pennsylvania, USA. Components 2 and 3 were stored over molecular seives and distilled shortl</pre>

Components:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.
(2) n-Octane; C ₈	H ₁₈ ; [111-65-9]	Phys. Chem. Liq. <u>1989</u> , 20, 31-38.
(3) Benzene; C ₆ H	₅ ; [71-43-2]	
VARIABLES:		PREPARED BY:
<i>T</i> /K = 298, Solve	nt composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALU t = 25.0 °C	ES ⁸	
x2 ^(s)	*2	×1
0.0000	0.0000	0.00742
0.1227	0.1219	0.00616
0.2606	0.2593	0.00508
0.3524	0.3508	0.00444
0.4575	0.4558	0.00377
0.6838	0.6819	0.00280
0.8156	0.8137	0.00239
1.0000	0.9982	0.00184
	AUXILIARY	
METHOD: APPARATUS	PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	ture bath, calorimetric an ultraviolet/visible 5.	(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
weight. Excess so in amber glass bo equilibrate for s temperature. Att	ixtures were prepared by plute and solvent placed ottles and allowed to several days at constant cainment of equilibrium several repetitive	<ul> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> </ul>
measurements and brium from supers saturated solution a coarse filter i flasks, weighed a	by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
		ESTIMATED ERRORS:
		$T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

20 ORIGINAL MEASUREMENTS: COMPONENTS: Smutek, M.; Fris, M.; Fohl, J. (1) Anthracene; C14H10; [120-12-7] Collection Czech. Chem. Commun. 1967, (2) Cyclohexane; C₄H₁₂; [110-82-7] 32, 931-943. (3) Benzene; C₄H₆; [71-43-2] PREPARED BY: VARIABLES: W.E. Acree, Jr., P.R. Naidu and A.I. T/K = 293 and 298, Solvent Composition Zvaigzne EXPERIMENTAL VALUES[®] t = 20.0 °Ct = 25.0 °Cx,^{(s),b} x,^{(s),b} Xz x₁ x₃ x₁ 0.000 0.000 0.00120 0.000 0.000 0.00161 0.341 0.340 0.00267 0.350 . 0.349 0.00319 0.519 0.517 0.00336 0.518 0.516 0.00420 0.683 0.680 0.00435 0.683 0.679 0.00535 1.000 0.994 0.00616 0.763 0.759 0.00586 1.000 0.993 0.00711 *  $x_3^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_3$ : mole fraction of component 3 in the ternary solution. ^b computed by compiler. AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE SOURCE AND PURITY OF MATERIALS: (1) 95 % initial purity, Urxovy Zavody, Czech., was recrystallized several times from pyridine and cyclohexane to give a final purity of 98.3 %. Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at (2) 99 %, Commercial sample, source and purification method was not specified. constant temperature. Aliquots of saturated solutions were transferred into tared containers and weighed. Solubili-ties were calculated from the weight of the solid residue which remained after (3) 99 %, Commerical sample, source and purification method was not specified. the solvent had evaporated. ESTIMATED ERRORS: T/K: precision  $\pm$  0.05.  $x_3: \pm 0.001$  (compiler).  $x_1: \pm 3$  % (relative error; compiler).

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.; Rytting, J.H.
(2) Cyclohexane;	C ₆ H ₁₂ ; [110-82-7]	J. Pharm. Sci. <u>1983</u> , 72, 292-296.
(3) Benzene; C ₆ H	₅ ; [71-43-2]	
VARIABLES:		PREPARED BY:
T/K = 298, Solve	nt composition	W.E. Acree, Jr.
EXPERIMENTAL VALU	ES ^a	4
x3 ^(s)	*3	×1
0.0000	0.0000	0.001574
0.1731	0.1727	0.002258
0.2320	0.2314	0.002592
0.4380	0.4363	0.003802
0.5427	0.5403	0.004506
0.6357	0.6324	0.005154
0.8317	0.8263	0.006482
1.0000	0.9926	0.007418
* x ₃ ^(s) : initi fraction solution the ternary s	al mole fraction of binary ability of the solute; x ₃ : n solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in
<pre>* x3^(s): initi fraction soluthe ternary s</pre>	al mole fraction of binary ability of the solute; x ₃ : n solution.	solvent mixture; x1: mole mole fraction of component 3 in
<pre>* x3^(s); initi fraction soluthe ternary i </pre>	Bolution.	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION
ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer	AUXILIARY /PROCEDURE cure bath, calorimetric an ultraviolet/visible	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks, weighed a	AUXILIARY PROCEDURE Sure bath, calorimetric an ultraviolet/visible Sure bath, calorimetric an ultraviolet/visible Sure bath, calorimetric an ultraviolet/visible Sure and solvent placed by the sand allowed to several days at constant ainment of equilibrium several repetitive by approaching equili- aituration. Aliquots of ons transferred through nto tared volumetric and diluted with methanol. termined spectrophoto-	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	$C_{14}H_{10}; [120-12-7]$	Tucker, S.A.; Acree, W.E., Jr.
(2) Methylcycloh [108-87-2]	exane; C ₇ H ₁₄ ;	Phys. Chem. Liq. <u>1989</u> , 20, 31-38.
(3) Benzene; C ₆ H	₆ ; [71-43-2]	
VARIABLES:		PREPARED BY:
T/K = 298, Solvent composition		W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALU t = 25.0 °C	ES ^a	
x2 ^(s)	x,	×1
0.0000	0.0000	0.00742
0.1519	0.1510	0.00625
0.3209	0.3193	0.00504
0.4098	0.4080	0.00440
0.5257	0.5238	0.00370
0.7353	0.7333	0.00267
0.8716	0.8698	0.00208
1.0000	0.9984	0.00165
	AUXILIARY	INFORMATION
Constant temperat	/PROCEDURE ture bath, calorimetric an ultraviolet/visible	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
Constant temperative thermometer, and spectrophotometer Binary solvent mu- weight. Excess so in amber glass bo	/PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.</li> </ul>
Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for temperature. Att was verified by a	/PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> </ul>
Constant temperative thermometer, and spectrophotometer Binary solvent mu- weight. Excess so equilibrate for a temperature. At was verified by a measurements and brium from super- saturated solution a coarse filter a flasks, weighed a Concentrations de	/PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol.	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical</li> </ul>
thermometer, and spectrophotometer Binary solvent m weight. Excess so in amber glass be equilibrate for a temperature. At was verified by a measurements and brium from super saturated solution a coarse filter a flasks, weighed a	/PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol.	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemica Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled short</li> </ul>

COMPON	NENTS:		ORIGINAL MEASUREMENTS:
(1) A	Anthracene; C	14 ^H 10; [120-12-7]	Acree, W.E., Jr.; Rytting, J.H.
(2) 2 [	2,2,4-Trimeth [540-84-1]	ylpentane; C ₈ H ₁₈ ;	J. Pharm. Sci. <u>1983</u> , 72, 292-296.
(3) B	Benzene; C ₆ H ₆ ;	[71-43-2]	
VARIAB	BLES:		PREPARED BY:
T/K =	= 298, Solven	t composition	W.E. Acree, Jr.
	IMENTAL VALUE	S ^a	al
x	(s)	<i>x</i> 3	x ₁
	0.0000	0.0000	0.001087
o	0.1601	0.1599	0.001467
0	.3127	0.3121	0.001983
0	.5398	0.5381	0.003144
o	.6354	0.6330	0.003830
0	.7209	0.7176	0.004571
0	.8591	0.8541	0.005840
1	.0000	0.9984	0.007418
f	x ₃ ^(\$) : initia raction solub he ternary so	oility of the solute; x ₃ : 1	solvent mixture; x ₁ : mole mole fraction of component 3 in
£	raction solub	oility of the solute; x ₃ : 1	Bolvent mixture; x ₁ : mole mole fraction of component 3 in
£	raction solub	ollity of the solute; x ₃ : nolution.	Bolvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION
	raction solub	AUXILIARY	mole fraction of component 3 in
ETHOD: Consta thermo	: APPARATUS/F ant temperatu	AUXILIARY PROCEDURE are bath, calorimetric in ultraviolet/visible	INFORMATION
ETHOD: Consta thermo spectr Binary weight	: APPARATUS/F ant temperatu ometer, and a rophotometer. y solvent mix t. Excess sol	AUXILIARY PROCEDURE In ultraviolet/visible tures were prepared by ute and solvent placed	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
ETHOD: Constathermon spectr Binary weight in amb	: APPARATUS/F ant temperatu ometer, and a rophotometer. y solvent mix t. Excess sol ber glass bot ibrate for se	AUXILIARY PROCEDURE are bath, calorimetric in ultraviolet/visible stures were prepared by ute and solvent placed tiles and allowed to veral days at constant	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Phillips Petroleum, Bartles- ville, Oklahoma, USA. (3) Spectroanalyzed, 99.9+ %, Fisher
ETHOD: Consta thermo: spect: Binary weight in amb equili temper was ve	: APPARATUS/F ant temperatu ometer, and a rophotometer. y solvent mix t. Excess sol ber glass bot ibrate for se rature. Atta erified by se	AUXILIARY PROCEDURE The bath, calorimetric in ultraviolet/visible tures were prepared by ute and solvent placed tles and allowed to veral days at constant inment of equilibrium veral repetitive	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Phillips Petroleum, Bartles- ville, Oklahoma, USA. (3) Spectroanalyzed, 99.9+ %, Fisher Scientific, Pittsburgh, Pennsylvania, USA.</pre>
ETHOD: Consta thermo spectr Binary weight in amb equili temper brium satura a coar flasks Concen	: APPARATUS/F ant temperatu ometer, and a rophotometer. y solvent mix t. Excess sol ber glass bot ibrate for se rature. Atta erified by se rements and b from supersa ated solution rse filter in s, weighed an	AUXILIARY PROCEDURE are bath, calorimetric in ultraviolet/visible attures were prepared by ute and solvent placed these and allowed to veral days at constant inment of equilibrium veral repetitive y approaching equili- turation. Aliquots of s transferred through to tared volumetric d diluted with methanol. ermined spectrophoto-	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Phillips Petroleum, Bartles- ville, Oklahoma, USA. (3) Spectroanalyzed, 99.9+ %, Fisher Scientific, Pittsburgh, Pennsylvania,
ETHOD: Consta thermo spectr Binary weight in amb equili temper brium satura a coar flasks Concen	: APPARATUS/F ant temperatu ometer, and a rophotometer. y solvent mix t. Excess sol ber glass bot ibrate for se rature. Atta erified by se rature. Atta erified by se ratures and b from supersa ated solution rse filter in s, weighed an ntrations det	AUXILIARY PROCEDURE are bath, calorimetric in ultraviolet/visible attures were prepared by ute and solvent placed these and allowed to veral days at constant inment of equilibrium veral repetitive y approaching equili- turation. Aliquots of s transferred through to tared volumetric d diluted with methanol. ermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Phillips Petroleum, Bartles- ville, Oklahoma, USA. (3) Spectroanalyzed, 99.9+ %, Fisher Scientific, Pittsburgh, Pennsylvania, USA. Components 2 and 3 were stored over molecula sieves and distilled shortly before use.</pre>
ETHOD: Consta thermo spectr Binary weight in amb equili temper brium satura a coar flasks Concen	: APPARATUS/F ant temperatu ometer, and a rophotometer. y solvent mix t. Excess sol ber glass bot ibrate for se rature. Atta erified by se rature. Atta erified by se ratures and b from supersa ated solution rse filter in s, weighed an ntrations det	AUXILIARY PROCEDURE are bath, calorimetric in ultraviolet/visible attures were prepared by ute and solvent placed these and allowed to veral days at constant inment of equilibrium veral repetitive y approaching equili- turation. Aliquots of s transferred through to tared volumetric d diluted with methanol. ermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Phillips Petroleum, Bartles- ville, Oklahoma, USA. (3) Spectroanalyzed, 99.9+ %, Fisher Scientific, Pittsburgh, Pennsylvania, USA. Components 2 and 3 were stored over molecula sieves and distilled shortly</pre>

(1) Anthracene; C ₁₄ H ₁		ORIGINAL MEASUREMENTS:
	₀ ; [120-12-7]	Acree, W.E., Jr.; Rytting, J.H.
(2) Cyclooctane; C ₈ H	16; [292-64-8]	J. Pharm. Sci. <u>1983</u> , 72, 292-296.
(3) Benzene; C ₆ H ₆ ; [7	1-43-2]	
VARIABLES:		PREPARED BY:
T/K = 298, Solvent c	omposition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25.0 °C		
*2 ^(s)	x ₂	×1
0.0000	0.0000	0.007418
0.1416	0.1406	0.006814
0.3045	0.3028	0.005708
0.3984	0.3963	0.005282
0.4935	0.4912	0.004745
0.6685	0.6660	0.003740
0.8016	0.7986	0.003069
1.0000	0.9978	0.002258
	AUXILIARY	INFORMATION
ETHOD: APPARATUS/PROG		INFORMATION SOURCE AND PURITY OF MATERIALS:
Constant temperature thermometer, and an u	CEDURE bath, calorimetric	
Constant temperature thermometer, and an u spectrophotometer. Binary solvent mixtur weight. Excess solute	CEDURE bath, calorimetric ultraviolet/visible res were prepared by a and solvent placed	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
Constant temperature thermometer, and an us spectrophotometer. Binary solvent mixtur weight. Excess solute in amber glass bottle equilibrate for sever temperature. Attainn was verified by sever	CEDURE bath, calorimetric ultraviolet/visible res were prepared by a and solvent placed as and allowed to ral days at constant ment of equilibrium ral repetitive	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical</li> </ul>
Constant temperature thermometer, and an us spectrophotometer. Binary solvent mixtur weight. Excess solute in amber glass bottle equilibrate for sever temperature. Attainn was verified by sever measurements and by a brium from supersatur saturated solutions t a coarse filter into flasks, weighed and d Concentrations determ	CEDURE bath, calorimetric altraviolet/visible res were prepared by and solvent placed as and allowed to cal days at constant ment of equilibrium cal repetitive approaching equili- cation. Aliquots of cransferred through tared volumetric illuted with methanol. ined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) Spectroanalyzed, 99.9+ %, Fisher Scientific, Pittsburgh, Pennsylvania,</li> </ul>
thermometer, and an uspectrophotometer. Binary solvent mixture weight. Excess solute in amber glass bottle equilibrate for sever temperature. Attains was verified by sever measurements and by a brium from supersatur saturated solutions t a coarse filter into	CEDURE bath, calorimetric altraviolet/visible res were prepared by and solvent placed as and allowed to cal days at constant ment of equilibrium cal repetitive approaching equili- cation. Aliquots of cransferred through tared volumetric illuted with methanol. ined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) Spectroanalyzed, 99.9+ %, Fisher Scientific, Pittsburgh, Pennsylvania, USA.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly</li> </ul>

(1) 3.000.000.000		ORIGINAL MEASUREMENTS:	
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Tucker, S.A.; Murral, D.J.; Oswalt, B.M.;	
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]		Halmi, J.L.; Acree, W.E., Jr. Phys. Chem. Liq. <u>1988</u> , 18, 279-286.	
(3) Methylbenzene;	C ₇ H ₈ ; [108-88-3]	Phys. Chem. L1g. <u>1986</u> , 18, 279–286.	
VARIABLES:		PREPARED BY:	
T/K = 298, Solvent	composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker	
EXPERIMENTAL VALUES t = 25.0 °C	a	······································	
x2 ^(s)	×2	x ₁	
0.0000	0.0000	0.00736	
0.1631	0.1621	0.00607	
0.3540	0.3524	0.00454	
0.4514	0.4496	0.00388	
0.5453	0.5435	0.00327	
0.7369	0.7352	0.00226	
1.0000	0.9987	0.00127	
	AUXILIARY	INFORMATION	
ETHOD: APPARATUS/PR		INFORMATION SOURCE AND PURITY OF MATERIALS:	
Constant temperature thermometer, and an			
Constant temperatur thermometer, and an spectrophotometer. Binary solvent mixtu	OCEDURE e bath, calorimetric ultraviolet/visible ures were prepared by	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,	
Constant temperatur thermometer, and an spectrophotometer. Binary solvent mixtu weight. Excess solu in amber glass bott	OCEDURE e bath, calorimetric ultraviolet/visible ures were prepared by te and solvent placed les and allowed to	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical</li> </ul>	
Constant temperatur thermometer, and an spectrophotometer. Binary solvent mixtur weight. Excess solut in amber glass bott equilibrate for seve temperature. Attain	OCEDURE e bath, calorimetric ultraviolet/visible ures were prepared by te and solvent placed les and allowed to eral days at constant mment of equilibrium	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over</li> </ul>	
Constant temperatur thermometer, and an spectrophotometer. Binary solvent mixtur weight. Excess solut in amber glass bott equilibrate for seve temperature. Attain was verified by seve measurements and by brium from supersatur saturated solutions a coarse filter into flasks, weighed and Concentrations deter	OCEDURE e bath, calorimetric ultraviolet/visible ures were prepared by te and solvent placed les and allowed to pral days at constant nament of equilibrium pral repetitive approaching equili- nration. Aliquots of transferred through o tared volumetric diluted with methanol. mined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical</li> </ul>	
Constant temperatur thermometer, and an spectrophotometer. Binary solvent mixtur weight. Excess solut in amber glass bott equilibrate for seve temperature. Attain was verified by seve measurements and by brium from supersatur saturated solutions a coarse filter into flasks, weighed and Concentrations deter	OCEDURE e bath, calorimetric ultraviolet/visible ures were prepared by te and solvent placed les and allowed to pral days at constant nament of equilibrium pral repetitive approaching equili- nration. Aliquots of transferred through o tared volumetric diluted with methanol. mined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>	
thermometer, and an spectrophotometer. Binary solvent mixtu weight. Excess solut in amber glass bott equilibrate for seve temperature. Attain was verified by seve measurements and by brium from supersatu saturated solutions a coarse filter into	OCEDURE e bath, calorimetric ultraviolet/visible ures were prepared by te and solvent placed les and allowed to pral days at constant nament of equilibrium pral repetitive approaching equili- nration. Aliquots of transferred through o tared volumetric diluted with methanol. mined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly</li> </ul>	

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene; $C_{12}H_{10}$ ; [120-12-7]		Tucker, S.A.; Murral, D.J.; Oswalt, B.M.;
(2) n-Heptane; $C_7H_{16}$ ; [142-82-5]		Halmi, J.L.; Acree. W.E., Jr.
(3) Methylbenzene; C ₇ H ₈ ; [102-82-3]		Phys. Chem. Liq. <u>1988</u> , 18, 279-286.
(5) moong isomson		
VARIABLES:		PREPARED BY:
T/K = 298, Solvent composition		W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALU t = 25.0 °C	ES ^a	
x2 ^(\$)	<b>x</b> 2	<i>x</i> 1
0.0000	0.0000	0.00736
0.1606	0.1596	0.00606
0.1692	0.1682	0.00598
0.3246	0.3230	0.00480
0.3247	0.3232	0.00477
0.4137	0.4120	0.00420
0.4254	0.4236	0.00412
0.5316	0.5298	0.00344
0.5396	0.5378	0.00336
0.7341	0.7323	0.00245
0.7413	0.7395	0.00242
1.0000	0.9984	0.00157
	AUXILIARY	INFORMATION
METHOD: APPARATUS	/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed		<ol> <li>Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>HPLC Grade, 99.7+ %, Aldrich Chemical Company.</li> </ol>
in amber glass be equilibrate for a temperature. At was verified by a	ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili-	<ul> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly</li> </ul>
a coarse filter i flasks, weighed a	ons transferred through into tared volumetric and diluted with methanol. stermined spectrophoto-	before use.

		ORIGINAL MEASUREMENTS:			
(1) Anthracene; $C_{14}H_{10}$ ; [120-12-7] (2) n-Octane; $C_{8}H_{18}$ ; [111-65-9] (3) Methylbenzene; $C_{7}H_{8}$ ; [108-88-3] VARIABLES: T/K = 298, Solvent composition		Tucker, S.A.; Murral, D.J.; Oswalt, B.M. Halmi, J.L.; Acree, W.E., Jr. Phys. Chem. Liq. <u>1988</u> , 18, 279-286. PREPARED BY: W.E. Acree, Jr., P.R. Naidu and S.A. Tucker			
			EXPERIMENTAL VAL t = 25.0 °C	UES ⁸	
			x2 ^(s)	*2	×1
			0.0000	0.0000	0.00736
			0.1397	0.1388	0.00623
0.1415	0.1406	0.00619			
0.2977	0.2962	0.00502			
0.3014	0.2999	0.00498			
0.3936	0.3919	0.00434			
0.4024	0.4007	0.00431			
0.4956	0.4937	0.00375			
0.4988	0.4969	0.00374			
0.7147	0.7128	0.00271			
0.7211	0.7192	0.00268			
1.0000 ^a x2 ^(s) : init fraction sol	0.9982 ial mole fraction of binary lubility of the solute: x: n	0.00184 solvent mixture; x ₁ : mole nole fraction of component 2 in			
	ial mole fraction of binary Lubility of the solute; $x_2$ : m	0.00184 solvent mixture; x _i : mole mole fraction of component 2 in			
^a x ₂ ^(s) : init fraction sol	ial mole fraction of binary lubility of the solute; $x_2$ : m solution.				
^a x ₂ ^(s) : init fraction sol	ial mole fraction of binary lubility of the solute; x ₂ : m solution. AUXILIARY	solvent mixture; x _i : mole mole fraction of component 2 in			
a x2 ^(s) : init fraction sol the ternary <b>ETHOD: APPARATUS</b> Constant tempera thermometer, and	ial mole fraction of binary lubility of the solute; x ₂ : m solution. AUXILIARY S/PROCEDURE ture bath, calorimetric an ultraviolet/visible	Bolvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS:			
a x2 ^(s) : init fraction sol the ternary ETHOD: APPARATUS Constant tempera chermometer, and spectrophotomete Binary solvent m reight. Excess s	ial mole fraction of binary lubility of the solute; x ₂ : m solution. AUXILIARY S/PROCEDURE ture bath, calorimetric an ultraviolet/visible or. hixtures were prepared by olute and solvent placed	solvent mixture; x ₁ : mole nole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,			
a x2 ^(s) : init fraction sol the ternary ETHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Sinary solvent m weight. Excess s in amber glass b equilibrate for comperature. At	AUXILIARY AUXILIARY S/PROCEDURE ture bath, calorimetric an ultraviolet/visible r. dixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, Aldrich Chemical Company.</pre>			
a x2 ^(s) ; init fraction sol the ternary the ternary ETHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At vas verified by measurements and orium from super saturated soluti a coarse filter llasks, weighed Joncentrations d	AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AU	<pre>solvent mixture; x_i: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemical</pre>			
a x ₂ (s): init fraction sol the ternary ETHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess so in amber glass b equilibrate for comperature. At was verified by measurements and prium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AU	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortl</pre>			

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Murral, D.J.; Oswalt, B.M.; Halmi, J.L.; Acree, W.E., Jr.
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	Phys. Chem. Liq. <u>1988</u> , 18, 279-286.
(3) Methylbenzene; C ₇ H ₈ ; [108-88-3]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALUES ^a t = 25.0 °C	
x ₂ ^(s) x ₂	×1
0.0000 0.0000	0.00736
0.2043 0.2031	0.00600
0.3954 0.3935	0.00483
0.4964 0.4943	0.00414
0.5950 0.5929	0.00356
0.7930 0.7910	0.00248
1.0000 0.9984	0.00155
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	<ul> <li>Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> </ul>
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium	<ul> <li>(2) HPLC Grade, 99.9 %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> </ul>
was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Murral, D.J.; Oswalt, B.M.; Halmi, J.L.; Acree, W.E., Jr.
(2) Methylcyclo [108-87-2]	hexane; C ₇ H ₁₄ ;	Phys. Chem. Liq. <u>1988</u> , 18, 279-286.
(3) Methylbenzene; C ₇ H ₈ ; [108-88-3]		
VARIABLES:		PREPARED BY:
T/K = 298, Solv	ent composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VAL t = 25.0 °C	ues ^a	······
x2 ^(s)	<b>x</b> 2	×1
0.0000	0.0000	0.00736
0.1756	0.1745	0.00631
0.1817	0.1806	0.00626
0.3532	0.3514	0.00516
0.3621	0.3603	0.00508
0.4512	0.4492	0.00450
0.4634	0.4613	0.00443
0.5541	0.5520	0.00384
0.5657	0.5636	0.00376
0.7607	0.7586	0.00269
0.7720	0.7700	0.00263
1.0000	0.9984	0.00165
<u> </u>	AUXILIARY	INFORMATION
ETHOD: APPARATUS	S/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
thermometer, and spectrophotometer Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	hixtures were prepared by solute and solvent placed solutes and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<ol> <li>Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>Gold Label, 99+ %, anhydrous Aldrich Chemical Company.</li> <li>HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortl before use.</li> </ol>
		ESTIMATED ERRORS:

_____

Components :		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Murral, D.J.; Oswalt, B.M.;
(2) 2,2,4-Trimet	hylpentane; C ₈ H ₁₈ ;	Halmi, J.L.; Acree, W.E., Jr. <i>Phys. Chem. Liq.</i> <u>1988</u> , 18, 279-286.
[540-84-1]	e; C ₇ H ₈ ; [108-88-3]	Phys. Chem. 119. <u>1960</u> , 10, 279-200.
(3) neenyibenzen		
VARIABLES:		PREPARED BY:
T/K = 298, Solve	nt composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALU	ES ⁸	
x2 ^(s)	×2	×1
0.0000	0.0000	0.00736
0.1362	0.1354	0.00593
0.1381	0.1373	0.00592
0.2926	0.2913	0.00447
0.2944	0.2931	0.00446
0.3895	0.3880	0.00373
0.3921	0.3906	0.00370
0.4862	0.4847	0.00308
0.4932	0.4917	0.00304
0.7059	0.7045	0.00200
0.7127	0.7113	0.00195
1.0000	0.9989	0.00107
fraction solution the ternary f		nole fraction of component 2 in
	AUXILIARY	INFORMATION
METHOD: APPARATUS,	/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	ture bath, calorimetric an ultraviolet/visible r.	(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
weight. Excess so	ixtures were prepared by olute and solvent placed ottles and allowed to	(2) HPLC Grade, 99.7+ %, Aldrich Chemical Company.
equilibrate for a temperature. At	several days at constant tainment of equilibrium several repetitive	(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.
measurements and brium from super saturated solution a coarse filter a flasks, weighed a	by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
		ESTIMATED ERRORS:
	:	$T/K: \pm 0.05.$ $x_2^{(6)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

h <u></u>	
COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Murral, D.J.; Oswalt, B.M.; Halmi, J.L.; Acree, W.E., Jr.
(2) Cyclooctane; C ₈ H ₁₆ ; [292-64-8]	Phys. Chem. Liq. <u>1988</u> , 18, 279-286.
(3) Methylbenzene; C ₇ H ₈ ; [108-88-3]	· · · · · · · · · · · · · · · · · · ·
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EIPERIMENTAL VALUES ⁸ t = 25.0 °C	•
x ₂ ^(s) x ₂	<b>x</b> 1
0.0000 0.0000	0.00736
0.1664 0.1653	0.00658
0.3173 0.3155	0.00568
0.4412 0.4390	0.00508
0.5401 0.5377	0.00451
0.7519 0.7494	0.00337
0.9023 0.9973	0.00266
1.0000 0.9977	0.00225
	i
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to	(2) Gold Label, 99+ %, Aldrich Chemical Company.
equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive	(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene; (	C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.
(2) n-Hexane; C ₆ H	H ₁₄ ; [110-54-3]	Phys. Chem. Liq. <u>1989</u> , 20, 31-38.
(3) 1,4-Dimethyll [106-42-3]	benzene; C ₈ H ₁₀ ;	
VARIABLES:		PREPARED BY:
T/K = 298, Solve:	nt composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALUE t = 25.0 °C	ES ^a	•
x2 ⁽⁵⁾	x2	x ₁
0.0000	0.0000	0.00733
0.1945	0.1933	0.00602
0.3807	0.3790	0.00459
0.4823	0.4804	0.00388
0.5882	0.5863	0.00327
0.7833	0.7816	0.00222
0.8619	0.8603	0.00182
1.0000	0.9987	0.00127
^a x ₂ ^(s) : initi		solvent mixture; x _i : mole mole fraction of component 2 in
a x2 ^(s) : initi fraction solu	bility of the solute; x ₂ : r solution.	mole fraction of component 2 in
<pre>* x2^(s); initi fraction solution the ternary s</pre>	ability of the solute; x ₂ : r solution. AUXILIARY	INFORMATION
<ul> <li>* x2^(s); initi fraction solution the ternary is</li> <li>(ETHOD: APPARATUS)</li> <li>Constant temperati thermometer, and spectrophotometer</li> <li>Binary solvent mi weight. Excess so in amber glass bo equilibrate for st temperature. Att</li> </ul>	AUXILIARY /PROCEDURE cure bath, calorimetric an ultraviolet/visible	mole fraction of component 2 in

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.
(2) n-Heptane; C		Phys. Chem. Liq. <u>1989</u> , 20, 31-38.
(3) 1,4-Dimethylbenzene; C ₈ H ₁₀ ; [106-42-3]		
VARIABLES:		PREPARED BY:
T/K = 298, Solve	nt composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALU t = 25.0 °C	ES ^a	
x2 ^(s)	x2	×1
0.0000	0.0000	0.00733
0.1747	0.1737	0.00593
0.3547	0.3531	0.00463
0.4490	0.4472	0.00403
0.5571	0.5552	0.00341
0.7648	0.7630	0.00240
0.8836	0.8819	0.00195
1.0000	0.9984	0.00157
^a x ₂ ^(s) : init: fraction sol the ternary	ial mole fraction of binary ubility of the solute; x ₂ : n solution.	solvent mixture; x ₁ : mole mole fraction of component 2 in
fraction sol	ubility of the solute; x ₂ : n	solvent mixture; x ₁ : mole mole fraction of component 2 in
fraction sol	ubility of the solute; x ₂ : n solution.	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and	AUXILIARY PROCEDURE ture bath, calorimetric an ultraviolet/visible	nole fraction of component 2 in

	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.
(2) n-Octane; C _g H ₁₈ ; [111-65-9]	Phys. Chem. Liq. <u>1989</u> , 20, 31-38.
(3) 1,4-Dimethylbenzene; C ₈ H ₁₀ ; [106-42-3]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALUES ⁸ t = 25.0 °C	
x2 ^(s) x2	<b>*</b> 1
0.0000 0.0000	0.00733
0.1631 0.1621	0.00621
0.3491 0.3474	0.00494
0.4395 0.3661	0.00431
0.5346 0.5326	0.00376
0.7454 0.7434	0.00274
0.8678 0.8658	0.00227
1.0000 0.9982	0.00184
	TNFORMATION
	INFORMATION
	SOURCE AND PURITY OF MATERIALS:
<b>METHOD: APPARATUS/PROCEDURE</b> Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> </ul>
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> </ul>
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.5+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over</li> </ul>
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.5+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly</li> </ul>
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.5+ %, Aldrich Chemical Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>

Components:		ORIGINAL MEASUREMENTS:	
(1) Anthracene; C	14 ^H 10; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.	
(2) Cyclohexane;	C ₆ H ₁₂ ; [110-82-7]	Phys. Chem. Liq. <u>1989</u> , 20, 31-38.	
(3) 1,4-Dimethylbenzene; C ₈ H ₁₀ ; [106-42-3]			
VARIABLES:		PREPARED BY:	
T/K = 298, Solvent	t composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker	
EXPERIMENTAL VALUE: t = 25.0 °C	3 ^a		
x2 ^(s)	<i>x</i> ₂	<b>x</b> 1	
0.0000	0.0000	0.00733	
0.2232	0.2218	0.00610	
0.4303	0.4282	0.00485	
0.5304	0.5282	0.00417	
0.6322	0.6300	0.00357	
0.8137	0.8117	0.00251	
1.0000	0.9984	0.00155	
the ternary so	olution.	nole fraction of component 2 in	
Lie Lefiary BC	olution.		
		INFORMATION	
METHOD: APPARATUS/E Constant temperatu	AUXILIARY PROCEDURE The bath, calorimetric an ultraviolet/visible		
METHOD: APPARATUS/I Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se temperature. Atta was verified by se measurements and h brium from superse saturated solution a coarse filter in flasks, weighed an	AUXILIARY PROCEDURE The bath, calorimetric an ultraviolet/visible of the set of the set	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,	

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄	H ₁₀ ; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.
(2) Methylcyclohexa		Phys. Chem. Liq. <u>1989</u> , 20, 31-38.
<pre>[108-87-2] (3) 1,4-Dimethylbenzene; C₈H₁₀; [106-42-3]</pre>		
/ARIABLES:		PREPARED BY:
T/K = 298, Solvent	composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
t = 25.0 °C	1	F 10.000
x2 ^(s)	x2	x ₁
0.0000	0.0000	0.00733
0.2045	0.2033	0.00592
0.3822	0.3804	0.00482
0.4879	0.4859	0.00418
0.5939	0.5918	0.00360
0.7977	0.7957	0.00252
0.8578	0.8559	0.00218
1.0000	0.9984	0.00165
^a x ₂ ^(s) : initial	mole fraction of binary ility of the solute; $x_2$ : r	solvent mixture; x ₁ : mole mole fraction of component 2 in
^a x ₂ ^(s) : initial fraction solubi	mole fraction of binary ility of the solute; $x_2$ : r	solvent mixture; x.: mole
^a x ₂ ^(s) : initial fraction solubi	mole fraction of binary llity of the solute; x ₂ : r lution.	solvent mixture; x.: mole
a x ₂ ^(s) : initial fraction solubi the ternary sol	mole fraction of binary lity of the solute; x ₂ : r lution. AUXILIARY	solvent mixture; x ₁ : mole nole fraction of component 2 in
<pre>a x₂^(s): initial fraction solubi the ternary sol the ternary sol</pre>	mole fraction of binary lity of the solute; x ₂ : r lution. AUXILIARY	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION
<ul> <li>* x2^(s): initial fraction solubi the ternary sol</li> <li>Constant temperatur thermometer, and ar spectrophotometer.</li> <li>Binary solvent mixt</li> </ul>	mole fraction of binary ility of the solute; x ₂ : r lution. AUXILIARY ROCEDURE re bath, calorimetric h ultraviolet/visible cures were prepared by	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous Aldrich
<ul> <li>* x2^(s): initial fraction solubi the ternary sol</li> <li>* APPARATUS/PE</li> <li>Constant temperatur thermometer, and ar spectrophotometer.</li> <li>Binary solvent mixt weight. Excess solu in amber glass bott equilibrate for sev temperature. Attai</li> </ul>	mole fraction of binary fility of the solute; x ₂ : r lution. AUXILIARY ROCEDURE The bath, calorimetric h ultraviolet/visible cures were prepared by the and solvent placed thes and allowed to veral days at constant i.ment of equilibrium	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.</pre>
<ul> <li>* x2^(s); initial fraction solubi the ternary sol</li> <li>* The ternary solution solutio</li></ul>	MOLE fraction of binary Lity of the solute; x ₂ : r Lution. AUXILIARY ROCEDURE The bath, calorimetric h ultraviolet/visible Cures were prepared by the and solvent placed Lies and allowed to veral days at constant inment of equilibrium veral repetitive vapproaching equili- suration. Aliquots of s transferred through to tared volumetric d diluted with methanol. Bernined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemical</pre>

Components :	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.
(2) 2,2,4-Trimethylpentane; C ₈ H ₁₈ ; [540-84-1]	Phys. Chem. Liq. <u>1989</u> , 20, 31-38.
(3) 1,4-Dimethylbenzene; C ₈ H ₁₀ ; [106-42-3]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALUES ⁸ t = 25.0 °C	
x2 ^(s) x2	×1
0.0000 0.0000	0.00733
0.1626 0.1617	0.00577
0.3333 0.3319	0.00430
0.4311 0.4296	0.00357
0.5334 0.5318	0.00293
0.7484 0.7470	0.00186
0.8735 0.8723	0.00141
1.0000 0.9989	0.00107
AUXILIAR	Y INFORMATION
	Y INFORMATION SOURCE AND PURITY OF MATERIALS:
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) HPLC Grade, 99.7 %, Aldrich Chemical</li> </ul>
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) HPLC Grade, 99.7 %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.5+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) HPLC Grade, 99.7 %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.5+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) HPLC Grade, 99.7 %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.5+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>

		ORIGINAL MEASUREMENTS:
(1) Anthracene; C	14 ^H 10; [120-12-7]	Acree, W.E., Jr.
(2) n-Hexane; C ₆ H	14; [110-54-3]	J. Chem. Soc., Faraday Trans., <u>1991</u> , 87, 461-464.
<pre>(3) Butyl ethanoate; C₆H₁₂O₂;       [123-86-4]</pre>		401-404.
VARIABLES:		PREPARED BY:
T/K = 298, Solvent composition		W.E. Acree, Jr.
EXPERIMENTAL VALUE t = 25.0 °C	'S ^a	J
x3 ^(s)	*3	<b>x</b> 1
0.0000	0.000	0.00127
0.1076	0.1074	0.00180
0.2107	0.2057	0.00239
0.3995	0.3981	0.00350
0.4878	0.4858	0.00404
0.5944	0.5916	0.00467
0.7930	0.7885	0.00572
0.8808	0.8754	0.00615
1.0000	0.9934	0.00661
	AUXILIARY	INFORMATION
METHOD: APPARATUS/		INFORMATION SOURCE AND PURITY OF MATERIALS:
Constant temperat	PROCEDURE ure bath, calorimetric an ultraviolet/visible	
Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks, weighed a	PROCEDURE sure bath, calorimetric an ultraviolet/visible  xtures were prepared by blute and solvent placed ottles and allowed to several days at constant cainment of equilibrium several repetitive by approaching equili- naturation. Aliquots of ons transferred through .nto tared volumetric und diluted with methanol. termined spectrophoto-	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,

COMPC	onents:		ORIGINAL MEASUREMENTS:
(1)	Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.
(2)	n-Heptane; C	7 ^H 16; [142-82-5]	J. Chem. Soc., Faraday Trans. <u>1991</u> , 87, 461-464.
	(3) Butyl ethanoate; C ₆ H ₁₂ O ₂ ; [123-86-4]		401-404.
VARIA	ABLES:		PREPARED BY:
		nt composition	W.E. Acree, Jr.
EXPER t =	RIMENTAL VALU 25.0 °C	ES ^a	
	x3 ^(s)	×3	×1
	0.0000	0.000	0.00157
	0.1233	0.1230	0.00218
	0.2259	0.2253	0.00275
	0.4250	0.4234	0.00387
	0.5263	0.5240	0.00446
	0.6255	0.6224	0.00501
	0.8050	0.9941	0.00586
	0.9058	0.9001	0.00629
	1.0000	0.9934	0.00661
	a x ₃ ^(s) : initi fraction solution the ternary i internary i	al mole fraction of binary ability of the solute; $x_3$ ; resolution.	solvent mixture; x ₁ : mole mole fraction of component 3 in
	fraction solu	ubility of the solute; x ₃ : r solution.	nole fraction of component 3 in
	fraction solu	ubility of the solute; x ₃ : r solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION
	fraction solu	ability of the solute; x ₃ : r solution. AUXILIARY	nole fraction of component 3 in
METRO Cons ther	fraction solt the ternary of D: APPARATUS, stant temperat	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	nole fraction of component 3 in INFORMATION
METHO Consther spec Bina weig in a equi temp was briu satu satu satu conflas Conc	praction solution the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of ternary o	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f. ixtures were prepared by obute and solvent placed obtles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. stermined spectrophoto-	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₂ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.
(2) n-Octane; C ₈ H ₁₈ ; [111-65-9]	J. Chem. Soc., Faraday Trans. <u>1991</u> , 87,
<pre>(3) Butyl ethanoate; C₆H₁₂O₂;</pre>	461-464.
[123-86-4]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25.0 °C	
x ₃ ^(s) x ₃	×1
0.0000 0.0000	0.00184
0.1238 0.1235	0.00245
0.2677 0.2668	0.00322
0.4604 0.4584	0.00425
0.5555 0.5528	0.00480
0.6591 0.6556	0.00532
0.8330 0.8280	0.00604
0.9145 0.9087	0.00632
1.0000 0.9934	0.00661
-	
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	(2) 99+ %, anhydrous, Aldrich Chemical Company.
in amber glass bottles and allowed to equilibrate for several days at constant	(3) 99+ %, anhydrous, Aldrich Chemical
temperature. Attainment of equilibrium was verified by several repetitive	Company.
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$T/K: \pm 0.05. x_3^{(5)}: \pm 0.0001. x_1: \pm 1 % (relative error).$

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COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.
(2) Cyclohexane,	; C ₆ H ₁₂ ; [110-82-7]	J. Chem. Soc., Faraday Trans. <u>1991</u> , 87, 461-464.
(3) Butyl ethano [123-86-4]	Date; C ₆ H ₁₂ O ₂ ;	
VARIABLES:		PREPARED BY:
T/K = 298, Solve	ent composition	W.E. Acree, Jr.
EXPERIMENTAL VALU	JES ^a	<b>↓</b>
x; ^(s)	<b>x</b> 3	x,
0.0000	0.0000	0.00155
0.0948	0.0946	0.00225
0.1704	0.1699	0.00277
0.3559	0.3545	0.00398
0.4493	0.4472	0.00457
0.5268	0.5242	0.00494
0.7596	0.7551	0.00591
0.8694	0.8640	0.00626
1.0000	0.9934	0.00661
	AUXILIARY	INFORMATION
	ture bath, calorimetric an ultraviolet/visible	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
weight. Excess a in amber glass b equilibrate for	nixtures were prepared by solute and solvent placed sottles and allowed to several days at constant	<ul> <li>(2) HPLC Grade 99.9+ %, Aldrich Chemical Company.</li> <li>(3) 99+ %, anhydrous, Aldrich Chemical</li> </ul>
was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	tainment of equilibrium several repetitive l by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. letermined spectrophoto- 6 nm.	Company. Components 2 and 3 were stored over molecular sieves and distilled short) before use.
		ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_3^{(5)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

Components:		ORIGINAL MEASUREMENTS:
(1) Anthracene; C	14 ^H 10; [120-12-7]	Acree, W.E., Jr.
<pre>(2) Methylcyclohe [108-87-2]</pre>	xane; C ₇ H ₁₄ ;	J. Chem. Soc., Faraday Trans. <u>1991</u> , 87, 461-464.
<pre>3) Butyl ethanoate; C₆H₁₂O₂; [123-86-4]</pre>		
(110 00 1)		
VARIABLES:		PREPARED BY:
T/K = 298, Solven	t composition	W.E. Acree, Jr.
EXPERIMENTAL VALUE t = 25.0 °C	S ^a	
x3 ^(s)	×3	<i>x</i> 1
0.0000	0.0000	0.00165
0.1107	0.1104	0.00239
0.2020	0.2014	0.00298
0.3942	0.3926	0.00416
0.4848	0.4825	0.00472
0.5969	0.5938	0.00522
0.7992	0.7943	0.00607
0.8882	0.8826	0.00630
1.0000	0.9934	0.00661
^a x ₃ ⁽⁵⁾ : initizing fraction solution the ternary s	al mole fraction of binary bility of the solute; $x_3$ : nolution.	solvent mixture; x1: mole mole fraction of component 3 in
fraction solu	bility of the solute; x ₃ : 1	solvent mixture; x1: mole mole fraction of component 3 in
fraction solu	bility of the solute; x ₃ : n olution.	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION
fraction solu the ternary s	bility of the solute; x ₃ : n olution. AUXILIARY	mole fraction of component 3 in
fraction solu the ternary s METHOD: APPARATUS/ Constant temperat	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible	INFORMATION
fraction solu the ternary s NETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
fraction solu the ternary s the ternary s METHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Aldrich Chemical Company. (3) 99+ %, anhydrous, Aldrich Chemical</pre>
fraction solu the ternary s METHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant ainment of equilibrium	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Aldrich Chemical Company. (3) 99+ %, anhydrous, Aldrich Chemical Company.</pre>
fraction solu the ternary s METHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks, weighed a Concentrations de	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant ainment of equilibrium everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Aldrich Chemical Company. (3) 99+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over</pre>
fraction solu the ternary s METHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks, weighed a	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant ainment of equilibrium everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Aldrich Chemical Company. (3) 99+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</pre>
fraction solu the ternary s METHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks, weighed a Concentrations de	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant ainment of equilibrium everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, Aldrich Chemical Company. (3) 99+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly</pre>

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.
(2) 2,2,4-Trimet [540-84-1]	hylpentane; C ₈ H ₁₈ ;	J. Chem. Soc., Faraday Trans. <u>1991</u> , 87, 461-464.
(3) Butyl ethano [123-86-4]	ate; C ₆ H ₁₂ O ₂ ;	
VARIABLES:	······································	PREPARED BY:
T/K = 298, Solve	nt composition	W.E. Acree, Jr.
EXPERIMENTAL VALU t = 25.0 °C	ESª	
x3 ^(s)	x3	x ₁
0.0000	0.0000	0.00107
0.1336	0.1334	0,00158
0.2471	0.2466	0.00211
0.4636	0.4620	0.00332
0.5532	0.5511	0.00385
0.6511	0.6482	0.00447
0.8344	0.8297	0.00565
0.9165	0.9108	0.00617
1.0000	0.9934	0.00661
a _{X3} ^(s) : init; fraction sol the ternary		solvent mixture; $x_1$ : mole mole fraction of component 3 in
fraction sol	ubility of the solute; x3: :	solvent mixture; x ₁ : mole mole fraction of component 3 in
fraction sol	ubility of the solute; x ₃ : solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in Y INFORMATION
fraction sol the ternary	ubility of the solute; x ₃ : solution. AUXILIARY	mole fraction of component 3 in
fraction sol the ternary METHOD: APPARATUS Constant tempera	ubility of the solute; x ₃ : solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	TINFORMATION
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed	<pre>mole fraction of component 3 in  TINFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,</pre>
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive	<pre>mole fraction of component 3 in     INFORMATION     SOURCE AND PURITY OF NATERIALS:    (1) Gold Label, 99.9+ %, Aldrich Chemical     Company, Milwaukee, Wisconsin, USA,     used as received.    (2) HPLC Grade 99.7 %, Aldrich Chemical     Company.    (3) 99+ %, anhydrous, Aldrich Chemical     Company.</pre>
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>mole fraction of component 3 in  TINFORMATION  SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade 99.7 %, Aldrich Chemical Company. (3) 99+ %, anhydrous, Aldrich Chemical</pre>
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed Concentrations d	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<ul> <li>INFORMATION</li> <li>SOURCE AND PURITY OF MATERIALS: <ol> <li>Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>HPLC Grade 99.7 %, Aldrich Chemical Company.</li> <li>99+ %, anhydrous, Aldrich Chemical Company.</li> <li>99+ %, anhydrous, Aldrich Chemical Company.</li> </ol> </li> <li>Gomponents 2 and 3 were stored over molecular sieves and distilled shortly</li> </ul>
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed Concentrations d	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>Mole fraction of component 3 in  INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade 99.7 %, Aldrich Chemical Company. (3) 99+ %, anhydrous, Aldrich Chemical Company. (3) 99+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</pre>

(1) Anthracene		ORIGINAL MEASUREMENTS:	
	; C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Acree, W.E., Jr.	
(2) n-Hexane;	C ₆ H ₁₄ ; [110-54-3]	Phys. Chem. Liq. <u>1991</u> , 24, 31-42.	
(3) Ethyl etha [141-78-6]	noate; C ₄ H ₈ O ₂ ;		
VARIABLES:		PREPARED BY:	
T/K = 298, Sol	vent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne	
EXPERIMENTAL VA t = 25.0 °C	LUES ^a	•	
x3 ^(s)	<i>x</i> 3	x1	
0.0000	0.0000	0.00127	
0.1336	0.1334	0.00184	
0.2498	0.2492	0.00241	
0.4557	0.4541	0.00345	
0.5662	0.5640	0.00395	
0.6627	0.6599	0.00428	
0.8395	0.8355	0.00476	
0.9192	0.9147	0.00485	
1.0000	0.9952	0.00484	
	AUXILIARY	INFORMATION	
METHOD: APPARAT		INFORMATION SOURCE AND PURITY OF MATERIALS:	
Constant tempe	US/PROCEDURE rature bath, calorimetric nd an ultraviolet/visible		
Constant tempe: thermometer, a: spectrophotome: Binary solvent weight. Excess in amber glass equilibrate for temperature. is was verified by measurements an brium from sup saturated solut a coarse filtes flasks, weighed	US/PROCEDURE rature bath, calorimetric nd an ultraviolet/visible ter. mixtures were prepared by solute and solvent placed bottles and allowed to r several days at constant Attainment of equilibrium y several repetitive nd by approaching equili- ersaturation. Aliquots of tions transferred through r into tared volumetric d and diluted with methanol.	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,	

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Acree, W.E., Jr.
(2) n-Heptane;	C ₇ H ₁₆ ; [142-82-5]	Phys. Chem. Liq. <u>1991</u> , 24, 31-42.
(3) Ethyl ethan [141-78-6]	oate; C ₄ H ₈ O ₂ ;	
VARIABLES:		PREPARED BY:
T/K = 298, Solv	ent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VAL t = 25.0 °C	UES ^a	
x3 ^(s)	<b>x</b> 3	×1
0.0000	0.000	0.00157
0.1476	0.1473	0.00216
0.2630	0.2623	0.00269
0.4937	0.4918	0.00381
0.5949	0.5924	0.00426
0.6553	0.6524	0.00445
0.8554	0.8511	0.00497
0.9222	0.9177	0.00493
1.0000 ^a x3 ^(s) : init fraction so the ternary		0.00484 solvent mixture; x _i : mole mole fraction of component 3 in
^a x ₃ ^(s) : init fraction so	tial mole fraction of binary lubility of the solute; $x_3$ ; r	solvent mixture; x,: mole
^a x ₃ ^(s) : init fraction so	tial mole fraction of binary lubility of the solute; x ₃ : r solution.	solvent mixture; x,: mole
^a x ₃ ^(s) : init fraction so	ial mole fraction of binary lubility of the solute; x ₃ : r solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in
<pre>a x₃^(s): init fraction so the ternary METHOD: APPARATU Constant temper</pre>	Lial mole fraction of binary lubility of the solute; x ₃ : r solution. AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS:
<pre>* x3⁽⁵⁾: init fraction so the ternary METHOD: APPARATU Constant temper thermometer, an spectrophotomet Binary solvent i weight. Excess</pre>	Lial mole fraction of binary lubility of the solute; x ₃ : r solution. AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
<pre>a x3^(s); init fraction so the ternary METHOD: APPARATU Constant temper thermometer, an spectrophotomet Binary solvent i weight. Excess in amber glass equilibrate for temperature. A</pre>	Lial mole fraction of binary lubility of the solute; x ₃ : r solution. AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99+ %, Aldrich Chemical</pre>
<pre>a x3^(s): init fraction so the ternary METHOD: APPARATU Constant temper thermometer, an spectrophotomet Binary solvent weight. Excess in amber glass equilibrate for temperature. A was verified by measurements an brium from supe saturated solut a coarse filter flasks, weighed</pre>	AUXILIARY solution. AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive d by approaching equili- rsaturation. Aliquots of ions transferred through into tared volumetric and diluted with methanol. determined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99+ %, Aldrich Chemical Company. (3) 99.5+ %, anhydrous, Aldrich Chemical</pre>
<pre>a x3^(s); init fraction so the ternary METHOD: APPARATU Constant temper thermometer, an spectrophotomet Binary solvent i weight. Excess in amber glass equilibrate for temperature. A was verified by measurements an brium from supe saturated solut a coarse filter flasks, weighed Concentrations</pre>	AUXILIARY solution. AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive d by approaching equili- rsaturation. Aliquots of ions transferred through into tared volumetric and diluted with methanol. determined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99+ %, Aldrich Chemical Company. (3) 99.5+ %, anhydrous, Aldrich Chemical Company. (3) 99.5+ %, anhydrous, Aldrich Chemical Company. (3) 99.5+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly</pre>

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Acree, W.E., Jr.
(2) n-Octane; C ₈ I	H ₁₈ ; [111-65-9]	Phys. Chem. Lig. <u>1991</u> , 24, 31-42.
(3) Ethyl ethano [141-78-6]	ate; C ₄ H ₈ O ₂ ;	
VARIABLES:		PREPARED BY:
T/K = 298, Solve	nt composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
<b>EXPERIMENTAL VALU</b> $t = 25.0 ^{\circ}C$	ES ⁸	
x3 ^(s)	x3	×1
0.0000	0.0000	0.00184
0.1616	0.1612	0.00257
0.2990	0.2980	0.00322
0.5243	0.5221	0.00423
0.6128	0.6100	0.00452
0.7155	0.7120	0.00489
0.8746	0.8702	0.00508
0.9378	0.9331	0.00499
1.0000 ^a x ₃ ^(s) : initi fraction solution the ternary	0.9952 ial mole fraction of binary ubility of the solute; x ₃ : m solution.	0.00484 solvent mixture; x ₁ : mole mole fraction of component 3 in
^a x ₃ ^(s) : initi fraction sol	ial mole fraction of binary ubility of the solute; $x_{\tau}$ : n	solvent mixture; x4: mole
^a x ₃ ^(s) : initi fraction sol	ial mole fraction of binary ubility of the solute; x ₃ : n solution.	solvent mixture; x4: mole
^a x ₃ ^(s) : initi fraction sol	ial mole fraction of binary ubility of the solute; x ₃ : n solution. AUXILIARY	solvent mixture; x ₁ : mole nole fraction of component 3 in
<pre>a x₃^(s): initi fraction sol the ternary METHOD: APPARATUS Constant tempera</pre>	AUXILIARY	Bolvent mixture; x ₁ : mole nole fraction of component 3 in INFORMATION
<ul> <li>* x₃⁽⁵⁾: initification solution the ternary</li> <li>METHOD: APPARATUS</li> <li>Constant temperathermometer, and spectrophotomete</li> <li>Binary solvent m</li> </ul>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical
<ul> <li>* x₃^(s): initification solution the ternary</li> <li>METHOD: APPARATUS</li> <li>Constant temperathermometer, and spectrophotomete</li> <li>Binary solvent m weight. Excess sin amber glass bequilibrate for temperature. At:</li> </ul>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</pre>
<ul> <li>* x3^(\$): initi fraction sol the ternary</li> <li>METHOD: APPARATUS</li> <li>Constant tempera thermometer, and spectrophotomete</li> <li>Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed a</li> </ul>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND FURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical Company. (3) 99.5+ %, anhydrous, Aldrich Chemical</pre>

сомро	NENTS:		ORIGINAL MEASUREMENTS:
(1)	Anthracene; (	C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Acree, W.E., Jr.
(2)	Cyclohexane;	C ₆ H ₁₂ ; [110-82-7]	Phys. Chem. Liq. <u>1991</u> , 24, 31-42.
(3)	Ethyl ethanoa [141-78-6]	ate; C ₄ H ₈ O ₂ ;	
VARIA	BLES:		PREPARED BY:
T/K	ARIABLES: T/K = 298, Solvent composition		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
	<b>IMENTAL VALU</b> 25.0 °C	3S ^a	
	x3 ^(s)	<i>x</i> 3	<b>x</b> 1
	0.0000	0.0000	0.00155
	0.1178	0.1175	0.00234
	0.2320	0.2312	0.00310
	0.4266	0.4248	0.00429
	0.5274	0.5249	0.00474
	0.6296	0.6264	0.00513
	0.8150	0.8107	0.00531
	0.9051	0.9004	0.00515
	1.0000	0.9952	0.00484
	a _{x.} (s): initi	al mole fraction of binary ublity of the solute; $x_3$ :	solvent mixture; x ₁ : mole mole fraction of component 3 in
	^a x ₃ ^(s) : initi fraction solu	al mole fraction of binary ublity of the solute; $x_3$ :	solvent mixture; x ₁ : mole mole fraction of component 3 in
	^a x ₃ ^(s) : initi fraction solu	al mole fraction of binary ubility of the solute; $x_3$ : r solution.	solvent mixture; x ₁ : mole nole fraction of component 3 in INFORMATION
	^a x ₃ ^(s) : initi fraction solu	al mole fraction of binary ability of the solute; x ₃ : r solution. AUXILIARY	nole fraction of component 3 in
METHO	a x ₃ ^(s) : initi fraction solution the ternary of the ternary of the ternary of the ternary of the ternary of t	al mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	nole fraction of component 3 in INFORMATION
METHO Cons ther spec Bina weig	a x ₃ ^(s) ; initi fraction soluthe ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of ternary of the ternary of ternary o	al mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible c. Lxtures were prepared by olute and solvent placed	INFORMATION SOURCE AND FURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
METHO Cons ther spec Bina weig in a equi temp	a x ₃ ^(s) : initi fraction solution the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of the ternary of terna	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f. ixtures were prepared by polute and solvent placed obtles and allowed to several days at constant cainment of equilibrium	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.9+ %, Aldrich Chemical
METHO Cons ther spec Bina weig in a equi temp was meas briu satu satu satu a co flas Conc	a x ₃ ^(s) : initi fraction soli the ternary is the ternary is possible to the ternary is possible to the ternary is stant temperation that temperations and the ternary solvent mist the ternary solvent mist ternary solvent mist the ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist the ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mist ternary solvent mi	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f. Lixtures were prepared by obtles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of cons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) 99.5+ %, anhydrous, Aldrich Chemical

ORIGINAL MEASUREMENTS: Zvaigzne, A.I.; Acree, W.E., Jr. Phys. Chem. Liq. <u>1991</u> , 24, 31-42.
Phys. Chem. L1q. <u>1991</u> , 24, 31-42.
PREPARED BY:
W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
x ₁
0.00165
0.00261
0.00329
0.00431
0.00485
0.00507
0.00516
0.00505
0.00484
INFORMATION
SOURCE AND PURITY OF MATERIALS:
(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
(2) 99+ %, anhydrous, Aldrich Chemical Company.
<ul> <li>(3) 99.5+ %, anhydrous, Aldrich Chemical Company.</li> </ul>
Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
ESTIMATED ERRORS:
$\begin{array}{r} T/K; \pm 0.05. \\ x_3^{(S)}: \pm 0.0001. \\ x_1: \pm 1.5 \ \ (relative \ error). \end{array}$

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	$C_{14}H_{10}; [120-12-7]$	Zvaigzne, A.I.; Acree, W.E., Jr.
<pre>(2) 2,2,4-Trimethylpentane; C₈H₁₈; [540-84-1]</pre>		Phys. Chem. Liq. <u>1991</u> , 24, 31-42.
(3) Ethyl ethanc [141-78-6]	Date; C ₄ H ₈ O ₂ ;	
VARIABLES:		PREPARED BY:
T/K = 298, Solve	ent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALU	JES ^a	
×3 ^(s)	<b>x</b> 3	<i>x</i> 1
0.0000	0.0000	0.00107
0.1306	0.1304	0.00147
0.3215	0.3208	0.00221
0.5273	0.5256	0.00313
0.6250	0.6227	0.00362
0.7106	0.7077	0.00402
0.8682	0.8642	0.00465
0.9290	0.9246	0.00477
1.0000 * x ₃ ^(s) : init fraction sol the ternary	0.9952 ial mole fraction of binary ubility of the solute; $x_3$ : r solution.	0.00484 Bolvent mixture; x ₁ : mole mole fraction of component 3 in
^a x ₃ ^(s) : init fraction sol	ial mole fraction of binary ubility of the solute; $x_3$ :	solvent mixture; $x_1$ : mole
^a x ₃ ^(s) : init fraction sol	ial mole fraction of binary ubility of the solute; $x_3$ : r solution.	solvent mixture; $x_1$ : mole
a x3 ^(s) : init fraction sol the ternary	ial mole fraction of binary ubility of the solute; x3: r solution. AUXILIARY	Bolvent mixture; x ₁ : mole mole fraction of component 3 in
<pre>* x₃^(*): init fraction sol the ternary METHOD: APPARATUS Constant tempera</pre>	ial mole fraction of binary ubility of the solute; x3: r solution. AUXILIARY S/PROCEDURE ature bath, calorimetric a nultraviolet/visible	BOlvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS:
* x3 ^(s) : init fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s	ial mole fraction of binary ubility of the solute; x3: r solution. AUXILIARY S/PROCEDURE ture bath, calorimetric 1 an ultraviolet/visible pr. hixtures were prepared by colute and solvent placed	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received.
<pre>a x₃^(s): init fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At</pre>	ial mole fraction of binary ubility of the solute; x3: r solution. AUXILIARY S/PROCEDURE ature bath, calorimetric an ultraviolet/visible sr. hixtures were prepared by solute and solvent placed oottles and allowed to several days at constant tainment of equilibrium	<pre>Bolvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company.</pre>
* x3 ⁽²⁾ : init fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXI	<pre>solvent mixture; x₁: mole mole fraction of component 3 in : INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) 99.5+ %, anhydrous, Aldrich Chemical</pre>
<pre>a x₃^(s): init fraction sol the ternary the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed Concentrations d</pre>	AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXI	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND FURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) 99.5+ %, anhydrous, Aldrich Chemical Company. (3) 99.5+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled short</pre>

COMPONENTS :		ORIGINAL MEASUREMENTS:	
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Smith, B.; Cordero,Y.;	
(2) n-Heptane; C	7 ^H 16; [142-82-5]	Acree, W.E., Jr. Phys. Chem. Lig., in press.	
(3) Dimethyl hexanedioate; C ₈ H ₁₄ O ₄ ; [627-93-0]			
VARIABLES:	·	PREPARED BY:	
T/K = 298, Solve	ent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne	
EXPERIMENTAL VALU t = 25.0 °C	JES ^a		
x2 ^(s)	<b>x</b> 2	<i>x</i> ₁	
0.0000	0.0000	0.00871	
0.1193	0.1182	0.00886 .	
0.2222	0.2202	0.00878	
0.4328	0.4295	0.00769	
0.5267	0.5231	0.00677	
0.6199	0.6162	0.00590	
0.8179	0.8149	0.00369	
0.9072	0.9048	0.00260	
1.0000 ^a x ₂ ^(s) : init: fraction sol the ternary	0.9984 ial mole fraction of binary ubility of the solute; $x_2$ ; solution.	0.00157 Bolvent mixture; x ₁ : mole mole fraction of component 2 in	
^a x ₂ ^(s) : init: fraction sol	ial mole fraction of binary ubility of the solute; $x_2$ :	solvent mixture; $x_1$ : mole	
^a x ₂ ^(s) : init: fraction sol	ial mole fraction of binary ubility of the solute; x ₂ : s solution.	solvent mixture; $x_1$ : mole	
^a x ₂ ^(s) : init: fraction sol	ial mole fraction of binary ubility of the solute; x ₂ : s solution. AUXILIARY	Bolvent mixture; x ₁ : mole mole fraction of component 2 in	
<pre>a x2⁽⁵⁾: init: fraction sol the ternary METHOD: APPARATUS Constant tempera</pre>	ial mole fraction of binary ubility of the solute; x ₂ : solution. AUXILIARY F/PROCEDURE ture bath, calorimetric an ultraviolet/visible	Bolvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS:	
<pre>a x2⁽⁵⁾: init: fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m</pre>	AUXILIARY AUXILIARY F/PROCEDURE AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica	
<ul> <li>* x2⁽⁵⁾: init: fraction sol the ternary</li> <li>METHOD: APPARATUS</li> <li>Constant tempera thermometer, and spectrophotomete</li> <li>Binary solvent m weight. Excess s in amber glass b</li> </ul>	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica Company.	
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<pre>a x2⁽⁵⁾: init: fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed</pre>	AUXILIARY AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible r. dixtures were prepared by olute and solvent placed bottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 werre stored over	
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<pre>a x2⁽⁵⁾: init: fraction sol the ternary the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed. Concentrations d</pre>	AUXILIARY AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible r. dixtures were prepared by olute and solvent placed bottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>Solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 werre stored over molecular sieves and distilled short before use. ESTIMATED ERRORS:</pre>	
<pre>a x2⁽⁵⁾: init: fraction sol the ternary the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed. Concentrations d</pre>	AUXILIARY AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible r. dixtures were prepared by olute and solvent placed bottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>Bolvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 werre stored over molecular sieves and distilled short before use.</pre>	

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Smith, B.; Cordero, Y.; Acree, W.E., Jr.
(2) Cyclohexane;	; C ₆ H ₁₂ ; [110-82-7]	Phys. Chem. Liq., in press.
(3) Dimethyl hex [627-93-0]	<pre>canedioate; C₈H₁₄O₄;</pre>	rnys. chem. big., in press.
VARIABLES:		PREPARED BY:
T/K = 298, Solve	ent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EIPERIMENTAL VALU t = 25.0 °C	JES ^a	
x2 ^(s)	x2	×1
0.0000	0.0000	0.00871
0.1561	0.1547	0.00889
0.2940	0.2914	0.00872
0.4992	0.4954	0.00765
0.6047	0.6006	0.00676
0.7014	0.6974	0.00572
0.8569	0.8537	0.00368
0.9235	0.9213	0.00268
1.0000	0.9984	0.00155
a x2 ^(s) : init. fraction sol the ternary	ubility of the solute; x ₂ : r	Bolvent mixture; x ₁ : mole mole fraction of component 2 in
fraction sol	ubility of the solute; x ₂ : r	Bolvent mixture; x ₁ : mole mole fraction of component 2 in
fraction sol	ubility of the solute; x ₂ : r solution.	Bolvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION
fraction sol the ternary	ubility of the solute; x ₂ : r solution. AUXILIARY	nole fraction of component 2 in
fraction sol the ternary METHOD: APPARATUS Constant tempera	AUXILIARY S/PROCEDURE an ultraviolet/visible	NOLE fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS:
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m	AUXILIARY AUXILIARY S/PROCEDURE Auture bath, calorimetric an ultraviolet/visible r. hixtures were prepared by	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.9+ %, Aldrich Chemical
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b	AUXILIARY AUXILIARY C/PROCEDURE Auture bath, calorimetric an ultraviolet/visible c. hixtures were prepared by iolute and solvent placed bottles and allowed to	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company.
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At	AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE Auture bath, calorimetric an ultraviolet/visible br. Auxiliance to an ultraviolet/visible br. Auxiliance to a constant tainment of equilibrium	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company.
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE Auture bath, calorimetric an ultraviolet/visible an ultraviolet/visible an ultraviolet/visible an ultraviolet/visible several days at constant tainment of equilibrium several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. letermined spectrophoto-	<pre>INFORMATION INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 were stored over</pre>
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed Concentrations d	AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE Auture bath, calorimetric an ultraviolet/visible an ultraviolet/visible an ultraviolet/visible an ultraviolet/visible several days at constant tainment of equilibrium several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. letermined spectrophoto-	<pre>INFORMATION INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly</pre>

omponents:		ORIGINAL MEASUREMENTS:	
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Smith, B.; Cordero, Y.; Acree, W.E., Jr.	
(2) Methylcyclof [108-87-2]	nexane; C ₇ H ₁₄ ;	Phys. Chem. Liq., in press.	
[108-87-2] (3) Dimethyl hexanedioate; C ₈ H ₁₄ O ₄ ; [627-93-0]			
VARIABLES: T/K = 298, Solvent composition		PREPARED BY: W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne	
			EXPERIMENTAL VALU t = 25.0 °C
x2 ^(s)	×2	<del>×</del> 1	
0.000	0.0000	0.00871	
0.1295	0.1283	0.00898	
0.2415	0.2394	0.00888	
0.4605	0.4569	0.00789	
0.5686	0.5646	0.00697	
0.6674	0.6634	0.00596	
0.8357	0.8324	0.00393	
0.9100	0.9073	0.00295	
1.0000	0.9984	0.00165	
fraction sol the ternary	ubility of the solute; x ₂ : n solution.	solvent mixture; x ₁ : mole mole fraction of component 2 in	
fraction sol the ternary	ubility of the solute; x ₂ : n solution.	nole fraction of component 2 in	
fraction sol the ternary	solution.	nole fraction of component 2 in INFORMATION	
fraction sol the ternary METHOD: APPARATUS	Solution. AUXILIARY		
the ternary METHOD: APPARATUS Constant tempera	AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible	INFORMATION	
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m	AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,	
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b	AUXILIARY AUXILIARY C/PROCEDURE ature bath, calorimetric an ultraviolet/visible r. hixtures were prepared by	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical	
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess g in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILI	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical Company.</pre>	

COMPONENTS: (1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		ORIGINAL MEASUREMENTS:	
		Zvaigzne, A.I.; Acree, W.E., Jr.	
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]		Phys. Chem. Liq. <u>1991</u> , 24, 31-42.	
<pre>(3) Diethyl hexanedioate; C₁₀H₁₈O₄; [141-28-6] VARIABLES: T/K = 298, Solvent composition</pre>			
		<b>PREPARED BY:</b> W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne	
			EXPERIMENTAL VAL t = 25.0 °C
x3 ^(s)	×3	×1	
0.0000	0.000	0.00127	
0.0624	0.0623	0.00199	
0.1414	0.1410	0.00296	
0.3032	0.3017	0.00482	
0.3960	0.3937	0.00591	
0.4999	0.4964	0.00699	
0.7181	0.7117	0.00887	
0.8282	0.8203	0.00952	
	0.000-	0.01033	
1.0000 ^a x ₃ ^(s) : ini fraction ac the ternary	0.9897 tial mole fraction of binary plubility of the solute; x ₃ : r y solution.		
^a x ₃ ^(s) : ini fraction so	tial mole fraction of binary plubility of the solute; $x_3$ : r	solvent mixture; x.: mole	
^a x ₃ ^(s) : ini fraction so	tial mole fraction of binary plubility of the solute; $x_3$ : r solution.	solvent mixture; x.: mole	
a _{x3} (s): ini fraction so the ternary	tial mole fraction of binary plubility of the solute; x3: n y solution. AUXILIARY	solvent mixture; x ₁ : mole mole fraction of component 3 in	
<pre>* x₃(s): ini fraction so the ternary METHOD: APPARATU Constant temper</pre>	tial mole fraction of binary plubility of the solute; x3: n y solution. AUXILIARY NS/PROCEDURE rature bath, calorimetric d an ultraviolet/visible	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION	
<ul> <li>*x3^(s): ini fraction so the ternary</li> <li>METHOD: APPARATU</li> <li>Constant temper thermometer, an spectrophotomet</li> <li>Binary solvent</li> </ul>	tial mole fraction of binary plubility of the solute; x ₃ : r y solution. AUXILIARY DS/PROCEDURE rature bath, calorimetric an ultraviolet/visible ser. mixtures were prepared by	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,	
<ul> <li>* x₃(s); ini fraction so the ternary</li> <li>METHOD: APPARATU</li> <li>Constant temper thermometer, an spectrophotomet</li> <li>Binary solvent weight. Excess in amber glass</li> </ul>	tial mole fraction of binary plubility of the solute; x ₃ : r y solution. AUXILIARY DS/PROCEDURE rature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed bottles and allowed to	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.	
<ul> <li>* x3^(s); ini fraction so the ternary</li> <li>METHOD: APPARATU</li> <li>Constant temper thermometer, an spectrophotomet</li> <li>Binary solvent weight. Excess in amber glass equilibrate for temperature. A was verified by measurements an brium from supe saturated solut a coarse filter flasks, weighed</li> </ul>	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 were stored over	
<pre>a x₃^(s); ini fraction so the ternary METHOD: APPARATU Constant temper thermometer, an spectrophotomet Binary solvent weight. Excess in amber glass equilibrate for temperature. A was verified by measurements an brium from supe saturated solut a coarse filter flasks, weighed Concentrations</pre>	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly</pre>	

(1) Anthracene: (		ORIGINAL MEASUREMENTS:	
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Zvaigzne, A.I.; Acree, W.E., Jr.	
(2) n-Heptane; C ₇ H ₁₆ ; [142-82-5]		Phys. Chem. Liq. <u>1991</u> , 24, 31-42.	
<pre>(3) Diethyl hexanedioate; C₁₀H₁₈O₄; [141-28-6]</pre>			
VARIABLES: T/K = 298, Solvent composition		PREPARED BY:	
		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne	
EXPERIMENTAL VALUE t = 25.0 °C	ES ⁸		
x3 ^(s)	x3	x ₁	
0.0000	0.0000	0.00157	
0.0887	0.0885	0.00254	
0.1544	0.1539	0.00328	
0.3278	0.3261	0.00522	
0.4176	0.4150	0.00619	
0.5344	0.5305	0.00735	
0.7352	0.7286	0.00896	
0.8621	0.8538	0.00962	
1.0000	0.9897	0.01033	
-	solution.		
-			
METHOD: APPARATUS	AUXILIARY	INFORMATION SOURCE AND PURITY OF MATERIALS:	

	ORIGINAL MEASUREMENTS:
COMPONENTS:	
(1) Anthracene; $C_{14}H_{10}$ ; [120-12-7]	Zvaigzne, A.I.; Acree, W.E., Jr.
(2) n-Octane; C ₈ H ₁₈ ; [111-65-9]	Phys. Chem. Liq. <u>1991</u> , 24, 31-42.
(3) Diethyl hexanedioate; C ₁₀ H ₁₈ O ₄ ; [141-28-6]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALUES ⁸ t = 25.0 °C	
x ₃ ^(S) x ₃	x ₁
0.0000 0.0000	0.00184
0.0868 0.0866	0.00280
0.1721 0.1715	0.00377
0.3402 0.3383	0.00567
0.4447 0.4417	0.00679
0.5480 0.5437	0.00776
0.6732 0.6673	0.00877
0.8715 0.8629	0.00989
1.0000 0.9897	0.01033
AUXILI	ARY INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND FURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	
in amber glass bottles and allowed to equilibrate for several days at constant	
temperature. Attainment of equilibrium was verified by several repetitive	
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methano Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$T/K: \pm 0.05.$ $x_3^{(5)}: \pm 0.0001.$ $x_1: \pm 1.5 $ % (relative error).

OMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Acree, W.E., Jr.
(2) Cyclohexane	; C ₆ H ₁₂ ; [110-82-7]	Phys. Chem. Liq. <u>1991</u> , 24, 31-42.
(3) Diethyl hex [141-28-6]	anedioate; C ₁₀ H ₁₈ O ₄ ;	
VARIABLES: T/K = 298, Solvent composition		PREPARED BY:
		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALU	JES ⁸	
*3 ^(s)	×3	×1
0.0000	0.0000	0.00155
0.0611	0.0610	0.00245
0.1187	0.1183	0.00327
0.2661	0.2647	0.00511
0.3541	0.3519	0.00616
0.4508	0.4476	0.00716
0.6832	0.6771	0.00886
0.8279	0.8200	0.00952
1.0000	0.9952	0.01033
	AUXILIARY	INFORMATION
METHOD: APPARATUS	S/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	ature bath, calorimetric d an ultraviolet/visible er.	<ul> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> </ul>
	nixtures were prepared by	(2) HPLC Grade, 99.9+ %, Aldrich Chemical
in amber glass b equilibrate for temperature. At	solute and solvent placed sottles and allowed to several days at constant tainment of equilibrium	Company. (3) 99 %, Aldrich Chemical Company.
measurements and brium from super saturated soluti a coarse filter flasks, weighed	several repetitive i by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. letermined spectrophoto- 6 nm.	Components 2 and 3 were stored over molecular sieves and distilled shorth before use.
		ESTIMATED ERRORS:
		$T/K: \pm 0.05.$ $x_3^{(3)}: \pm 0.0001.$ $x_1: \pm 1.5 $ (relative error).

OMPONENTS:		ORIGINAL MEASUREMENTS:			
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Acree, W.E., Jr.			
2) Methylcyclohexane; C ₇ H ₁₄ ;		Phys. Chem. Liq. <u>1991</u> , 24, 31-42.			
<pre>[108-87-2] (3) Diethyl hexanedicate; C₁₀H₁₈O₄; [141-28-6] VARIABLES: T/K = 298, Solvent composition</pre>		<b>PREPARED BY:</b> W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne			
			EXPERIMENTAL VAL t = 25.0 °C	UES ^a	
			x3 ^(s)	<b>x</b> 3	<i>*</i> 1
0.0000	0.0000	0.00165			
0.0682	0.0680	0.00258			
0.1344	0.1339	0.00344			
0.2960	0.2944	0.00540			
0.3889	0.3864	0.00645			
0.4862	0.4826	0.00731			
0.6317	0.6263	0.00856			
0.8405	0.8324	0.00967			
1.0000	0.9897	0.01033			
^a x ₃ ^(s) : init fraction so the ternary	ial mole fraction of binary lubility of the solute; $x_3$ : r solution.				
fraction so	lubility of the solute; x ₃ : n	solvent mixture; x.: mole			
fraction so	lubility of the solute; x ₃ : r solution.	solvent mixture; x.: mole			
fraction so the ternary	Lubility of the solute; x ₃ : r solution. AUXILIARY	solvent mixture; x ₁ : mole mole fraction of component 3 in			
fraction so the ternary METHOD: APPARATUS Constant tempera	AUXILIARY S/PROCEDURE ature bath, calorimetric i an ultraviolet/visible	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS:			
fraction so the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotometer Binary solvent r weight. Excess f	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed	Solvent mixture; x _i : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,			
fraction so the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent r weight. Excess r in amber glass l equilibrate for	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric i an ultraviolet/visible er. mixtures were prepared by solute and solvent placed pottles and allowed to several days at constant	Solvent mixture; x _i : mole mole fraction of component 3 in INFORMATION SOURCE AND FURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical			
fraction so the ternary the ternary METHOD: APPARATU: Constant temperat thermometer, and spectrophotometer Binary solvent r weight. Excess s in amber glass l equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric i an ultraviolet/visible ar. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive i by approaching equili- rsaturation. Aliquots of lons transferred through into tared volumetric and diluted with methanol. Metermined spectrophoto-	<pre>solvent mixture; x_i: mole mole fraction of component 3 in INFORMATION SOURCE AND FURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical Company.</pre>			
fraction so the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent r weight. Excess r in amber glass l equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed Concentrations of	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric i an ultraviolet/visible ar. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive i by approaching equili- rsaturation. Aliquots of lons transferred through into tared volumetric and diluted with methanol. Metermined spectrophoto-	<pre>solvent mixture; x,: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortl</pre>			

COMPONENTS:		ORIGINAL MEASUREMENTS: 2vaigzne, A.I.; Acree, W.E., Jr. Phys. Chem. Liq. <u>1991</u> , 24, 31-42.				
<ol> <li>Anthracene; C₁₄H₁₀; [120-12-7]</li> <li>2,2,4-Trimethylpentane; C₈H₁₈; [540-84-1]</li> <li>Diethyl hexanedioate; C₁₀H₁₈O₄; [141-28-6]</li> </ol>						
				VARIABLES: T/K = 298, Solvent composition		<b>PREPARED BY:</b> W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
x3 ^(s)	x3	x ₁				
0.0000	0.0000	0.00107				
0.0894	0.0892	0.00182				
0.1723	0.1718	0.00264				
0.3411	0.3396	0.00443				
0.4555	0.4529	0.00565				
0.5626	0.5588	0.00678				
0.7615	0.7549	0.00865				
0.8684	0.8602	0.00949				
1.0000	0.9897	0.01033				
fraction so the ternary	tial mole fraction of binary lubility of the solute; $x_3$ : solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in				
raction so fraction so the ternary	tial mole fraction of binary lubility of the solute; x ₃ : a solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in				
x3 ⁻⁰ inf fraction so the ternary	Bolution.	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION				
the ternary METHOD: APPARATU Constant temper	AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible	INFORMATION SOURCE AND PURITY OF MATERIALS:				
The ternary METHOD: APPARATU Constant temper thermometer, an spectrophotomet Binary solvent is weight. Excess in amber glass equilibrate for temperature. A was verified by measurements an brium from super saturated solut a coarse filter flasks, weighed	AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive d by approaching equili- resaturation. Aliquots of ions transferred through into tared volumetric and diluted with methanol. determined spectrophoto-	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica: Company, Milwaukee, Wisconsin, USA,				

COMPONENTS:		ORIGINAL MEASUREMENTS:			
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Zvaigzne, A.I.; Smith, B.; Cordero, Y.;			
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]		Acree, W.E., Jr. Phys. Chem. Liq., in press.			
<pre>(3) Dibutyl oxalate; C₁₀H₁₈O₄; [2050-60-4] VARIABLES: T/K = 298, Solvent composition</pre>		PREPARED BY: W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne			
			EIPERIMENTAL VALU t = 25.0 °C	JES ^a	
			x2 ^(s)	<i>x</i> 2	×1
0.0000	0.0000	0.01043			
0.1575	0.1560	0.00965			
0.2995	0.2970	0.00850			
0.5129	0.5096	0.00648			
0.6130	0.6096	0.00551			
0.6999	0.6967	0.00456			
0.8623	0.8599	0.00277			
0.9293	0.9274	0.00201			
1.0000 ^a x2 ^(s) : init fraction sol the ternary	0.9987 ial mole fraction of binary ubility of the solute; x ₂ : m solution.	0.00127 solvent mixture; x ₁ : mole mole fraction of component 2 in			
^a x ₂ ^(s) : init fraction sol	ial mole fraction of binary ubility of the solute; $x_2$ :	solvent mixture: x.: mole			
^a x ₂ ^(s) : init fraction sol	ial mole fraction of binary ubility of the solute; x ₂ : m solution.	solvent mixture: x.: mole			
a x2 ^(s) : init. fraction sol the ternary	ial mole fraction of binary ubility of the solute; x ₂ : n solution. AUXILIARY	solvent mixture; x ₁ : mole nole fraction of component 2 in			
<pre>a x2^(\$): init. fraction sol the ternary (ETHOD: APPARATUS Constant tempera thermometer, and spectrophotomete</pre>	ial mole fraction of binary ubility of the solute; x ₂ : n solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r.	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.			
<ul> <li>* x₂^(\$): init. fraction sol the ternary</li> <li>* the ternary</li> <li>* the</li></ul>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company.			
<ul> <li>* x2^(\$): init. fraction sol the ternary</li> <li>* The t</li></ul>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company.</pre>			
<ul> <li>* x2^(s): init. fraction sol the ternary</li> <li>The ternary</li> <li>Constant tempera</li> <li>thermometer, and spectrophotomete</li> <li>Binary solvent m</li> <li>weight. Excess s</li> <li>in amber glass b</li> <li>equilibrate for</li> <li>temperature. At</li> <li>was verified by</li> <li>measurements and</li> <li>brium from super</li> <li>saturated soluti</li> <li>a coarse filter</li> <li>flasks, weighed</li> </ul>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 were stored over</pre>			
* x2 ⁽⁵⁾ : init. fraction sol the ternary the ternary Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed Concentrations d	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shorlt</pre>			

COMPONENTS :		ORIGINAL MEASUREMENTS:			
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Zvaigzne, A.I.; Smith, B.; Cordero, Y.; Acree, W.E., Jr.			
(2) n-Heptane; C ₇ H ₁₆ ; [142-82-5]		Phys. Chem. Lig., in press.			
<pre>(3) Dibutyl oxalate; C₁₀H₁₈O₄; [2050-60-4] VARIABLES: T/K = 298, Solvent composition</pre>		PREPARED BY: W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne			
			EIPERIMENTAL VALU t = 25.0 °C	ES ^a	
			x2 ^(s)	<b>x</b> ,	x,
0.0000	0.0000	0.01043			
0.1459	0.1445	0.00959			
0.2630	0.2607	0.00881			
0.4833	0.4799	0.00694			
0.5799	0.5764	0.00597			
0.6797	0.6763	0.00498			
0.8500	0.8473	0.00313			
0.9195	0.9173	0.00240			
1.0000	0.9984	0.00157			
^a x ₂ ^(s) : init. fraction sol the ternary		solvent mixture; x ₁ : mole mole fraction of component 2 in			
fraction sol	ubility of the solute; x2: 1	solvent mixture; x ₁ : mole mole fraction of component 2 in			
fraction sol	ubility of the solute; x ₂ : n solution.	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION			
fraction sol the ternary	ubility of the solute; x ₂ : n solution.	nole fraction of component 2 in			
fraction sol the ternary METHOD: APPARATUS Constant tempera	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	NOLE fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS:			
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol.	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica: Company, Milwaukee, Wisconsin, USA,			

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Smith, B.; Cordero, Y.;
(2) n-Octane; $C_8H_{18}$ ; [111-65-9] (3) Dibutyl oxalate; $C_{10}H_{18}O_4$ ; [2050-60-4]		Acree, W.E., Jr. Phys. Chem. Liq., in press.
		rnys. cnem. big., in press.
VARIABLES: T/K = 298, Solvent composition		PREPARED BY:
		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALU $t = 25.0 ^{\circ}C$	ES ^a	
x2 ^(s)	×,	<i>x</i> 1
0.0000	0.0000	0.01043
0.1164	0.1152	0.00991
0.2387	0.2365	0.00915
0.4527	0.4494	0.00734
0.5566	0.5530	0.00646
0.6628	0.6592	0.00542
0.8339	0.8309	0.00364
0.9114	0.9089	0.00275
1.0000	0,9982	0.00184
<pre>a x2^(s): init: fraction sol the ternary</pre>	ial mole fraction of binary ubility of the solute; $x_2$ : solution.	
fraction sol	ubility of the solute; x ₂ : :	solvent mixture: x.: mole
fraction sol	ubility of the solute; x ₂ : solution.	solvent mixture: x.: mole
fraction sol	AUXILIARY	solvent mixture; x1: mole mole fraction of component 2 in
Traction sol the ternary METHOD: APPARATUS Constant tempera	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION
Traction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical Company.
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated solution a coarse filter flasks, weighed a	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company.
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated solution a coarse filter flasks, weighed a	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>Solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ %, anhydrous, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly</pre>

ORIGINAL MEASUREMENTS: COMPONENTS: Zvaigzne, A.I.; Smith, B.; Cordero, Y.; (1) Anthracene; C14H10; [120-12-7] Acree, W.E., Jr. (2) Cyclohexane; C₆H₁₂; [110-82-7] Phys. Chem. Liq., in press. (3) Dibutyl oxalate; C₁₀H₁₈O₄; [2050-60-4] PREPARED BY: VARIABLES: T/K = 298, Solvent composition W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne EXPERIMENTAL VALUES^a t = 25.0 °Cx,^(s) **x**2 ×₁ 0.01043 0.0000 0.0000 0.00957 0.1683 0.1667 0.00860 0.3317 0.3288 0.00673 0.5625 0.5587 0.00579 0.6557 0.6519 0.7420 0.7384 0.00484 0.8818 0.8790 0.00314 0.00235 0.9402 0.9380 0.00155 1.0000 0.9984 ^a  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_2$ : mole fraction of component 2 in the ternary solution. AUXILIARY INFORMATION SOURCE AND PURITY OF MATERIALS: METHOD: APPARATUS/PROCEDURE Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to Company. equilibrate for several days at constant (3) 99 %, Aldrich Chemical Company. temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili-brium from supersaturation. Aliquots of Components 2 and 3 were stored over molecular sieves and distilled shortly before use. saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-metrically at 356 nm. ESTIMATED ERRORS:  $\begin{array}{l} T/K: \ \pm \ 0.05. \\ x_2^{(s)}: \ \pm \ 0.0001. \\ x_1: \ \pm \ 1.5 \ \ \text{(relative error).} \end{array}$ 

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COMPONENTS :		ORIGINAL MEASUREMENTS:
1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Zvaigzne, A.I.; Smith, B.; Cordero, Y.; Acree, W.E., Jr.
2) Methylcyclohexane; C ₇ H ₁₄ ;		Phys. Chem. Liq., in press.
[108-87-2] (3) Dibutyl oxalate; C ₁₀ H ₁₈ O ₄ ;		
[2050-60-4]		
<b>/ARIABLES:</b> T/K = 298, Solvent composition		PREPARED BY:
		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
<b>EXPERIMENTAL VALU</b> t = 25.0 °C	ES ^a	
x2 ^(s)	<i>x</i> 2	×1
0.0000	0.0000	0.01043
0.1702	0.1686	0.00960
0.2855	0.2830	0.00880
0.5185	0.5149	0.00702
0.6203	0.6165	0.00606
0.7115	0.7078	0.00514
0.8603	0.8573	0.00346
0.9196	0.9176	0.00217
1.0000	0.9984	0.00165
	AUXILIARY	INFORMATION
ETHOD: APPARATUS	/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	ture bath, calorimetric an ultraviolet/visible r.	<ul> <li>(1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received.</li> </ul>
	ixtures were prepared by	(2) 99+ %, anhydrous, Aldrich Chemical
in amber glass bo	olute and solvent placed ottles and allowed to	Company. (3) 99 %, Aldrich Chemical Company.
temperature. Att	several days at constant tainment of equilibrium several repetitive	(3) 99 %, Aldrich Chemical Company. Components 2 and 3 were stored over
measurements and brium from supers saturated solution a coarse filter is flasks, weighed a	by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. atermined spectrophoto-	molecular sieves and distilled short. before use.
	·	ESTIMATED ERRORS:
		$T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1.5$ % (relative error).

COMPONENTS :	ORIGINAL MEASUREMENTS:	
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Zvaigzne, A.I.; Smith, B.; Cordero, Y.;	
(2) 2,2,4-Trimethylpentane; C ₈ H ₁₈ ;	Acreé, W.E., Jr.	
[540-84-1]	Phys. Chem. Liq., in press.	
(3) Dibutyl oxalate; C ₁₀ H ₁₈ O ₄ ; [2050-60-4]		
VARIABLES:	PREPARED BY:	
T/K = 298, Solvent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne	
EXPERIMENTAL VALUES ⁸ t = 25.0 °C		
x ₂ ^(S) x ₂	x ₁	
0.0000 0.0000	0.01043	
0.1279 0.1267	0.00941	
0.2522 0.2501	0.00832	
0.4556 0.4527	0.00627	
0.5538 0.5509	0.00531	
0.6501 0.6473	0.00436	
0.8312 0.8291	0.00258	
0.9151 0.9135	0.00180	
1.0000 0.9989	0.00107	
AUXILIARY		
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:	
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.	
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to	(2) HPLC Grade, 99.7 %, Aldrich Chemical Company.	
equilibrate for several days at constant temperature. Attainment of equilibrium	(3) 99 %, Aldrich Chemical Company.	
was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.	
	ESTIMATED ERRORS:	
	$T/K: \pm 0.05.$ $x_2^{(8)}: \pm 0.0001.$ $x_1: \pm 1.5$ % (relative error).	

COMPONENTS:			ORIGINAL MEASUREMENTS:
(1) 1	(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Marthandan, M.V.; Acree, W.E., Jr.
(2) 1	(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]		J. Chem. Eng. Data <u>1987</u> , 32, 301-303.
(3) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]		cane; C ₈ H ₁₈ O;	
VARIABLES:			PREPARED BY:
<i>т/</i> К =	T/K = 298, Solvent composition		W.E. Acree, Jr.
	IMENTAL VALUE	3S ^a	
,	x2 ^(s)	x2	×1
c	0.0000	0.0000	0.003609
c	0.2515	0.2508	0.002944
c	0.4505	0.4494	0.002453
c	0.4516	0.4505	0.002444
c	0.5676	0.5664	0.002177
c	0.6493	0.6480	0.001989
c	0.6501	0.6488	0.001979
c	0.8402	0.8389	0.001571
	1.0000	0.9987	0.001273
a f	* x ₂ ^(s) : initi	al mole fraction of binary bility of the solute; $x_2$ :	
a f	a x ₂ ^(s) : initi fraction solu	al mole fraction of binary bility of the solute; $x_2$ :	solvent mixture; x.: mole
a f	a x ₂ ^(s) : initi fraction solu	al mole fraction of binary bility of the solute; $x_2$ : a colution.	solvent mixture; x.: mole
a f t	a x ₂ ^(s) : initi fraction solu	al mole fraction of binary ibility of the solute; x ₂ : a solution. AUXILIARY	solvent mixture; x ₁ : mole mole fraction of component 2 in
AETHOD Const therm	a x ₂ ^(s) : initification solution fraction solution the ternary sol	al mole fraction of binary ibility of the solute; x ₂ : a iolution. AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible	Bolvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION
AETHOD Const therm spect Binar	<ul> <li>x2^(s): initifraction solution</li> <li>the ternary solution</li> <li>APPARATUS/</li> <li>tant temperation</li> <li>trophotometer</li> <li>trophotometer</li> </ul>	al mole fraction of binary ibility of the solute; x ₂ : i iolution. AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
METHOD Const therm spect Binar weigh in am	<ul> <li>x2^(s): initifraction solution</li> <li>fraction solution</li> <li>the ternary solution</li> <li>constant temperates</li> <li>constant temperates</li> <li>constant temperates</li> <li>constant solution</li> <li>constant solution</li></ul>	al mole fraction of binary ibility of the solute; x ₂ : i iolution. AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
METHOD Const therm spect Binar weigh in am equil tempe was v measu brium satur a coa flask Conce	<b>b</b> $x_2^{(s)}$ : initi fraction solution the ternary solution the ternary solution trophotometer and temperat mometer, and trophotometer fy solvent mint. Excess so her glass bo librate for solution trements and a from supers rated solution tres filter i so, weighed a	AUXILIARY AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant ainment of equilibrium everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over</pre>
METHOD Const therm spect Binar weigh in am equil tempe was v measu brium satur a coa flask Conce	b: APPARATUS/ tant temperat mometer, and trophotometer cy solvent mint. Excess so maker glass bo librate for s erature. Att rements and a from supers cated solution ts, weighed a matrations de	AUXILIARY AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant ainment of equilibrium everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly</pre>

COMPONENTS:		ORIGINAL MEASUREMENTS:	
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Marthandan, M.V.; Acree, W.E., Jr.	
(2) n-Heptane; C ₇ H ₁₆ ; [142-82-5]		J. Chem. Eng. Data <u>1987</u> , 32, 301-303.	
(3) 1,1-Oxybisbutane; C _g H ₁₈ O; [142-96-1]			
VARIABLES:		PREPARED BY:	
T/K = 298, Solvent composition		W.E. Acree, Jr.	
EXPERIMENTAL VALUES ⁸ t = 25.0 °C			
x2 ^(s)	x2	x ₁	
0.0000	0.0000	0.003609	
0.2330	0.2323	0.003091	
0.4186	0.4175	0.002676	
0.4200	0.4189	0.002647	
0.5379	0.5366	0.002447	
0.6243	0.6229	0.002258	
0.8130	0.8115	0.001894	
1.0000	0.9984	0.001568	
		INFORMATION	
Constant temperatur		INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.	
thermometer, and an spectrophotometer. Binary solvent mixt weight. Excess solu in amber glass bott equilibrate for sev	OCEDURE e bath, calorimetric ultraviolet/visible ures were prepared by te and solvent placed les and allowed to eral days at constant	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.</li> <li>(2) HPLC Grade, 99+ %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical</li> </ul>	
Constant temperatur thermometer, and an spectrophotometer. Binary solvent mixt weight. Excess solu in amber glass bott equilibrate for sev temperature. Attai was verified by sev measurements and by brium from supersat saturated solutions a coarse filter int flasks, weighed and	OCEDURE e bath, calorimetric ultraviolet/visible ures were prepared by te and solvent placed les and allowed to eral days at constant nment of equilibrium eral repetitive approaching equili- uration. Aliquots of transferred through o tared volumetric diluted with methanol. rmined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.</li> <li>(2) HPLC Grade, 99+ %, Aldrich Chemical Company.</li> </ul>	

COMPONENTS :		ORIGINAL MEASUREMENTS:	
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Marthandan, M.V.; Acree, W.E., Jr.	
(2) n-Octane; C ₈ H ₁₈ ; [111-65-9]		J. Chem. Eng. Data <u>1987</u> , 32, 301-303.	
(3) 1,1-Oxybisbutan [142-96-1]	ne; C ₈ H ₁₈ O;		
VARIABLES:		PREPARED BY:	
T/K = 298, Solvent	composition	W.E. Acree, Jr.	
EXPERIMENTAL VALUES ⁶ t = 25.0 °C	1		
x2 ^(\$)	¥2	<b>*</b> 1	
0.0000	0.0000	0.003609	
0.2167	0.2160	0.003185	
0.4059	0.4047	0.002837	
0.5116	0.5102	0.002652	
0.6030	0.6015	0.002478	
0.7914	0.7897	0.002151	
1.0000	0.9982	0.001836	
	lution.		
		INFORMATION	
ETHOD: APPARATUS/PF	AUXILIARY	INFORMATION SOURCE AND PURITY OF MATERIALS:	
Constant temperatur	AUXILIARY		
Constant temperatur thermometer, and ar spectrophotometer. Binary solvent mixt weight. Excess solv in amber glass bott	AUXILIARY ROCEDURE The bath, calorimetric in ultraviolet/visible cures were prepared by the and solvent placed	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> </ul>	
thermometer, and an spectrophotometer. Binary solvent mixt weight. Excess solu in amber glass bott equilibrate for sev temperature. Attai was verified by sev	AUXILIARY ROCEDURE The bath, calorimetric the ultraviolet/visible cures were prepared by the and solvent placed thes and allowed to reral days at constant inment of equilibrium reral repetitive	<ul> <li>SOURCE AND FURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> </ul>	
Constant temperatur thermometer, and ar spectrophotometer. Binary solvent mixt weight. Excess solu in amber glass bott equilibrate for sev temperature. Attai was verified by sev measurements and by brium from supersat saturated solutions a coarse filter int flasks, weighed and	AUXILIARY ROCEDURE The bath, calorimetric h ultraviolet/visible the and solvent placed cles and allowed to reral days at constant mment of equilibrium reral repetitive approaching equili- turation. Aliquots of s transferred through to tared volumetric d diluted with methanol. ermined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over</li> </ul>	
Constant temperatur thermometer, and ar spectrophotometer. Binary solvent mixt weight. Excess solu in amber glass bott equilibrate for sev temperature. Attai was verified by sev measurements and by brium from supersat saturated solutions a coarse filter int flasks, weighed and Concentrations dete	AUXILIARY ROCEDURE The bath, calorimetric h ultraviolet/visible the and solvent placed cles and allowed to reral days at constant mment of equilibrium reral repetitive approaching equili- turation. Aliquots of s transferred through to tared volumetric d diluted with methanol. ermined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly</li> </ul>	
Constant temperatur thermometer, and ar spectrophotometer. Binary solvent mixt weight. Excess solu in amber glass bott equilibrate for sev temperature. Attai was verified by sev measurements and by brium from supersat saturated solutions a coarse filter int flasks, weighed and Concentrations dete	AUXILIARY ROCEDURE The bath, calorimetric h ultraviolet/visible the and solvent placed cles and allowed to reral days at constant mment of equilibrium reral repetitive approaching equili- turation. Aliquots of s transferred through to tared volumetric d diluted with methanol. ermined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>	

COMPONENTS: ORIGINAL MEASUREMENTS: (1) Anthracene; C14H10; [120-12-7] Marthandan, M.V.; Acree, W.E., Jr. J. Chem. Eng. Data 1987, 32, 301-303. (2) Cyclohexane; C₆H₁₂; [110-82-7] (3) 1,1-Oxybisbutane; C₈H₁₈O; [142-96-1] VARIABLES: PREPARED BY: T/K = 298, Solvent composition W.E. Acree, Jr. EXPERIMENTAL VALUES^a t = 25.0 °Cx2^(s) x₁ **x**2 0.0000 0.0000 0.003609 0.2869 0.2860 0.003066 0.5080 0.5067 0.002647 0.6074 0.6059 0.002435 0.7032 0.7016 0.002230 0.8577 0.8561 0.001884 0.8591 0.8575 0.001867 1.0000 0.9984 0.001551 a  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_2$ : mole fraction of component 2 in the ternary solution. AUXILIARY INFORMATION SOURCE AND PURITY OF MATERIALS: METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili-brium from supersaturation. Aliquots of Company. Components 2 and 3 were stored over molecular sieves and distilled shortly saturated solutions transferred through a coarse filter into tared volumetric before use. flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-metrically at 356 nm. ESTIMATED ERRORS:  $T/K: \pm 0.05.$  $x_2^{(3)}: \pm 0.0001.$  $x_1: \pm 1$  % (relative error).

ONPONENTS:		ORIGINAL MEASUREMENTS:	
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Marthandan, M.V.; Acree, W.E., Jr.	
(2) Methylcyclohexane; C ₇ H ₁₄ ; [108-87-2]		J. Chem. Eng. Data <u>1987</u> , 32, 301-303.	
(3) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]			
ARIABLES:		PREPARED BY:	
T/K = 298, Solven	t composition	W.E. Acree, Jr.	
EXPERIMENTAL VALUE: t = 25.0 °C	S ^a	• • • • • • • • • • • • • • • • • • •	
x2 ⁽²⁾	x ₂	x ₁	
0.0000	0.0000	0.003609	
0.2544	0.2536	0.003122	
0.4391	0.4379	0.002799	
0.5727	0.5713	0.002520	
0.5738	0.5724	0.002511	
0.6674	0.6659	0.002315	
0.8201	0.8184	0.002021	
0.8228	0.8211	0.002009	
1.0000	0.9983	0.001652	
the ternary so	pility of the solute; x ₂ :	solvent mixture; x ₁ : mole mole fraction of component 2 in	
the ternary so	pility of the solute; x ₂ :	mole fraction of component 2 in	
the ternary so	bility of the solute; x ₂ ; solution.	INFORMATION	
the ternary so	AUXILIARY	mole fraction of component 2 in	
the ternary so TETHOD: APPARATUS/P Constant temperatu	AUXILIARY PROCEDURE are bath, calorimetric an ultraviolet/visible	INFORMATION SOURCE AND PURITY OF MATERIALS:	
the ternary so ETHOD: APPARATUS/F Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol	AUXILIARY PROCEDURE are bath, calorimetric an ultraviolet/visible ctures were prepared by ute and solvent placed	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica: Company, Milwaukee, Wisconsin, USA, used as received.	
CETHOD: APPARATUS/P Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se temperature. Atta	AUXILIARY PROCEDURE are bath, calorimetric an ultraviolet/visible stures were prepared by ute and solvent placed titles and allowed to system allowed to sys	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica: Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous, Aldrich	
The ternary so The ternary so TETHOD: APPARATUS/P Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se temperature. Atta was verified by se temperature. Atta was verified by se temperature. Atta was verified by se temperature. Atta was verified by se temperature. Atta correct filter in flasks, weighed an Concentrations det	AUXILIARY PROCEDURE are bath, calorimetric in ultraviolet/visible actures were prepared by ute and solvent placed tiles and allowed to weral days at constant inment of equilibrium weral repetitive by approaching equili- turation. Aliquots of is transferred through ito tared volumetric d diluted with methanol. ermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical</pre>	
<b>(ETHOD: APPARATUS/P</b> Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se temperature. Atta was verified by se measurements and b brium from supersa saturated solution a coarse filter in flasks, weighed an	AUXILIARY PROCEDURE are bath, calorimetric in ultraviolet/visible actures were prepared by ute and solvent placed tiles and allowed to weral days at constant inment of equilibrium weral repetitive by approaching equili- turation. Aliquots of is transferred through to tared volumetric d diluted with methanol. ermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled short)</pre>	

COMPONENTS:		ORIGINAL MEASUREMENTS:	
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	McCargar, J.W.; Acree, W.E., Jr.	
2) n-Hexadecane; C ₁₆ H ₃₄ ; [544-76-3]		J. Pharm. Sci. <u>1987</u> , 76, 572-574.	
(3) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]			
VARIABLES:	· · · · · · · · · · · · · · · · · · ·	PREPARED BY:	
T/K = 298, Solve	ent composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar	
EXPERIMENTAL VAL t = 25.0 °C	UES ^a		
x3 ^(s)	*3	x ₁	
0.0000	0.0000	0.00380	
0.1328	0.1323	0.00376	
0.2139	0.2131	0.00372	
0.3046	0.3035	0.00370	
0.3963	0.3948	0.00370	
0.4844	0.4826	0.00368	
0.5811	0.5790	0.00367	
0.7051	0.7025	0.00368	
0.7993	0.7964	0.00365	
0.7993 0.8887	0.7964 0.8855	0.00365 0.00360	
0.8887 1.0000 ^a x: ^(s) : init	0.8855 0.9965 ial mole fraction of binary lubility of the solute; x;:	0.00360 0.00354	
0.8887 1.0000 ^a x3 ^(s) : init fraction so	0.8855 0.9965 ial mole fraction of binary lubility of the solute; x;:	0.00360 0.00354 Bolvent mixture; x.: mole	
0.8887 1.0000 ^a x3 ^(s) : init fraction so	0.8855 0.9965 Tial mole fraction of binary lubility of the solute; x ₃ : solution.	0.00360 0.00354 Bolvent mixture; x.: mole	
0.8887 1.0000 ^a x3 ^(s) : init fraction so	0.8855 0.9965 Tial mole fraction of binary lubility of the solute; x ₃ : solution.	0.00360 0.00354 Bolvent mixture; x ₁ : mole mole fraction of component 3 in	
0.8887 1.0000 ^a x ₃ ^(s) : init fraction so the ternary METHOD: APPARATUS Constant tempers	0.8855 0.9965 Tial mole fraction of binary lubility of the solute; x ₃ : solution. AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible	0.00360 0.00354 mole fraction of component 3 in r INFORMATION	
0.8887 1.0000 * x3 ^(S) : init fraction so the ternary <b>METHOD: APPARATUS</b> Constant tempers thermometer, and spectrophotometer Binary solvent r	0.8855 0.9965 Tail mole fraction of binary lubility of the solute; x ₃ : solution. AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by	0.00360 0.00354 Bolvent mixture; x ₁ : mole mole fraction of component 3 in <b>SOURCE AND PURITY OF MATERIALS:</b> (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company, used	
0.8887 1.0000 a x3 ⁽⁵⁾ : init fraction so the ternary <b>METHOD: APPARATU</b> Constant temperather thermometer, and spectrophotometer Binary solvent r weight. Excess r in amber glass l equilibrate for temperature. An was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed chloromethame.	0.8855 0.9965 Stal mole fraction of binary lubility of the solute; x ₃ : solution. AUXILIARS S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er.	0.00360 0.00354 Bolvent mixture; x ₁ : mole mole fraction of component 3 in (INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.	
0.8887 1.0000 ^a x ₃ ^(s) : init fraction so the ternary <b>METHOD: APPARATU</b> Constant temper, thermometer, and spectrophotometer Binary solvent n weight. Excess n in amber glass 1 equilibrate for temperature. At was verified by measurements and brium from super saturated solut; a coarse filter flasks, weighed chloromethane. determined spect	0.8855 0.9965 Sial mole fraction of binary lubility of the solute; x ₃ : solution. AUXILIARS S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive d by approaching equili- creaturation. Aliquots of lons transferred through into tared volumetric and diluted with tetra- Concentrations were	<ul> <li>0.00360</li> <li>0.00354</li> <li>solvent mixture; x₁: mole mole fraction of component 3 in</li> <li>f INFORMATION</li> <li>SOURCE AND PURITY OF MATERIALS: <ul> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) 99 %, Aldrich Chemical Company, used as received.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company, was stored over molecular sieves and distilled shortly before</li> </ul> </li> </ul>	

Components :		ORIGINAL MEAS	UREMENTS :
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Anderson, B.D.	
<pre>(2) 2,2,4-Trimethylpentane; C₈H₁₈; [540-84-1]</pre>		Ph.D. Dissertation, University of Kansas, Lawrence, Kansas, USA (1978).	
(3) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1] VARIABLES:		PREPARED BY:	
t = 25.0 °C	ga		······································
C3 ⁽²⁾	<i>c</i> 1	c3 ^(s)	с ₁
0.00000	0.00660	1.202	0.00849
0.01088	0.00636	1.498	0.00918
0.0299	0.00627	1.998	0.0101
0.0495	0.00639	3.031	0.0127
0.0847	0.00637	3.983	0.0153
0.1246	0.00646	4.763	0.0174
0.4216	0.00704	5.867	0.0210
0.6936	0.00749		
0.8675	0.00792		
^a c ₃ ^(s) : initi solvent mixtu	al molar concentration (mol ure; c ₁ is the solubility (m	dm ⁻³ ) of the ) ol dm ⁻³ ) of the	binary solute.
^a c ₃ ^(s) : initi solvent mixtu	al molar concentration (mol ure; c ₁ is the solubility (m	dm ⁻³ ) of the ) ol dm ⁻³ ) of the	binary solute.
* c ₃ ⁽⁸⁾ : initi solvent mixtu		dm ⁻³ ) of the ) ol dm ⁻³ ) of the INFORMATION	binary solute.
	AUXILIARY	INFORMATION	binary solute. RITY OF WATERIALS:
ETHOD: APPARATUS, Constant temperat	AUXILIARY /PROCEDURE cure bath, rotator, an ultraviolet/visible	INFORMATION SOURCE AND PUT (1) 99.7 %, 2	RITY OF MATERIALS: Aldrich Chemical Company, a, Wisconsin, USA, used as
ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in glass vials, a for several days ttainment of equ	AUXILIARY /PROCEDURE ture bath, rotator, an ultraviolet/visible  ixtures were prepared by plute and solvent placed and allowed to equilibrate at constant temperature. milibrium was verified by	INFORMATION SOURCE AND PUT (1) 99.7 %, J Milwauked received (2) 99 %, Ph: ville, OJ molecular water.	AITY OF MATERIALS: Aldrich Chemical Company, a, Wisconsin, USA, used as Allips Petroleum, Bartles- Clahoma, USA, stored over c sieves to remove trace
ETHOD: APPARATUS, Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in glass vials, a for several days attainment of equ several duplicate of saturated solu a coarse filter fi lasks, weighed a concentrations de	AUXILIARY /PROCEDURE ture bath, rotator, an ultraviolet/visible tures were prepared by plute and solvent placed and allowed to equilibrate at constant temperature. milibrium was verified by a measurements. Aliquots tions transferred through into tared volumetric and diluted with methanol. termined spectrophoto-	INFORMATION SOURCE AND PUT (1) 99.7 %, J Milwaukee received (2) 99 %, Ph ville, O molecular water. (3) 99 %, Alo	RITY OF MATERIALS: Aldrich Chemical Company, a, Wisconsin, USA, used as billips Petroleum, Bartles- clahoma, USA, stored over
ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in glass vials, a for several days Attainment of equ several duplicate of saturated solu a coarse filter i flasks, weighed a	AUXILIARY /PROCEDURE ture bath, rotator, an ultraviolet/visible tures were prepared by plute and solvent placed and allowed to equilibrate at constant temperature. milibrium was verified by a measurements. Aliquots tions transferred through into tared volumetric and diluted with methanol. termined spectrophoto-	INFORMATION SOURCE AND PUT (1) 99.7 %, J Milwaukee received (2) 99 %, Ph ville, O molecular water. (3) 99 %, Alo	RITY OF MATERIALS: Aldrich Chemical Company, a, Wisconsin, USA, used as illips Petroleum, Bartles- clahoma, USA, stored over c sieves to remove trace drich Chemical Company, was received.

Components:		ORIGINAL MEASUREMENTS:	
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Marthandan, M.V.; Acree, W.E., Jr.	
<pre>(2) 2,2,4-Trimethylpentane; C₈H₁₈;     [ 540-84-1]</pre>		J. Chem. Eng. Data <u>1987</u> , 32, 301-303.	
<pre>(3) 1,1-Oxybisbutane; C₈H₁₈O; [142-96-1] /ARIABLES: T/K = 298, Solvent composition</pre>			
		PREPARED BY:	
		W.E. Acree, Jr.	
EXPERIMENTAL VALU $t = 25.0  ^{\circ}C$	es ^a	<b>•</b>	
x2 ^(s)	<b>x</b> 2	x ₁	
0.0000	0.0000	0.003609	
0.2142	0.2136	0.002942	
0.4073	0.4063	0.002391	
0.5008	0.4997	0.002146	
0.6114	0.6103	0.001860	
0.7886	0.7874	0.001469	
0.8831	0.8820	0.001280	
1.0000	0.9989	0.001067	
a _{X2} (\$); init. fraction sol the ternary		solvent mixture; x ₁ : mole mole fraction of component 2 in	
fraction sol	ubility of the solute; x ₂ : r	solvent mixture; x ₁ : mole mole fraction of component 2 in	
fraction sol	ubility of the solute; x ₂ : r solution.	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION	
fraction sol the ternary	ubility of the solute; x ₂ : r solution. AUXILIARY	mole fraction of component 2 in	
fraction sol the ternary ETHOD: APPARATUS Constant tempera thermometer, and	AUXILIARY AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible	INFORMATION SOURCE AND PURITY OF MATERIALS:	
fraction sol the ternary ETHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica	
fraction sol the ternary ETHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for	AUXILIARY AUXILIARY AUXILIARY AUXILIARY C/PROCEDURE ature bath, calorimetric an ultraviolet/visible or.	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received.	
<b>GETHOD:</b> APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over</pre>	
fraction sol the ternary (ETHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed Concentrations d	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	<pre>INFORMATION INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled short</pre>	

	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Marthandan, M.V.; Acree, W.E., Jr.
(2) Cyclooctane; C ₈ H ₁₆ ; [292-64-8]	J. Chem. Eng. Data <u>1987</u> , 32, 301-303.
(3) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ⁸ t = 25.0 °C	
$x_2^{(s)}$ $x_2$	×1
0.0000 0.0000	0.003609
0.2387 0.2379	0.003481
0.4663 0.4648	0.003242
0.5512 0.5495	0.003114
0.6522 0.6503	0.002961
0.8273 0.8251	0.002653
1.0000 0.9977	0.002251
AUX	(ILIARY INFORMATION
AUX METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetr thermometer, and an ultraviolet/visib spectrophotometer. Binary solvent mixtures were prepared weight. Excess solute and solvent pla	<pre>Source AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. 1 by (2) Gold Label, 99+ %, Aldrich Chemical Company.</pre>
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetr thermometer, and an ultraviolet/visib spectrophotometer. Binary solvent mixtures were prepared weight. Excess solute and solvent pla in amber glass bottles and allowed to equilibrate for several days at const temperature. Attainment of equilibri was verified by several repetitive	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> </ul>
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetr thermometer, and an ultraviolet/visib spectrophotometer. Binary solvent mixtures were prepared weight. Excess solute and solvent pla in amber glass bottles and allowed to equilibrate for several days at const temperature. Attainment of equilibri	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. (4) Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetr thermometer, and an ultraviolet/visib spectrophotometer. Binary solvent mixtures were prepared weight. Excess solute and solvent pla in amber glass bottles and allowed to equilibrate for several days at const temperature. Attainment of equilibri was verified by several repetitive measurements and by approaching equil brium from supersaturation. Aliquots saturated solutions transferred throu a coarse filter into tared volumetric flasks, weighed and diluted with meth Concentrations determined spectrophot	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. (4) Components 2 and 3 were stored over molecular sieves and distilled shortly before use.

	ents:		ORIGINAL MEASUREMENTS:	
(1) Ar	1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		McCargar, J.W.; Acree, W.E., Jr.	
(2) 2, co	<pre>2) 2,6,10,15,19,23-Hexamethyltetra- cosane; C₃₀H₆₂; [111-01-3]</pre>		J. Pharm. Sci. <u>1987</u> , 76, 572-574.	
(3) 1, []	,1-Oxybisbutane 142-96-1]	; C ₈ H ₁₈ O;		
VARIABI	LES:		PREPARED BY:	
T/K =	T/K = 298, Solvent composition		W.E. Acree, Jr., P.R. Naidu and J.W. McCargar	
EXPERINT $t = 2!$	MENTAL VALUES ^a 5.0 °C			
×	3 3	<i>x</i> 3	×1	
0.	.0000	0.0000	0.00472	
ο.	.1589	0.1582	0.00439	
о.	.2667	0.2656	0.00424	
	.4445	0.4427	0.00396	
	.5711	0.5689	0.00385	
	.6675	0.6650	0.00375	
	.7560	0.7532	0.00368	
	.8169	0.8139	0.00366	
	.9019	0.8986 0.9965	0.00361	
fı	<pre>x₃^(s): initial r raction solubil he ternary solu</pre>	ity of the solute; x3:	solvent mixture; $x_i$ : mole mole fraction of component 3 in	
fı	raction solubil	ity of the solute; x3:	solvent mixture; $x_1$ : mole mole fraction of component 3 in	
fı	raction solubil	ity of the solute; x3: tion.	Bolvent mixture; x ₁ : mole mole fraction of component 3 in ( INFORMATION	
	raction solubil	ity of the solute; x ₃ : tion. AUXILIAR	mole fraction of component 3 in	
fi th METHOD: Consta thermo	raction solubil he ternary solu : APPARATUS/PRO ant temperature	ity of the solute; x ₃ : tion. AUXILIAR	mole fraction of component 3 in TINFORMATION	
fi th METHOD: Consta thermos Binary weight in amb	raction solubil he ternary solu : APPARATUS/PRO ant temperature ometer, and an rophotometer. y solvent mixtu t. Excess solut ber glass bottl	ity of the solute; x ₃ : tion. AUXILIARS CEDURE bath, calorimetric ultraviolet/visible res were prepared by e and solvent placed es and allowed to	<pre>mole fraction of component 3 in     INFORMATION     SOURCE AND PURITY OF MATERIALS:    (1) Gold Label, 99.9+ %, Aldrich Chemical    Company, Milwaukee, Wisconsin, USA,     used as received.    (2) 99 %, Aldrich Chemical Company, used     as received.</pre>	
METHOD: Consta thermo spect: Binary weight in amb equili temper was ve measur brium satura a coar flasks chlorc	: APPARATUS/PRO ant temperature ometer, and an rophotometer. y solvent mixtu t. Excess solut ber glass bottl ibrate for seve rature. Attain erified by seve rements and by from supersatu ated solutions rse filter into s, weighed and omethane. Conc mined spectroph	Lity of the solute; x ₃ : tion. AUXILIARN CEDURE bath, calorimetric ultraviolet/visible res were prepared by e and solvent placed es and allowed to ral days at constant ment of equilibrium	<pre>mole fraction of component 3 in  TINFORMATION  SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company, used</pre>	

Components :		ORIGINAL MEASUREMENTS:	
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]		Procyk, A.D.; Bissell, M.; Street, K.W.,	
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]		Jr.; Acree, W.E., Jr. J. Pharm. Sci. <u>1987</u> , 76, 621-626.	
(3) 1,4-Dioxane; C ₄ H ₈ O ₂ ; [123-91-1]		J. Pharm. Sci. <u>1987</u> , 76, 621-626.	
VARIABLES:		PREPARED BY:	
T/K = 298, Solvent composition		W.E. Acree, Jr.	
SIPERIMENTAL VALU t = 25.0 °C	ES ^a	₽	
x3 ^(s)	<b>x</b> 3	×1	
0.000	0.0000	0.001273	
0.1503	0.1500	0.002216	
0.2837	0.2828	0.003292	
0.5034	0.5007	0.005325	
0.5089	0.5062	0.005381	
0.6036	0.5997	0.006383	
0.6044	0.6005	0.006438	
0.6953	0.6902	0.007337	
0.6988	0.6936	0.007371	
0.8581	0.8508	0.008562	
0.8615	0.8541	0.008563	
1.0000	0.9916	0.008381	
		TNFORMATTON	
	cure bath, calorimetric an ultraviolet/visible	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.	
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.		<ul> <li>(2) 99 %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.8 %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled short) before use.</li> </ul>	

COMPONENTS: ORIGINAL MEASUREMENTS: Procyk, A.D.; Bissell, M.; Street, K.W., Jr.; Acree, W.E., Jr. (1) Anthracene; C1/H10; [120-12-7] (2) n-Heptane; C₇H₁₆; [142-82-5] J. Pharm. Sci. 1987, 76, 621-626. (3) 1,4-Dioxane; C₄H₈O₂; [123-91-1] VARIABLES: PREPARED BY: T/K = 298, Solvent composition W.E. Acree, Jr. EXPERIMENTAL VALUES⁸ t = 25.0 °Cx₇(s) *x*3 x, 0.001568 0.0000 0.0000 0.1573 0.1569 0.002482 0.3048 0.3037 0.003610 0.5286 0.5256 0.005723 0.6381 0.6338 0.006797 0.7181 0.7127 0.007586 0.8733 0.8659 0.008482 1.0000 0.9916 0.008381 ^a  $x_{\tau}^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_{\tau}$ : mole fraction solubility of the solute;  $x_3$ : mole fraction of component 3 in the ternary solution. AUXILIARY INFORMATION SOURCE AND PURITY OF MATERIALS: METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. spectrophotometer. Binary solvent mixtures were prepared by (2) HPLC Grade, 99+ %, Aldrich Chemical weight. Excess solute and solvent placed Company. in amber glass bottles and allowed to equilibrate for several days at constant (3) HPLC Grade, 99.8 %, Aldrich Chemical temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili-Attainment of equilibrium Company. Components 2 and 3 stored over molecular sieves and distilled shortly brium from supersaturation. Aliquots of saturated solutions transferred through before use. a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophotometrically at 356 nm. ESTIMATED ERRORS:  $T/K: \pm 0.05.$  $x_3^{(s)}: \pm 0.0001.$  $x_1: \pm 1$  % (relative error).

	ORIGINAL MEASUREMENTS:
COMPONENTS:	Procyk, A.D.; Bissell, M.; Street, K.W.,
(1) Anthracene; $C_{14}H_{10}$ ; [120-12-7] (2) n-Octane; $C_8H_{18}$ ; [111-65-9]	Jr.; Acree, W.E., Jr.
(2) 1,4-Dioxane; C _g H ₈ O ₂ ; [123-91-1]	J. Pharm. Sci. <u>1987</u> , 76, 621-626.
(0) 1) 1 220 x 210 2 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EIPERIMENTAL VALUES ^a t = 25.0 °C	
x ₃ ^(s) x ₃	×1
0.0000 0.0000	0.001836
0.1841 0.1836	0.002903
0.3295 0.3282	0.004040
0.5568 0.5534	0.006131
0.6555 0.6509	0.007042
0.7432 0.7374	0.007808
0.8813 0.8735	0.008815
0.9406 0.9326	0.008519
1.0000 0.9916	0.008381
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	<ul> <li>Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> </ul>
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	(2) Gold Label, 99+ %, Aldrich Chemical Company.
in amber glass bottles and allowed to equilibrate for several days at constant	(3) HPLC Grade, 99.8 %, Aldrich Chemical
temperature. Attainment of equilibrium was verified by several repetitive	Company.
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$T/K: \pm 0.05.$ $x_3^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

```
ORIGINAL MEASUREMENTS:
COMPONENTS:
                                                              Procyk, A.D.; Bissell, M.; Street, K.W.,
 (1) Anthracene; C14H10; [120-12-7]
                                                              Jr.; Acree, W.E., Jr.
 (2) Cyclohexane; C<sub>6</sub>H<sub>12</sub>; [110-82-7]
                                                              J. Pharm. Sci. 1987, 76, 621-626.
 (3) 1,4-Dioxane; C<sub>4</sub>H<sub>8</sub>O<sub>2</sub>; [123-91-1]
VARIABLES:
                                                             PREPARED BY:
 T/K = 298, Solvent composition
                                                              W.E. Acree, Jr.
EXPERIMENTAL VALUES<sup>a</sup> t = 25.0 °C
      x<sub>7</sub>(s)
                              x3
                                                              \boldsymbol{x}_1
      0.0000
                              0.0000
                                                              0.001551
      0.1338
                              0.1334
                                                              0.002676
      0.2471
                              0.2461
                                                              0.003883
      0.4557
                              0.4529
                                                              0.006194
      0.5574
                              0.5534
                                                              0.007125
      0.6580
                              0.6527
                                                              0.008052
      0.7381
                              0.7319
                                                              0.008408
      0.8399
                              0.8323
                                                              0.009073
      0.9087
                              0.9008
                                                              0.008688
      1.0000
                              0.9916
                                                              0.008381
      <sup>a</sup> x_3^{(s)}: initial mole fraction of binary solvent mixture; x_1: mole fraction solubility of the solute; x_3: mole fraction of component 3 in
      the ternary solution.
                                              AUXILIARY INFORMATION
METHOD: APPARATUS/PROCEDURE
                                                             SOURCE AND PURITY OF MATERIALS:

    Gold Label, 99.9+ %, Aldrich Chemical
Company, Milwaukee, Wisconsin, USA,
used as received.

 Constant temperature bath, calorimetric
 thermometer, and an ultraviolet/visible spectrophotometer.
 Binary solvent mixtures were prepared by weight. Excess solute and solvent placed
                                                              (2) HPLC Grade, 99.9 %, Aldrich Chemical
                                                                   Company.
 in amber glass bottles and allowed to
 equilibrate for several days at constant
                                                              (3) HPLC Grade, 99.8 %, Aldrich Chemical
                  Attainment of equilibrium
 temperature.
                                                                   Company.
was verified by several repetitive
measurements and by approaching equili-
                                                                   Components 2 and 3 were stored over
brium from supersaturation. Aliquots of
                                                                   molecular sieves and distilled shortly
 saturated solutions transferred through
                                                                   before use.
 a coarse filter into tared volumetric flasks, weighed and diluted with methanol.
Concentrations determined spectrophoto-
metrically at 356 nm.
                                                            ESTIMATED ERRORS:
                                                              T/K: \pm 0.05.
x_3^{(s)}: \pm 0.0001.
x_1: \pm 1 % (relative error).
```

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	$C_{14}H_{10}; [120-12-7]$	Procyk, A.D.; Bissell, M.; Street, K.W., Jr.; Acree, W.E., Jr.
<pre>(2) Methylcyclohexane; C₇H₁₄; [108-87-2] (3) 1,4-Dioxane; C₄H₈O₂; [123-91-1]</pre>		J. Pharm. Sci. <u>1987</u> , 76, 621-626.
VARIABLES:		PREPARED BY:
T/K = 298, Solve	ont composition	W.E. Acree, Jr.
EXPERIMENTAL VALU t = 25.0 °C	ES ^â	· · · · · · · · · · · · · · · · · · ·
x3 ^(s)	×3	×1
0.0000	0.0000	0.001652
0.1425	0.1421	0.002799
0.2660	0.2650	0.003913
0.5008	0.4977	0.006250
0.5999	0.5956	0.007165
0.6912	0.6857	0.007937
0.7712	0.7647	0.008466
0.8529	0.8454	0.008813
0.9205	0.9125	0.008640
1.0000 ^a x ₃ ^(s) ; init: fraction sol the ternary	0.9916 Lal mole fraction of binary ubility of the solute; x ₃ : r solution.	0.008381 solvent mixture; x ₁ : mole mole fraction of component 3 in
^a x ₃ ^(s) : initi fraction sol	Lal mole fraction of binary ubility of the solute; $x_2$ :	solvent mixture; x.: mole
^a x ₃ ^(s) : initi fraction sol	<pre>lal mole fraction of binary ubility of the solute; x₃: r solution.</pre>	solvent mixture; x.: mole
a _{X3} (s): init: fraction solution the ternary	Lal mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY	solvent mixture; x ₁ : mole mole fraction of component 3 in
<pre>a x₃(s); init; fraction sol the ternary METHOD: APPARATUS Constant tempera</pre>	Lal mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS:
<ul> <li>* x₃(s); init; fraction sol the ternary</li> <li>************************************</li></ul>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.
<pre>a x₃(s); initi fraction sol the ternary the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. Att</pre>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.
<pre>a x₃(s); init; fraction sol the ternary the ternary METHOD: APPARATUS Constant tempera: thermometer, and spectrophotomete; Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At; was verified by measurements and brium from super saturated soluti a coarse filter; flasks, weighed is</pre>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol.	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company. (3) HPLC Grade, 99.8 %, Aldrich Chemical
<pre>a x₃(s); init; fraction sol the ternary the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete. Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated solution a coarse filter : flasks, weighed Concentrations do</pre>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol.	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company. (3) HPLC Grade, 99.8 %, Aldrich Chemical Components 2 and 3 were stored over molecular sieves and distilled short

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COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Procyk, A.D.; Bissell, M.; Street, K.W.,
<pre>(2) 2,2,4-Trimethylpentane; C₈H₁₈; [540-84-1]</pre>	Jr.; Acree, W.E., Jr. J. Pharm. Sci. <u>1987</u> , 76, 621-626.
(3) 1,4-Dioxane; C ₄ H ₈ O ₂ ; [123-91-1]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 25.0  ^{\circ}C$	
x ₁ ^(s) x ₁	x,
0.0000 0.0000	0.001067
0.1886 0.1882	0.001927
0.3320 0.3310	0.002891
0.5566 0.5539	0.004903
0.6594 0.6555	0.005988
0.7491 0.7439	0.006942
0.8850 0.8778	0.008121
1.0000 0.9916	0.008381
AUXILIAR	Y INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	(2) HPLC Grade, 99.7 %, Aldrich Chemical Company.
in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive	(3) HPLC Grade, 99.8 %, Aldrich Chemical Company.
Map Astitica by peactar tenscities	Components 2 and 2 years should super
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	before use.
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	molecular sieves and distilled shortly before use.

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene; (	C ₁₄ H ₁₀ ; [120-12-7]	Procyk, A.D.; Bissell, M.; Street, K.W., Jr.; Acree, W.E., Jr.
(2) Cyclooctane;	C ₈ H ₁₆ ; [292-64-8]	J. Pharm. Sci. <u>1987</u> , 76, 621-626.
(3) 1,4-Dioxane; C ₄ H ₈ O ₂ ; [123-91-1]		
VARIABLES:		PREPARED BY:
T/K = 298, Solve:	nt composition	W.E. Acree, Jr.
EXPERIMENTAL VALUE t = 25.0 °C	gg ^a	<u>+</u>
x3 ^(s)	x3	×1
0.0000	0.0000	0.002251
0.1497	0.1492	0.003654
0.2855	0.2840	0.005122
0.5078	0.5040	0.007462
0.6128	0.6077	0.008338
0.7008	0.6946	0.008896
0.7842	0.7769	0.009281
0.8580	0.8500	0.009339
0.9329	0.9246	0.008893
1.0000 ^a x ₃ ^(s) : initi fraction solu the ternary s	0.9916 al mole fraction of binary bility of the solute; $x_3$ : nolution.	0.008381 solvent mixture; x ₁ : mole mole fraction of component 3 in
a x ₃ ^(s) : initi fraction solu	al mole fraction of binary bility of the solute; $x_3$ :	solvent mixture; x.: mole
a x ₃ ^(s) : initi fraction solu	al mole fraction of binary bility of the solute; $x_3$ : nolution.	solvent mixture; x.: mole
<pre>* x₃^(s): initi fraction solu the ternary s</pre>	al mole fraction of binary ibility of the solute; x ₃ : n solution. AUXILIARY	Bolvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION
<pre>* x₃^(S): initi fraction solu the ternary s the ternary s ETHOD: APPARATUS/ Constant temperat</pre>	al mole fraction of binary ability of the solute; x ₃ : n solution. AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF WATERIALS:
<ul> <li>x₃⁽⁵⁾: initi fraction solution the ternary solution</li> <li>ETHOD: APPARATUS/</li> <li>Constant temperation</li> <li>Constant temperation</li> <li>Spectrophotometer</li> <li>Binary solvent mi weight. Excess so</li> </ul>	al mole fraction of binary ibility of the solute; x ₃ : r solution. AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
* x ₃ ⁽⁵⁾ : initi fraction solu the ternary s ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Atta	al mole fraction of binary bility of the solute; x ₃ : r solution. AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant inment of equilibrim	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, Aldrich Chemical
ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Atta was verified by s measurements and brium from supers saturated solutio a coarse filter ii flasks, weighed a Concentrations de	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant inment of equilibrim everal days at constant inment of equilibrim everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.8 %, Aldrich Chemical</pre>
* x ₃ ^(S) : initi fraction solu the ternary solution the ternary solution the ternary solution the ternary solution (Constant temperature) thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for solution temperature. Atta was verified by so measurements and brium from superson saturated solution a coarse filter if flasks, weighed a	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant inment of equilibrim everal days at constant inment of equilibrim everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.8 %, Aldrich Chemical Company. (3) HPLC Grade, 99.8 %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortl</pre>

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Bissell, M.; Chittick, C.E.; Acree, W.E., Jr.
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]	Fluid Phase Equilibr. <u>1988</u> , <b>41</b> , 187-194.
(3) Tetrahydropyran; C ₅ H ₁₀ O; [142-68-7]	· · · · · · · · · · · · · · · · · · ·
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25.0 °C	
x2 ^(s) x2	×1
0.0000 0.0000	0.01024
0.1507 0.1495	0.00781 ·
0.3320 0.3301	0.00568
0.4242 0.4222	0.00474
0.5194 0.5173	0.00397
0.7431 0.7413	0.00243
0.8686 0.8670	0.00175
1.0000 0.9987	0.00127
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	<ol> <li>Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>99 %, Aldrich Chemical Company.</li> </ol>
in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	<ul> <li>(3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>
	ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₂ H ₁₀ ; [120-12-7]	Bissell, M.; Chittick, C.E.; Acree, W.E.,
(1) Anthracene; $C_{14}n_{10}$ ; [120-12-7] (2) n-Heptane; $C_{7}H_{16}$ ; [142-82-5]	Jr.
(2) n-neptane; $C_{7n16}$ , $[142-52-5]$ (3) Tetrahydropyran; $C_{2}H_{10}O_{3}$	Fluid Phase Equilibr. <u>1988</u> , 41, 187-194.
[142-68-7]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25.0 °C	
$x_2^{(s)}$ $x_2$	x ₁
0.0000 0.0000	0.01024
0.1472 0.1460	0.00786
0.3076 0.3058	0.00593
0.3970 0.3950	0.00499
0.5001 0.4980	0.00411
0.7269 0.7609	0.00262
0.8551 0.8533	0.00207
1.0000 0.9984	0.00157
AUXILIAR	Y INFORMATION
ETHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to	(2) HPLC Grade, 99+ %, Aldrich Chemical Chemical Company.
equilibrate for several days at constant temperature. Attainment of equilibrium	(3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company.
was verified by several repetitive	
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	before use.
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol.	molecular sieves and distilled shortly before use.
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	molècular sieves and distilled shortly before use.

ORIGINAL MEASUREMENTS: COMPONENTS: Bissell, M.; Chittick, C.E.; Acree, W.E., (1) Anthracene; C14H10; [120-12-7] Jr. (2) n-Octane; C₈H₁₈; [111-65-9] Fluid Phase Equilibr. 1988, 41, 187-194. (3) Tetrahydropyran; C₅H₁₀O; [142-68-7] PREPARED BY: VARTABLES: W.E. Acree, Jr. T/K = 298, Solvent composition EXPERIMENTAL VALUES⁸ t = 25.0 °Cx2(s) **x**2 × 0.0000 0.01024 0.0000 0.1409 0.1398 0.00794 0.2829 0.2812 0.00614 0.3801 0.3781 0.00521 0.4727 0.4706 0.00444 0.7009 0.7030 0.00300 0.8344 0.8324 0.00237 1.0000 0.9982 0.00184 ^a  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_2$ : mole fraction of component 2 in the ternary solution. AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE SOURCE AND PURITY OF MATERIALS: Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA Constant temperature bath, calorimetric thermoeter, and an ultraviolet/visible spectrophotometer. used as received. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium (2) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. was verified by several repetitive measurements and by approaching equili-Components 2 and 3 were stored over molecular sieves and distilled shortly brium from supersaturation. Aliquots of saturated solutions transferred through before use. a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-metrically at 356 nm. . ESTIMATED ERRORS:  $T/K: \pm 0.05.$  $x_2^{(s)}: \pm 0.0001.$  $x_1: \pm 1$  % (relative error). ,

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Anthracene; $C_{12}H_{10}$ ; [120-12-7]	Bissell, M.; Chittick, C.E.; Acree, W.E.,
(2) Cyclohexane; $C_{6}H_{12}$ ; [110-82-7]	Jr.
(3) Tetrahydropyran; $C_5H_{10}O_5$	Fluid Phase Equilibr. <u>1988</u> , 41, 187-194.
[142-68-7]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EIPERIMENTAL VALUES ^a t = 25.0 °C	
x ₂ ^(s) x ₂	x,
0.0000 0.0000	0.01024
0.1875 0.1860	0.00806
0.3767 0.3744	0.00601
0.3824 0.3801	0.00595
0.4685 0.4661	0.00515
0.4766 0.4742	0.00511
0.5738 0.5714	0.00424
0.5752 0.5728	0.00422
0.7795 0.7774	0.00272
0.8797 0.8778	0.00215
1.0000 0.9984	0.00155
the ternary solution.	
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	<ul> <li>Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> </ul>
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to	(2) HPLC Grade, 99.9 %, Aldrich Chemical Company.
equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive	(3) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Bissell, M.; Chittick, C.E.; Acree, W.E.;
(2) Methylcyclol	hexane; C ₇ H ₁₄ ;	Jr. Fluid Phase Equilibr. <u>1988</u> , 41, 187-194.
[108-87-2] (3) Tetrahydropyran; C ₅ H ₁₀ O;		
[142-68-7]		
VARIABLES:		PREPARED BY:
T/K = 298, Solve	ent composition	W.E. Acree, Jr.
EXPERIMENTAL VALU	UES ^a	<u></u>
z = 23.0 °C $x_2^{(s)}$	<b>x</b> ₂	<b>x</b> 1
0.0000	0.0000	0.01024
0.1666	0.1653	0.00806
0.3274	0.3254	0.00626
0.4336	0.4313	0.00527
0.5517	0.5493	0.00427
0.7467	0.7445	0.00295
0.8693	0.8673	0.00229
		0.00165
1.0000 ^a x ₂ ^(s) : init fraction so the ternary	0.9984 tial mole fraction of binary lubility of the solute; x ₂ : r solution.	0.00165 solvent mixture; x ₁ : mole mole fraction of component 2 in
a x ₂ ^(s) : init fraction so	tial mole fraction of binary lubility of the solute; $x_2$ :	solvent mixture; x,: mole
a x ₂ ^(s) : init fraction so	tial mole fraction of binary lubility of the solute; x ₂ : r solution.	solvent mixture; x,: mole
a x ₂ ^(s) : init fraction so	ial mole fraction of binary lubility of the solute; x ₂ : r solution.	solvent mixture; x ₁ : mole mole fraction of component 2 in
<pre>a x2^(s): init fraction so the ternary KETHOD: APPARATUS Constant tempera</pre>	Lial mole fraction of binary lubility of the solute; x ₂ : r solution. AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible	solvent mixture; x ₁ : mole nole fraction of component 2 in INFORMATION
<ul> <li>* x₂^(s): init fraction so the ternary</li> <li>(ETHOD: APPARATU: Constant temper: thermometer, and spectrophotometer</li> <li>Binary solvent mathematical</li> </ul>	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible pr. mixtures were prepared by	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous, Aldrich
* x2 ^(s) : init fraction so the ternary the ternary <b>XETHOD: APPARATUS</b> Constant tempers thermometer, and spectrophotomete Binary solvent r weight. Excess r in amber glass h equilibrate for	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich</pre>
* x2 ⁽³⁾ : init fraction so the ternary <b>XETHOD: APPARATU:</b> Constant temperat thermometer, and spectrophotometer Binary solvent r weight. Excess s in amber glass h equilibrate for temperature. At was verified by	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive	<pre>solvent mixture; x₁: mol@ mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company.</pre>
* x2 ⁽³⁾ : init fraction so the ternary the ternary XETHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent n weight. Excess s in amber glass I equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible pr. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive i by approaching equili- resturation. Aliquots of lons transferred through into tared volumetric and diluted with methanol. determined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over</pre>
<ul> <li>* x2⁽⁵⁾; init fraction so the ternary</li> <li>* The ter</li></ul>	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible pr. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive i by approaching equili- resturation. Aliquots of lons transferred through into tared volumetric and diluted with methanol. determined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled short] before use.</pre>
<ul> <li>* x2⁽⁵⁾; init fraction so the ternary</li> <li>* The ter</li></ul>	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible pr. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive i by approaching equili- resturation. Aliquots of lons transferred through into tared volumetric and diluted with methanol. determined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled short1 before use. ESTIMATED ERRORS: T/K: + 0.05.</pre>
<ul> <li>* x2⁽⁵⁾; init fraction so the ternary</li> <li>* The ter</li></ul>	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible pr. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive i by approaching equili- resturation. Aliquots of lons transferred through into tared volumetric and diluted with methanol. determined spectrophoto-	<pre>solvent mixture; x,: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled short1 before use. ESTIMATED ERRORS:</pre>

COMPONENTS:		ORIGINAL MEASUREMENTS:	
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Bissell, M.; Chittick, C.E.; Acree, W.E., Jr.	
(2) 2,2,4-Trimet [540-84-1]	hylpentane; C ₈ H ₁₈ ;	Fluid Phase Equilibr. <u>1988</u> , 41, 187-194.	
<pre>(3) Tetrahydropyran; C₅H₁₀O; [142-68-7]</pre>			
VARIABLES:		PREPARED BY:	
T/K = 298, Solve	nt composition	W.E. Acree, Jr.	
EXPERIMENTAL VALU	ES ^a	4	
$x_{2}^{(s)}$	x,	x1	
0.0000	0.0000	0.01024	
0.1398	0.1388	0.00738	
0.2860	0.2845	0.00525	
0.3731	0.3715	0.00429	
0.4556	0.4540	0.00360	
0.6893	0.6878	0.00211	
0.8380	0.8368	0.00148	
1.0000	0.9989	0.00107	
fraction sol the ternary	ubility of the solute; x2: 1	solvent mixture; x _i : mole mole fraction of component 2 in	
fraction sol	ubility of the solute; x2: 1	solvent mixture; x ₁ : mole mole fraction of component 2 in	
fraction sol	ubility of the solute; x ₂ : 1 solution.	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION	
fraction sol the ternary	ubility of the solute; x ₂ : n solution. AUXILIARY	INFORMATION SOURCE AND PURITY OF MATERIALS:	
fraction sol the ternary ETHOD: APPARATUS, Constant temperat	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	INFORMATION	
fraction sol the ternary ETHOD: APPARATUS, Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. Lixtures were prepared by plute and solvent placed	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,	
fraction sol the ternary <b>GETHOD: APPARATUS</b> , Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass be equilibrate for f	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by plute and solvent placed ottles and allowed to several days at constant	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7 %, Aldrich Chemical	
fraction sol the ternary ETHOD: APPARATUS, Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for temperature. At was verified by s measurements and brium from supers saturated solution a coarse filter i flasks, weighed a Concentrations de	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f. Lxtures were prepared by obtles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. stermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous Aldrich Chemical Company. Components 2 and 3 were stored over</pre>	
fraction sol the ternary The ternary	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f. Lxtures were prepared by obtles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. stermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortl</pre>	
<b>GETHOD:</b> APPARATUS, Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass be equilibrate for s temperature. At was verified by s measurements and brium from supers saturated solutio a coarse filter if flasks, weighed a	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f. Lxtures were prepared by obtles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. stermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) Gold Label, 99+ %, anhydrous Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortl before use.</pre>	

COMPONENTS:		ORIGINAL MEASUREMENTS:	
(1) Anthracene; (	2 ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.	
(2) n-Hexane; C ₆ H	14; [110-54-3]	Phys. Chem. Liq. <u>1989</u> , 19, 73-79.	
<pre>(3) Tetrachloromethane; CCl₄; [56-23-5]</pre>			
VARIABLES:		PREPARED BY:	
T/K = 298, Solver	nt composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker	
EXPERIMENTAL VALUE $t = 25.0 ^{\circ}C$	:S ^a		
x2 ^(s)	<b>x</b> 2	×1	
0.0000	0.0000	0.00464	
0.1585	0.1579	0.00378	
0.3229	0.3219	0.00299	
0.4318	0.4307	0.00257	
0.5303	0.5291	0.00226	
0.7356	0.7343	0.00176	
0.8631	0.8618	0.00150	
1.0000	0.9987	0.00127	
the ternary s	bility of the solute; x ₂ ; r olution.	solvent mixture; x ₁ : mole mole fraction of component 2 in	
the ternary a	bility of the solute; x ₂ ; r olution.	nole fraction of component 2 in	
Traction solu the ternary s	olution.	INFORMATION	
the ternary e (ETHOD: APPARATUS/ Constant temperat	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible	INFORMATION SOURCE AND PURITY OF MATERIALS:	
ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks, weighed a Concentrations de	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant ainment of equilibrium everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemical Company. Components 2 and 3 were stored over</pre>	
<b>GETHOD: APPARATUS/</b> Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. At was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks, weighed a	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant ainment of equilibrium everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99 %, Aldrich Chemical Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly</pre>	

COMPO	onents :		ORIGINAL MEASUREMENTS:	
(1)	Anthracene; C	14 ^H 10; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.	
(2)	n-Heptane; C7	H ₁₆ ; [142-82-5]	Phys. Chem. Liq. <u>1989</u> , 19, 73-79.	
(3)	<pre>3) Tetrachloromethane; CCl₄; [56-23-5]</pre>			
VARI	ABLES:		PREPARED BY:	
T/K	= 298, Solven	t composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker	
	RIMENTAL VALUE 25.0 °C	'S ^a		
	x2 ^(s)	×2	×1	
	0.0000	0.0000	0.00464	
	0.1492	0.1486	0.00380	
	0.3062	0.3052	0.00311	
	0.3935	0.3924	0.00281	
	0.4941	0.4929	0.00250	
	0.7096	0.7082	0.00201	
	0.8448	0.8433	0.00178	
	1.0000	0.9984	0.00157	
	a _{x2} ^(s) : initi fraction solu the ternary s		solvent mixture; x ₁ : mole mole fraction of component 2 in	
	fraction solu	bility of the solute; x ₂ : n olution.	nole fraction of component 2 in	
	fraction solu	bility of the solute; x ₂ : n olution.	INFORMATION	
Cons then spec Bina weig in a equi temp was briv satu a co flas Conc	ob: APPARATUS/ stant temperat rmometer, and ctrophotometer ary solvent mi ght. Excess so ilibrate for s perature. Att verified by s surements and um from supers urated solutio barse filter i sks, weighed a	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible xtures were prepared by lute and solvent placed ttles and allowed to everal days at constant ainment of equilibrium everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	nole fraction of component 2 in	

		ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [12	20-12-7]	Tucker, S.A.; Acree, W.E., Jr.
(2) n-Octane; C ₈ H ₁₈ ; [111-6	65-9]	Phys. Chem. Liq. <u>1989</u> , 19, 73-79.
<pre>(3) Tetrachloromethane; CC [56-23-5]</pre>	214;	
VARIABLES:		PREPARED BY:
T/K = 298, Solvent composi	ition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALUES ^a t = 25.0 °C		
$x_2^{(s)}$ $x_2$		x ₁
0.0000 0.00	000	0.00464
0.1343 0.13	338	0.00392
0.2818 0.28	309	0.00330
0.3672 0.36	561	0.00302
0.4743 0.47	730	0.00268
0.6934 0.69	918	0.00225
0.8407 0.83	90	0.00205
1.0000 0.99	82	0.00184
	AUXILIARY	INFORMATION
TETHOD: APPARATUS/PROCEDURE		INFORMATION SOURCE AND PURITY OF MATERIALS:
GETHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and an ultrav spectrophotometer.	; calorimetric	T
Constant temperature bath, thermometer, and an ultraw spectrophotometer. Binary solvent mixtures we weight. Excess solute and	calorimetric riolet/visible pre prepared by solvent placed	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,
Constant temperature bath, thermometer, and an ultraw spectrophotometer. Binary solvent mixtures we weight. Excess solute and in amber glass bottles and equilibrate for several da temperature. Attainment of	calorimetric riolet/visible pre prepared by solvent placed l allowed to ys at constant of equilibrium	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> </ul>
Constant temperature bath, thermometer, and an ultraw spectrophotometer. Binary solvent mixtures we weight. Excess solute and in amber glass bottles and equilibrate for several da	calorimetric violet/visible ere prepared by solvent placed l allowed to bys at constant of equilibrium opetitive iching equili- a. Aliquots of erred through l volumetric d with methanol.	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical</li> </ul>
Constant temperature bath, thermometer, and an ultray spectrophotometer. Binary solvent mixtures we weight. Excess solute and in amber glass bottles and equilibrate for several da temperature. Attainment of was verified by several re measurements and by approa brium from supersaturation saturated solutions transf a coarse filter into tared flasks, weighed and dilute Concentrations determined	calorimetric violet/visible ere prepared by solvent placed l allowed to bys at constant of equilibrium opetitive iching equili- a. Aliquots of erred through l volumetric d with methanol.	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, USA, used as received.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortl</li> </ul>

Components:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.
(2) Cyclohexane;	C ₆ H ₁₂ ; [110-82-7]	Phys. Chem. Liq. <u>1989</u> , 19, 73-79.
(3) Tetrachlorom [56-23-5]	ethane; CCl ₄ ;	
VARIABLES:		PREPARED BY:
T/K = 298, Solve:	nt composition	W.E. Acree, Jr., P.R. Naidu and S. A. Tucker
EXPERIMENTAL VALU t = 25.0 °C	ES ^a	
x2 ^(s)	*2	<i>*</i> 1
0.0000	0.0000	0.00464
0.1847	0.1840	0.00387
0.3702	0.3690	0.00318
0.4715	0.4702	0.00285
0.5722	0.5707	0.00254
0.8245	0.8229	0.00191
1.0000	0.9984	0.00155
the ternary a		mole fraction of component 2 in
		mole fraction of component 2 in
	30lution.	INFORMATION
the ternary a	AUXILIARY	
the ternary : METHOD: APPARATUS/ Constant temperat	AUXILIARY PROCEDURE ure bath, calorimetric an ultraviolet/visible	INFORMATION
<b>(ETHOD: APPARATUS/</b> Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks. weiched a	AUXILIARY PROCEDURE Sure bath, calorimetric an ultraviolet/visible with and solvent placed by blute and solvent placed ottles and allowed to everal days at constant ainment of equilibrium everal repetitive by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA,

(1) Anthracene; $C_{14}H_{10}$ ; [120-12-7]	ORIGINAL MEASUREMENTS:
(2) Nothelandlohorsport CH -	Tucker, S.A.; Acree, W.E., Jr.
<pre>(2) Methylcyclohexane; C₇H₁₆; [108-87-2]</pre>	Phys. Chem. Liq. <u>1989</u> , 19, 73-79.
<pre>(3) Tetrachloromethane; CCl₄; [56-23-5]</pre>	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALUES ⁸ t = 25.0 °C	
x2 ^(s) x2	×1
0.0000 0.0000	0.00464
0.1921 0.1914	0.00373
0.3341 0.3330	0.00318
0.4282 0.4270	0.00289
0.5316 0.5302	0.00262
0.7452 0.7436	0.00212
0.8536 0.8520	0.00190
1.0000 0.9983	0.00165
AUXILIARY	INFORMATION
	INFORMATION SOURCE AND PURITY OF MATERIALS:
	Γ
ETHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica: Company, Milwaukee, Wisconsin, USA, used as received.
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.</li> </ul>
<b>(ETHOD: APPARATUS/PROCEDURE</b> Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over</li> </ul>
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and solvent placed equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ %, anhydrous Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled short)</li> </ul>

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Tucker, S.A.; Acree, W.E., Jr.
<ul> <li>(2) 2,2,4-Trimethylpentane; C₇H₁₆; [540-84-1]</li> <li>(3) Tetrachloromethane; CCl₄; [56-23-5]</li> </ul>		Phys. Chem. Liq. <u>1989</u> , 19, 73-79.
T/K = 298, Solvent composition		W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALU t = 25.0 °C	JES ⁸	
x2 ^(s)	*2	×1
0.0000	0.0000	0.00464
0.1069	0.1065	0.00379
0.2791	0.2783	0.00285
0.3652	0.3643	0.00249
0.4633	0.4623	0.00214
0.6890	0.6879	0.00157
0.8367	0.8356	0.00130
1.0000 ^a x ₂ ^(s) : init; fraction sol the ternary ;		0.00107 Solvent mixture; x ₁ : mole mole fraction of component 2 in
a x2 ^(s) : initi fraction sol	ial mole fraction of binary ubility of the solute; $x_2$ :	solvent mixture; x.: mole
a x2 ^(s) : initi fraction sol	ial mole fraction of binary ubility of the solute; x ₂ : 1 solution.	solvent mixture; x.: mole
a x ₂ (s); initi fraction solution the ternary	ial mole fraction of binary ubility of the solute; x ₂ : 1 solution. AUXILIARY	Solvent mixture; x ₁ : mole mole fraction of component 2 in
<pre>* x2^(s); initi fraction sol the ternary the ternary ETHOD: APPARATUS, Constant temperat thermometer, and</pre>	ial mole fraction of binary ubility of the solute; x ₂ : 1 solution. AUXILIARY /PROCEDURE cure bath, calorimetric an ultraviolet/visible	Bolvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS:
<ul> <li>* x2^(s): initian fraction solution the ternary</li> <li>ETHOD: APPARATUS,</li> <li>Constant temperate thermometer, and spectrophotometer</li> <li>Binary solvent minimum solvent mi</li></ul>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible c. ixtures were prepared by	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica
<ul> <li>a x2^(s): initian fraction solution the ternary of the ternary solution ternary solvent mixed the ternary s</li></ul>	AUXILIARY //PROCEDURE cure bath, calorimetric an ultraviolet/visible c. kutures were prepared by plute and solvent placed ottles and allowed to several days at constant	<pre>Solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemica</pre>
<ul> <li>a x2^(s): initian fraction solution the ternary of the ternary solution terms and the terms of terms of the terms of the terms of ter</li></ul>	AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible for kurres were prepared by oblute and solvent placed ottles and allowed to several days at constant ainment of equilibrium several capetitive by approaching equili- naturation. Aliquots of ons transferred through nto tared volumetric and diluted with methanol. termined spectrophoto-	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica
<pre>* x2^(s): initi fraction sol the ternary the ternary ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for so temperature. Att was verified by so measurements and brium from superso saturated solutio a coarse filter i flasks, weighed a</pre>	AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible for kurres were prepared by oblute and solvent placed ottles and allowed to several days at constant ainment of equilibrium several capetitive by approaching equili- naturation. Aliquots of ons transferred through nto tared volumetric and diluted with methanol. termined spectrophoto-	<pre>Solvent mixture; x₁: mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemica Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemica Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemica Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemica Company. Components 2 and 3 were stored over molecular sieves and distilled short</pre>

COMPONENTS:	ORIGINAL MEASUREMENTS:	
(1) Anthracene; C _{1/} H ₁₀ ; [120-12-7]	Acree, W.E., Jr.	
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]	J. Solution Chem. <u>1991</u> , 20, 307-318.	
(3) 1-Chlorobutane; C ₄ H ₉ Cl; [109-63-3]		
VARIABLES:	PREPARED BY:	
T/K = 298, Solvent composition	W.E. Acree, Jr.	
EXPERIMENTAL VALUES ⁶ t = 25.0 °C	ļ	
x ₃ ^(s) x ₃	x,	
0.0000 0.0000	0.00127	
0.1296 0.1294	0.00165	
0.2389 0.2384	0.00204	
0.4512 0.4499	0.00290	
0.5521 0.5502	0.00340	
0.6629 0.6603	0.00399	
0.8358 0.8316	0.00497	
0.9211 0.9161	0.00538	
1.0000 0.9941	0.00586	
AUXILIARY	INFORMATION	
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:	
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	<ul> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> </ul>	
Binary solvent mixtures were prepared by	(2) 99+ mole %, Aldrich Chemical Company.	
weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium	(3) HPLC Grade, 99.5+ %, Aldrich Chemical Company.	
was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.	
	ESTIMATED ERRORS:	
	$T/K: \pm 0.05.$ $x_3^{(5)}: \pm 0.0001.$ $x_1: \pm 1.5 $ (relative error).	

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.
(2) n-Heptane;	C ₇ H ₁₆ ; [142-82-5]	J. Solution Chem. <u>1991</u> , 20, 307-318.
(3) 1-Chlorobut [109-63-3]	ane; C ₄ H ₉ Cl;	
VARIABLES:		PREPARED BY:
T/K = 298, Solv	rent composition	W.E. Acree, Jr.
EXPERIMENTAL VAL t = 25.0 °C	JUES ^a	• · · · · · · · · · · · · · · · · · · ·
x3 ^(s)	x3	<i>x</i> 1
0.0000	0.0000	0.00157
0.1537	0.1534	0.00200
0.2705	0.2699	0.00240
0.4799	0.4784	0.00322
0.5860	0.5838	0.00370
0.6737	0.6709	0.00415
0.8489	0.8447	0.00500
0.9235	0.9185	0.00542
1.0000	0.0044	0.00586
^a x ₃ ^(S) : init	0.9941 tial mole fraction of binary lubility of the solute; $x_3$ : r solution.	
^a x ₃ ^(s) : init fraction bo	ial mole fraction of binary lubility of the solute; x3: 1	solvent mixture; x,: mole
^a x ₃ ^(s) : init fraction bo	ial mole fraction of binary lubility of the solute; x3: 1 solution.	solvent mixture; x,: mole
^a x ₃ ^(s) : init fraction bo	ial mole fraction of binary lubility of the solute; x ₃ : r solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND FURITY OF MATERIALS:
<pre>a x₃(s): init fraction so the ternary ETHOD: APPARATUS Constant tempera thermometer, and</pre>	ial mole fraction of binary lubility of the solute; x ₃ : r solution. AUXILIARY S/PROCEDURE ature bath, calorimetric i an ultraviolet/visible	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND FURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received.
<ul> <li>* x3⁽⁵⁾; init fraction so the ternary</li> <li>ETHOD: APPARATUS</li> <li>Constant tempera thermometer, and spectrophotomete</li> <li>Binary solvent m weight. Excess s</li> </ul>	Lial mole fraction of binary lubility of the solute; x ₃ : r solution. AUXILIARY S/PROCEDURE ature bath, calorimetric i an ultraviolet/visible ar. mixtures were prepared by solute and solvent placed	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA.
<ul> <li>a x3⁽⁵⁾: init fraction so the ternary</li> <li>ETHOD: APPARATUS</li> <li>Constant temperation thermometer, and spectrophotometer</li> <li>Binary solvent m weight. Excess so in amber glass to equilibrate for temperature. At</li> </ul>	AUXILIARY AUXILIARY B/PROCEDURE ature bath, calorimetric d an ultraviolet/visible atures were prepared by solute and solvent placed pottles and allowed to several days at constant tainment of equilibrium	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99+ %, Aldrich Chemical Company.
<pre>* x3(s); init fraction so the ternary ETHOD: APPARATUS Constant tempers thermometer, and spectrophotometer Binary solvent m weight. Excess so weight. Excess so thermore glass t equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed</pre>	AUXILIARY AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible ar. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant tainment of equilibrium several repetitive d by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. letermined spectrophoto-	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica: Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemical

COMPONENTS:		ORIGINAL MEASUREMENTS:	
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.	
(2) n-Octane; C ₈	H ₁₈ ; [111-65-9]	J. Solution Chem. <u>1991</u> , 20, 307-318.	
(3) 1-Chlorobutane; C ₄ H ₉ Cl; [109-63-3]			
VARIABLES:		PREPARED BY:	
T/K = 298, Solve	nt composition	W.E. Acree, Jr.	
EXPERIMENTAL VALU t = 25.0 °C	ES ^a		
x ₃ ^(s)	<i>x</i> 3	<b>x</b> 1	
0.0000	0.0000	0.00184	
0.1632	0.1628	0.00230	
0.2815	0,2807	0.00267	
0.5035	0.5017	0.00348	
0.6092	0.6068	0.00390	
0.7039	0.7008	0.00435	
0.8602	0.8558	0.00510	
0.9200	0.9150	0.00539	
1.0000 ^a x ₃ ^(s) : initi fraction soluthe ternary	0.9941 Lal mole fraction of binary ubility of the solute; x ₃ : a solution.	0.00586 solvent mixture; x ₁ : mole mole fraction of component 3 in	
^a x ₃ ⁽⁵⁾ : initi fraction sol	al mole fraction of binary ubility of the solute; $x_{t}$ :	solvent mixture; x.: mole	
^a x ₃ ⁽⁵⁾ : initi fraction sol	al mole fraction of binary ubility of the solute; x ₃ : a solution.	solvent mixture; x.: mole	
a _{X3} (s): initi fraction solution the ternary	al mole fraction of binary ubility of the solute; x ₃ : a solution. AUXILIARY	solvent mixture; x ₁ : mole mole fraction of component 3 in	
<pre>* x₃(s): initi fraction sol the ternary #ETHOD: APPARATUS, Constant tempera</pre>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS:	
<ul> <li>* x₃⁽⁵⁾: initian fraction solution the ternary</li> <li>* the ternary</li> <li>* METHOD: APPARATUS,</li> <li>Constant temperation</li> <li>Constant temperation</li> <li>Spectrophotometer, and</li> <li>Binary solvent m.</li> </ul>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ % anhydrous, Aldrich Chemical	
<pre>* x₃^(s): initi fraction sol the ternary ************************************</pre>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ % anhydrous, Aldrich Chemical Company.	
<ul> <li>* x₃^(s): initial fraction solution fraction solution the ternary of the ternary solution.</li> <li>METHOD: APPARATUS, Constant temperature, and spectrophotometer, and spectrophotometer.</li> <li>Binary solvent m weight. Excess so in amber glass be equilibrate for temperature. Att was verified by a measurements and brium from super saturated solution a coarse filter of tasks, weighed a coarse filter of the temperature of the temperature of the temperature.</li> </ul>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica: Company, Milwaukee, Wisconsin, USA, used as received. (2) 99+ % anhydrous, Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemica:	

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]		J. Solution Chem. <u>1991</u> , 20, 307-318.
(3) 1-Chlorobuta [109-63-3]	nne; C ₄ H ₉ Cl;	
VARIABLES:		PREPARED BY:
T/K = 298, Solvent composition		W.E. Acree, Jr.
EXPERIMENTAL VALU t = 25.0 °C	ES ^a	•
×3 ^(S)	<i>x</i> ₃	x,
0.0000	0.0000	0.00155
0.1091	0.1089	0.00204
0.2094	0.2089	0.00253
0.4108	0.4094	0.00343
0.5124	0.5104	0.00393
0.6140	0.6113	0.00442
0.7964	0.7923	0.00516
0.8935	0.8886	0.00550
		0.00504
1.0000 ^a x ₃ ^(s) : initi fraction soluthe ternary	0.9941 Lal mole fraction of binary ubility of the solute; $x_3$ : m solution.	0.00586 solvent mixture; x ₁ : mole mole fraction of component 3 in
^a x ₃ ^(s) : init; fraction solu	ial mole fraction of binary ubility of the solute; $x_3$ : m	solvent mixture: x.: mole
^a x ₃ ^(s) : init; fraction solu	ial mole fraction of binary ubility of the solute; x3: m solution.	solvent mixture: x.: mole
^a x ₃ ^(s) : initi fraction solu	al mole fraction of binary ubility of the solute; x ₃ : n solution. AUXILIARY	solvent mixture; x ₁ : mole mole fraction of component 3 in
<pre>a x₃⁽⁵⁾: initi fraction solution the ternary f (ETHOD: APPARATUS/ Constant temperation)</pre>	AUXILIARY	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
<ul> <li>a x3⁽⁵⁾: initi fraction solution the ternary</li> <li>APPARATUS/ Constant temperati thermometer, and spectrophotometer</li> <li>Binary solvent mit</li> </ul>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f. ixtures were prepared by	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
<ul> <li>a x₃⁽⁵⁾: initi fraction solution the ternary</li> <li>APPARATUS/</li> <li>Constant temperation</li> <li>Constant temperation</li> <li>Constant spectrophotometer</li> <li>Binary solvent mines</li> <li>Bin</li></ul>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible c. ixtures were prepared by plute and solvent placed ottles and allowed to several days at constant animent of equilibrium	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</pre>
<ul> <li>a x3⁽⁵⁾: initian fraction solution the ternary of the ternary solution terms and the terms of terms of the terms of t</li></ul>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f. ixtures were prepared by plute and solvent placed obtles and allowed to several days at constant cainment of equilibrium several capetitive by approaching equili- naturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemical</pre>
<ul> <li>a x3⁽⁵⁾: initian fraction solution the ternary in the ternary solution terms and the terms and the terms of terms of the terms of terms of the terms of terms</li></ul>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f. ixtures were prepared by plute and solvent placed obtles and allowed to several days at constant cainment of equilibrium several capetitive by approaching equili- naturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled short1</pre>

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀	; [120-12-7]	Acree, W.E., Jr.
<pre>(2) Methylcyclohexane; C₇H₁₄; [108-87-2]</pre>		J. Solution Chem. <u>1991</u> , 20, 307-318.
(3) 1-Chlorobutane; C [109-63-3]	₄ H ₉ Cl;	
VARIABLES:		PREPARED BY:
T/K = 298, Solvent co	mposition	W.E. Acree, Jr.
<b>EXPERIMENTAL VALUES^a</b> t = 25.0 °C		•
x3 ^(s)	x3	×1
0.0000	0.0000	0.00165
0.1308	0.1305	0.00216
0.2359	0.2353	0.00261
0.4352	0.4337	0.00345
0.5379	0.5358	0.00390
0.6420	0.6392	0.00436
	0.6392	0.00508
0.8161		
0.9170 1.0000	0.9119 0.9941	0.00556 0.00586
METHOD: APPARATUS/PROC Constant temperature i thermometer, and an u spectrophotometer. Binary solvent mixtur weight. Excess solute	bath, calorimetric ltraviolet/visible es were prepared by	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</li> <li>(2) Gold Label, 99+ % anhydrous, Aldrich Chemical Company.</li> </ul>
in amber glass bottle equilibrate for sever temperature. Attainm was verified by sever measurements and by a brium from supersatur saturated solutions t a coarse filter into flasks, weighed and d	al days at constant ent of equilibrium al repetitive pproaching equili- ation. Aliquots of ransferred through tared volumetric iluted with methanol.	<ul> <li>(3) HPLC Grade, 99.5+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortl before use.</li> </ul>
Concentrations determ metrically at 356 nm.	ined spectrophoto-	ESTIMATED ERRORS:

Components:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.
(2) 2,2,4-Trimethylpentane; C ₈ H ₁₈ ; [540-84-1]		J. Solution Chem. <u>1991</u> , 20, 307-318.
(3) 1-Chlorobutane; $C_{\chi}H_{\gamma}Cl;$ [109-63-3]		
VARIABLES:		PREPARED BY:
T/K = 298, Solve	ent composition	W.E. Acree, Jr.
EXPERIMENTAL VALU t = 25.0 °C	JES ^a	• ····································
×3 ^(s)	<b>x</b> 3	<b>x</b> 1
0.0000	0.0000	0.00107
0.1490	0.1488	0.00142
0.2874	0.2869	0.00183
0.5109	0.5095	0.00270
0.6145	0.6125	0.00320
0.6940	0.6914	0.00368
0.8546	0.8505	0.00478
0.9322	0.9272	0.00532
1.0000 ^e x ₃ ^(s) : init fraction Bol the ternary		0.00586 solvent mixture; x ₁ : mole mole fraction of component 3 in
a x ₃ ^(s) : init. fraction sol	ial mole fraction of binary ubility of the solute; $x_3$ : r	solvent mixture: x.: mole
a x ₃ ^(s) : init. fraction sol	ial mole fraction of binary ubility of the solute; $x_3$ ; r solution.	solvent mixture: x.: mole
a _{x3} (s): init. fraction sol the ternary	ial mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION
<pre>e x3^(s): init. fraction sol the ternary (ETHOD: APPARATUS Constant tempera</pre>	ial mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS:
<ul> <li>a x3^(s): init. fraction sol the ternary</li> <li>APPARATUS</li> <li>Constant tempera thermometer, and spectrophotomete</li> <li>Binary solvent m weight. Excess s</li> </ul>	ial mole fraction of binary ubility of the solute; x3: r solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.</pre>
<ul> <li>* x₃^(S): init. fraction sol the ternary</li> <li>* Traction sol the ternary</li> <li>* Traction sol</li> <li>* Tr</li></ul>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium	<pre>solvent mixture; x_i: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemical Company.</pre>
<pre>a x₃^(s): init. fraction sol the ternary the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed</pre>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemical</pre>
<pre>* x₃^(s): init. fraction sol the ternary the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed Concentrations d</pre>	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>solvent mixture; x_i: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received. (2) HPLC Grade, 99.7+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.5+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortl</pre>

COMPONENTS :		ORIGINAL MEASUREMENTS:		
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Acree, W.E., Jr.; Zvaigzne, A.I.		
(2) n-Heptane; C	7 ^H 16; [142-82-5]	Phys. Chem. Liq. <u>1991</u> , 23, 225-237.		
(3) 1,4-Dichloro [110-56-5]	butane; C ₄ H ₈ Cl ₂ ;			
VARIABLES:		PREPARED BY:		
T/K = 298, Solvent composition		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne		
EXPERIMENTAL VALU t = 25.0 °C	JES ^a			
x3 ^(s)	<i>x</i> 3	×1		
0.0000	0.0000	0.00157		
0.1379	0.1375	0.00276		
0.2507	0.2497	0.00392		
0.4470	0.4442	0.00625		
0.5682	0.5638	0.00768		
0.6581	0.6524	0.00873		
0.8425	0.8339	0.01026		
0.9120	0.9024	0.01049		
1.0000	0.9895	0.01053		
<pre>a x₃^(s): init fraction sol the ternary</pre>	ial mole fraction of binary ubility of the solute; $x_3$ : r solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in		
fraction sol	ubility of the solute; x _z : r	solvent mixture; x ₁ : mole mole fraction of component 3 in		
fraction sol	ubility of the solute; x ₃ : r solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION		
fraction sol	AUXILIARY	nole fraction of component 3 in		
fraction sol the ternary METHOD: APPARATUS Constant tempera	AUXILIARY AUXILIARY PROCEDURE ture bath, calorimetric an ultraviolet/visible	INFORMATION		
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, was used as received. (2) HPLC Grade, 99+ %, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical</pre>		
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	<pre>INFORMATION INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, was used as received. (2) HPLC Grade, 99+ %, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York, USA. Components 2 and 3 were stored over</pre>		
fraction sol the ternary the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was used as received. (2) HPLC Grade, 99+ %, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York, USA.</pre>		
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed Concentrations d	AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	<pre>INFORMATION INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was used as received. (2) HPLC Grade, 99+ %, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York, USA. Components 2 and 3 were stored over molecular sieves and distilled short:</pre>		

cree, W.E., Jr.; Zvaigzne, A.I. hys. Chem. Liq. <u>1991</u> , 23, 225-237. EPARED BY: .E. Acree, Jr., P.R. Naidu and A.I. vaigzne .00184 .00312 .00430 .00697 .00807 .00807 .00911 .01041 .01051 .01053 ent mixture; x ₁ : mole fraction of component 3 in
EPARED BY: .E. Acree, Jr., P.R. Naidu and A.I. vaigzne
E. Acree, Jr., P.R. Naidu and A.I. vaigzne
E. Acree, Jr., P.R. Naidu and A.I. vaigzne
vaigzne .00184 .00312 .00430 .00697 .00807 .00911 .01041 .01051 .01053
.00184 .00312 .00430 .00697 .00807 .00911 .01041 .01051 .01053
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.00312 .00430 .00697 .00807 .00911 .01041 .01051 .01053
.00430 .00697 .00807 .00911 .01041 .01051 .01053
.00697 .00807 .00911 .01041 .01051 .01053
.00807 .00911 .01041 .01051 .01053
009911 001041 001051 001053
01041 01051 01053
01051 .01053
.01053
ent mixture: v., mole
ent mixture; $x_i$ : mole fraction of component 3 in
PRMATION
RCE AND PURITY OF MATERIALS:
.) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, used as received.
<ul> <li>99+ %, anhydrous, Aldrich Chemical Company.</li> <li>puriss, 99+ %, Fluka Chemical</li> </ul>
Corporation, Ronkonkoma, New York, USA.
Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
IMATED ERRORS:
K: precision ± 0.05. ^(s) : <u>+</u> 0.0001. : <u>+</u> 1.5 % (relative error).

ORIGINAL MEASUREMENTS: COMPONENTS: (1) Anthracene; C14H10; [120-12-7] Acree, W.E., Jr.; Zvaigzne, A.I. (2) Cyclohexane; C₆H₁₂; [110-82-7] Phys. Chem. Liq. 1991, 23, 225-237. (3) 1,4-Dichlorobutane; C₄H₈Cl₂; [110-56-5] VARIABLES: PREPARED BY: T/K = 298, Solvent composition W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne EXPERIMENTAL VALUES^a  $t = 25.0 \,^{\circ}C$ x3^(s) x3  $\boldsymbol{x}_1$ 0.0000 0.0000 0.00155 0.1066 0.1063 0.00278 0.1993 0.1985 0.00394 0.3903 0.3878 0.00638 0.4994 0.4956 0.00754 0.5985 0.5934 0.00854 0.7962 0.7883 0.00987 0.8837 0.8747 0.01023 1.0000 0.9895 0.01053 ^a  $x_3^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_3$ : mole fraction of component 3 in the ternary solution. AUXILIARY INFORMATION SOURCE AND PURITY OF MATERIALS: METHOD: APPARATUS/PROCEDURE Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was used as received. Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by (2) HPLC Grade, 99.9+ %, Aldrich Chemical weight. Excess solute and solvent placed Company. in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York, was verified by several repetitive USA. measurements and by approaching equilibrium from supersaturation. Aliquots of Components 2 and 3 were stored over saturated solutions transferred through molecular sieves and distilled shortly a coarse filter into tared volumetric flasks, weighed and diluted with methanol. before use. Concentrations determined spectrophoto-metrically at 356 nm. ESTIMATED ERRORS:  $T/K: \pm 0.05.$  $x_3^{(8)}: \pm 0.0001.$  $x_1: \pm 1.5$  % (relative error).

ORIGINAL MEASUREMENTS:
Acree, W.E., Jr.; Zvaigzne, A.I.
Phys. Chem. Liq. <u>1991</u> , 23, 225-237.
PREPARED BY:
W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
<b>x</b> 1
0.00165
0.00294
0.00417
0.00646
0.00761
0.00859
0.00996
0.01035
0.01053
ILIARY INFORMATION
SOURCE AND PURITY OF MATERIALS:
<pre>ic (1) Gold Label, 99.9+ %, Aldrich Chemical le Company, Milwaukee, Wisconsin, USA, used as received.</pre>
by (2) 99+ %, anhydrous, Aldrich Chemical ced Company.
ant (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York, USA.
ant (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York,
Company.       ant     (3) puriss, 99+ %, Fluka Chemical       Im     Corporation, Ronkonkoma, New York,       USA.       L-       Of     Components 2 and 3 were stored over       gh     molecular sieves and distilled shortly       before use.

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COMPONENTS:
 (1) Anthracene; C<sub>14</sub>H<sub>10</sub>; [120-12-7]
 (2) n-Hexane; C<sub>6</sub>H<sub>14</sub>; [110-54-3]
 (3) Nitrobenzene; C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub>; [98-95-3]
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#### ORIGINAL MEASUREMENTS:

Mahieu, J.

Bull. Soc. Chim. Belgique <u>1936</u>, **4**5, 667-677.

VARIABLES:

T/K = 298, Solvent Composition

PREPARED BY: W.E. Acree, Jr.

EXPERIMENTAL VALUES^a t = 25 °C

x2 ^{(s),b}	*2 ^b	x1 ^b
0.000	0.000	0.0103
0.134	0.133	0.0109
0.365	0.361	0.0100
0.542	0.538	0.0077
0.795	0.792	0.0039
1.000	0.999	0.0015

^a  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_2$ : mole fraction of component 2 in the ternary solution.

^b computed by compiler from published solvent compositions and solute solubilities, which were expressed as weight percent and grams of solute per 100 grams of solvent.

#### AUXILIARY INFORMATION

METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after the solvent had evaporated.	<pre>(1) Purity and source not given. (2) Purity and source not given. (3) Purity and source not given. ESTIMATED ERRORS: T/K: precision ± 0.5 (compiler). x₂⁽⁵⁾: ± 0.001 (compiler).</pre>
	x ₁ : <u>+</u> 5 % (relative error; compiler).

Components:	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Mahieu, J.
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	Bull. Soc. Chim. Belgique <u>1936</u> , 45, 667-677.
(3) Aniline; C ₆ H ₇ N; [62-53-3]	
VARIABLES:	PREPARED BY:
T/K = 313, Solvent Composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 40 \circ C$	
x ₂ ^{(s),b} x ₂ ^b x ₁	b
0.000 0.000 0.	0077
0.267 0.265 0.	0089
0.508 0.503 0.	0094
0.813 0.809 0.	0048
1.000 0.997 0.	0031
AUXILIAR	INFORMATION
	SOURCE AND PURITY OF MATERIALS:
ETHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer,	SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given.
AUXILIARS ETHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into cared containers and weighed. Solubili- cies were calculated from the weight of the solid residue which remained after the solvent had evaporated.	SOURCE AND PURITY OF MATERIALS:

(1) Anthracene; $C_{14}H_{10}$ ; $[120-12-7]$ (2) 2,2,4-Trimethylpentane; $C_{8}H_{18}$ ; [540-84-1] (3) 1-Butanol; $C_{4}H_{10}O$ ; [71-36-3] VARIABLES: T/K = 298, Solvent composition EXPERIMENTAL VALUES ⁸ $t = 25.0 \ ^{\circ}C$ $c_{3}^{(s)}$ $c_{1}$ 0.00000 0.00660 0.03705 0.00692 0.0806 0.00698 0.1191 0.00723 0.2014 0.00723 0.2014 0.00752 0.6170 0.00799 0.8248 0.00805 1.298 0.00813 ^a $c_{3}^{(s)}$ ; initial molar concentration (mol of solvent mixture; $c_{1}$ is the molar solubility	Anderson, B.D. Ph.D. Dissertation, University Lawrence, Kansas, USA (1978). PREPARED BY: W.E. Acree, Jr. C ₃ ^(s) C ₁ 2.370 0.00859 2.953 0.00867 3.950 0.00892 5.992 0.00935 7.913 0.00936 9.302 0.00954 10.87 0.00950 Im ⁻³ ) of the binary sy (mol dm ⁻³ ) of the solute.	of Kansas,
(2) 2,2,4-Trimethylpentane; $C_8H_{18}$ ; [540-84-1] (3) 1-Butanol; $C_4H_{10}O$ ; [71-36-3] <b>VARIABLES:</b> T/K = 298, Solvent composition <b>EIPERIMENTAL VALUES^a</b> $t = 25.0 \ ^{\circ}C$ $C_3^{(s)}$ $C_1$ 0.00000 0.00660 0.03705 0.00692 0.0806 0.00698 0.1191 0.00723 0.2014 0.00723 0.2014 0.00752 0.6170 0.00799 0.8248 0.00805 1.298 0.00813	Lawrence, Kansas, USA (1978). PREPARED BY: W.E. Acree, Jr. 2.370 0.00859 2.953 0.00867 3.950 0.00892 5.992 0.00935 7.913 0.00936 9.302 0.00954 10.87 0.00950	of Kansas,
(3) 1-Butanol; $C_4H_{10}O$ ; $[71-36-3]$ VARIABLES: T/K = 298, Solvent composition EXPERIMENTAL VALUES ^a $t = 25.0  ^{\circ}C$ $c_3^{(s)}$ $c_1$ 0.00000 $0.006600.03705$ $0.006920.0806$ $0.006980.1191$ $0.007230.2014$ $0.007230.2014$ $0.007230.3960$ $0.007520.6170$ $0.007990.8248$ $0.008051.298$ $0.00813$	PREPARED BY:         W.E. Acree, Jr.         c3 ⁽⁵⁾ c1         2.370       0.00859         2.953       0.00867         3.950       0.00892         5.992       0.00935         7.913       0.00936         9.302       0.00954         10.87       0.00950	
VARIABLES: $T/K = 298$ , Solvent composition         EIPERIMENTAL VALUES ⁸ $t = 25.0$ °C $c_3^{(s)}$ 0.00000         0.00660         0.03705         0.0806         0.1191         0.00723         0.2014         0.3960         0.3960         0.6170         0.8248         0.00813	W.E. Acree, Jr. $c_3^{(6)}$ $c_1$ 2.370 0.00859 2.953 0.00867 3.950 0.00892 5.992 0.00935 7.913 0.00936 9.302 0.00954 10.87 0.00950	
$T/K = 298$ , Solvent composition         EXPERIMENTAL VALUES ⁸ $z = 25.0$ °C $c_3^{(s)}$ $c_1$ 0.00000       0.00660         0.03705       0.00692         0.0806       0.00698         0.1191       0.00723         0.2014       0.00723         0.3960       0.00752         0.6170       0.00799         0.8248       0.00805         1.298       0.00813	W.E. Acree, Jr. $c_3^{(6)}$ $c_1$ 2.370 0.00859 2.953 0.00867 3.950 0.00892 5.992 0.00935 7.913 0.00936 9.302 0.00954 10.87 0.00950	
EIPERIMENTAL VALUES ^a $c_3^{(s)}$ $c_1$ 0.00000       0.00660         0.03705       0.00692         0.0806       0.00698         0.1191       0.00723         0.2014       0.00723         0.3960       0.00752         0.6170       0.00799         0.8248       0.00805         1.298       0.00813	$c_3^{(5)}$ $c_1$ 2.3700.008592.9530.008673.9500.008925.9920.009357.9130.009369.3020.0095410.870.00950	
$t = 25.0 \ ^{\circ}C$ $c_3^{(s)} C_1$ $0.00000 0.00660$ $0.03705 0.00692$ $0.0806 0.00698$ $0.1191 0.00723$ $0.2014 0.00723$ $0.3960 0.00752$ $0.6170 0.00799$ $0.8248 0.00805$ $1.298 0.00813$	2.370       0.00859         2.953       0.00867         3.950       0.00892         5.992       0.00935         7.913       0.00936         9.302       0.00954         10.87       0.00950	
0.000000.006600.037050.006920.08060.006980.11910.007230.20140.007230.39600.007520.61700.007990.82480.008051.2980.00813	2.370       0.00859         2.953       0.00867         3.950       0.00892         5.992       0.00935         7.913       0.00936         9.302       0.00954         10.87       0.00950	
0.037050.006920.08060.006980.11910.007230.20140.007230.39600.007520.61700.007990.82480.008051.2980.00813	2.953       0.00867         3.950       0.00892         5.992       0.00935         7.913       0.00936         9.302       0.00954         10.87       0.00950	
0.08060.006980.11910.007230.20140.007230.39600.007520.61700.007990.82480.008051.2980.00813	3.950       0.00892         5.992       0.00935         7.913       0.00936         9.302       0.00954         10.87       0.00950	
0.1191       0.00723         0.2014       0.00723         0.3960       0.00752         0.6170       0.00799         0.8248       0.00805         1.298       0.00813	5.992       0.00935         7.913       0.00936         9.302       0.00954         10.87       0.00950	
0.20140.007230.39600.007520.61700.007990.82480.008051.2980.00813	7.913       0.00936         9.302       0.00954         10.87       0.00950	
0.39600.007520.61700.007990.82480.008051.2980.00813	9.302 0.00954 10.87 0.00950	
0.61700.007990.82480.008051.2980.00813	10.87 0.00950	
0.8248 0.00805 1.298 0.00813		
1.298 0.00813	m ⁻³ ) of the binary y (mol dm ⁻³ ) of the solute.	
	m ⁻³ ) of the binary y (mol dm ⁻³ ) of the solute.	
^a $c_3^{(s)}$ ; initial molar concentration (mol (solvent mixture; $c_1$ is the molar solubility	m ⁻³ ) of the binary y (mol dm ⁻³ ) of the solute.	
AUXILIARY I	NFORMATION	
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:	
Constant temperature bath, rotator, thermometer, and an ultraviolet/visible spectrophotometer.	<ol> <li>99.7 %, Aldrich Chemical C Milwaukee, Wisconsin, USA, as received.</li> </ol>	
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass vials, and allowed to equilibrate	(2) 99 %, Phillips Petroleum B Oklahoma, USA.	artlesville,
for several days at constant temperature. Attainment of equilibrium was verified by several duplicate measurements. Aliquots	(3) puriss, 99.5 %, Fluka Chem Corporation, Ronkonkoma, N USA.	
of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 356 nm.	Components 2 and 3 were st molecular sieves to remove water.	
	STIMATED ERRORS:	
	$T/K: \pm 0.1$ (compiler). $c_3^{(s)}: 4$ sig. figs. (compiler). $c_1: \pm 3$ % (relative error; comp	piler).

COMPONENTS :		ORIGINAL MEAS	SUREMENTS :
(1) Anthracene;	$C_{14}H_{10}; [120-12-7]$	Anderson, B.	.D.
(2) 2,2,4-Trimethylpentane; C ₈ H ₁₈ ; [540-84-1]			rtation, University of Kansas ansas, USA (1978).
(3) 1-Octanol; C	8H ₁₈ 0; [111-87-5]		
VARIABLES:		PREPARED BY:	
T/K = 298, Solvent composition		W.E. Acree,	Jr.
EXPERIMENTAL VALU	ES ^a		
c3 ⁽⁸⁾	C ₁	C3 ⁽⁸⁾	C1
0.00000	0.00660	1.033	0.00833
0.03897	0.00656	1.970	0.00994
0.08065	0.00689	2.958	0.0111
0.1226	0.00693	3.941	0.0120
0.2120	0.00717	4.997	0.0129
0.4360	0.00738	6.313	0.0140
0.6914	0.00819	·	
0.778	0.00850		
solvent mixt	al molar concentration (mol ure; c ₁ is the molar solubi)	lity (mol dm ³ )	of the solute.
solvent mixt	ure; c _i is the molar solùbi)	lity (mol dm ⁻³ )	of the solute.
	AUXILIARY	INFORMATION	
ETHOD: APPARATUS/ Constant temperat	AUXILIARY /PROCEDURE :ure bath, rotator, an ultraviolet/visible	INFORMATION SOURCE AND PUT (1) 99.7 %, 1	RITY OF MATERIALS: Aldrich Chemical Company, a, Wisconsin, USA, was used
STHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so n glass vials, a	AUXILIARY PROCEDURE sure bath, rotator, an ultraviolet/visible  xtures were prepared by blute and solvent placed ind allowed to equilibrate	INFORMATION SOURCE AND PUD (1) 99.7 %, J Milwauked as receiv (2) 99 %, Phi ville, O	AITY OF MATERIALS: Aldrich Chemical Company, a, Wisconsin, USA, was used yed. Allips Petroleum Bartles- Klahoma, USA.
ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in glass vials, a for several days ttainment of equ	AUXILIARY PROCEDURE ture bath, rotator, an ultraviolet/visible  xtures were prepared by plute and solvent placed ind allowed to equilibrate at constant temperature. ilibrium was verified by	INFORMATION SOURCE AND PUT (1) 99.7 %, 1 Milwauked as receiv (2) 99 %, Phi ville, OJ (3) 99+ %, AJ	RITY OF MATERIALS: Aldrich Chemical Company, a, Wisconsin, USA, was used yed. Allips Petroleum Bartles- Clahoma, USA. Aldrich Chemical Company.
ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in glass vials, a for several days attainment of equ isveral duplicate of saturated solu i coarse filter i lasks, weighed a concentrations de	AUXILIARY /PROCEDURE ture bath, rotator, an ultraviolet/visible  xtures were prepared by slute and solvent placed and allowed to equilibrate at constant temperature. ilibrium was verified by measurements. Aliquots tions transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	INFORMATION SOURCE AND PUT (1) 99.7 %, J Milwaukee as receiv (2) 99 %, Phi ville, OJ (3) 99+ %, Al Component	AITY OF MATERIALS: Aldrich Chemical Company, a, Wisconsin, USA, was used yed. Allips Petroleum Bartles- Klahoma, USA.
ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in glass vials, a for several days Attainment of equ several duplicate of saturated solu a coarse filter i lasks, weighed a	AUXILIARY /PROCEDURE ture bath, rotator, an ultraviolet/visible  xtures were prepared by slute and solvent placed and allowed to equilibrate at constant temperature. ilibrium was verified by measurements. Aliquots tions transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	INFORMATION SOURCE AND PUD (1) 99.7 %, J Milwauked as receiv (2) 99 %, Phi ville, OJ (3) 99+ %, Al Component molecular	RITY OF MATERIALS: Aldrich Chemical Company, a, Wisconsin, USA, was used yed. Illips Petroleum Bartles- clahoma, USA. Idrich Chemical Company. Is 2 and 3 were stored over Is sieves to remove trace

COMPONENTS: ORIGINAL MEASUREMENTS: Smutek, M.: Fris, M.: Fohl, J. (1) Anthracene; C14H10; [120-12-7] (2) Trichloromethane; CHCl₃; [67-66-3] Collection Czech, Chem, Commun, 1967. 32, 931-943. (3) Benzene; C₆H₆; [71-43-2] PREPARED BY: VARIABLES: T/K = 298, Solvent Composition W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne EXPERIMENTAL VALUES^a t = 25.0 °Cx,(s),b **x**2 x, 0.000 0.000 0.00711 0.179 0.178 0.00723 0.247 0.245 0.00724 0.396 0.393 0.00739 0.566 0.562 0.00775 0.00837 0.663 0.657 0.00945 0.840 0.832 1.000 0.990 0.0105 ^a  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_2$ : mole fraction of component 2 in the ternary solution. ^b computed by compiler. AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE SOURCE AND PURITY OF MATERIALS: (1) 95 % initial purity, Urxovy Zavody, Czech., was recrystallized several times from pyridine and cyclohexane Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by to give a final purity of 98.3 %. weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at (2) 99 %, Commercial sample, source and constant temperature. Aliquots of saturpurification method was not specified. ated solutions were transferred into tared containers and weighed. Solubili-ties were calculated from the weight of the solid residue which remained after (3) 99 %, Commerical sample, source and purification method was not specified. the solvent had evaporated. ESTIMATED ERRORS: T/K: precision  $\pm$  0.05.  $x_2$ :  $\pm 0.001$  (compiler).  $x_1$ :  $\pm 3$  % (relative error; compiler).

COMPONENTS:			ORIGINAL	MEASUREMENTS	51	
(1) Anthrace	ne; C ₁₄ H ₁₀ ; [	120-12-7]	Smutek,	Smutek, M.; Fris, M.; Fohl, J. Collection Czech. Chem. Commun. <u>1967</u> ,		
(2) Benzene;						
<pre>(3) Tetrachloromethane; CCl₄; [56-23-5]</pre>		32, 931-943.				
VARIABLES:			PREPARED	BY:		
T/K = 293 and 298, Solvent Composition		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne				
EXPERIMENTAL $t = 20.0 ^{\circ}C$	VALUES ⁸	t	= 25.0 °C	·····		
x3(s),b	<b>x</b> 3	x _i	x3 ^{(s),b}	<i>x</i> 3	<i>x</i> 1	
0.000	0.000	0.00595	0.000	0.000	0.00711	
0.202	0.201	0.00570	0.202	0.201	0.00693	
0.336	0.334	0.00564	0.336	0.334	0.00662	
0.504	0.501	0.00531	0.504	0.501	0.00622	
0.604	0.601	0.00545	0.604	0.600	0.00603	
1.000	0.996	0.00411	1.000	0.995	0.00483	
^b compute	d by compile	r.				
^b compute	d by compile	τ.				
b compute	d by compile		Y INFORMATION			
		AUXILIAR		PURITY OF P	MATERIALS :	
ETHOD: APPARA Constant temp and a precisi Binary solven weight. Exces in closed gla to equilibrat constant temp ated solution tared contain ties were cal	TUS/PROCEDUR erature bath on balance. t mixtures w s solute and ss container e for severa erature. Ali s were trans ers and weig culated from idue which ro	AUXILLIAN E , thermometer, ere prepared by solvent placed s and allowed 1 hours at quots of satur- ferred into hed. Solubili- the weight of emained after	SOURCE AND (1) 95 % Czech times to gi (2) 99 %, purif (3) 99 %,	PURITY OF ) initial puri , was recry from pyridi ve a final p Commercial ication meth Commercial	MATERIALS: ity, Urxovy Zavody, /stallized several ine and cyclohexane purity of 98.3 %. sample, source and iod was not specified sample, source and iod was not specified	

COMPONENTS:				ORIGINAL MEASUREMENTS:		
(1) Anthrace	(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]			Smutek, M.; Fris, M.; Fohl, J.		
<pre>(2) Methylbenzene; C₇H₈; [108-88-3] (3) Tetrachloromethane; CCl₄;   [56-23-5]</pre>			Collectic 32, 931-9		em. Commun. <u>1967</u> ,	
			52, 551 5			
VARIABLES:			PREPARED BY:			
<pre>T/K = 293, 313 and 333, Solvent Composition</pre>			W.E. Acre Zvaigzne	e, Jr., P.R	. Naidu and A.I.	
EXPERIMENTAL $t = 20.0$ °C	VALUES ^a	t	= 60.0 °C			
x3 ^{(s),b}	×3	<b>x</b> 1	x3 ^{(s),b}	<i>x</i> 3	<b>x</b> 1	
0.000	0.000	0.00645	0.000	0.000	0.0230	
0.166	0.165	0.00595	0.062	0.061	0.0220	
0.375	0.373	0.00565	0.166	0.162	0.0217	
0.642	0.639	0.00505	0.285	0.279	0.0212	
1.000	0.996	0.00411	0.375	0.367	0.0209	
			0.473	0.464	0.0200	
$t = 40.0 ^{\circ}C$			0.642	0.630	0.0188	
2 - 40.0 C			0.846	0.832	0.0169	
0.000	0.000	0.0124	1.000	0.984	0.0156	
0.166	0.164	0.0119				
0.375	0.371	0.0110				
0.641	0.635	0.00977				
1.000	0.992	0.00836				
the term	initial mole n solubility of mary solution. ed by compile		9 solvent mix mole fractio	ture; x ₁ : mo n of compone	le ent 3 in	
·		AUXILIAR	INFORMATION	T		
CETHOD: APPAR	ATUS/PROCEDUR	æ	SOURCE AND PURITY OF MATERIALS:			
Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by			(1) 95 % initial purity, Urxovy Zavody, Czech., was recrystallized several times from pyridine and cyclohexane to give a final purity of 98.3 %.			
	Sinary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after the solvent had evaporated.		<ul> <li>(2) 99 %, Commercial sample, source and purification method was not specifie</li> <li>(3) 99 %, Commerical sample, source and purification method was not specifie</li> </ul>			
weight. Exce in closed gl to equilibra constant ten ated solution tared contai ties were ca the solid re	te for severa perature. Ali ons were trans ners and weig clculated from sidue which r	al hours at Equots of satur- iferred into ghed. Solubili- a the weight of remained after	(3) 99 %,	Commerical	sample, source and	
weight. Exce in closed gl to equilibra constant ten ated solution tared contain ties were ca the solid re	te for severa perature. Ali ons were trans ners and weig clculated from sidue which r	al hours at Equots of satur- iferred into ghed. Solubili- a the weight of remained after	(3) 99 %,	Commerical fication meth	sample, source and	

(1) Anthracene;			ORIGINAL MEASUREMENTS:
• •	C ₁₄ H ₁₀ ; [120-12-7]		Smutek, M.; Fris, M.; Fohl, J.
(2) 1,4-Dimethy [106-42-3]	lbenzene; C ₈ H ₁₀ ;		Collection Czech. Chem. Commun. <u>1967</u> , 32, 931-943.
(3) Tetrachloro [56-23-5]	methane; CCl ₄ ;		
VARIABLES:	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		PREPARED BY:
T/K = 298, Solve	ent Composition		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALUE t = 25.0 °C	JES ^a		
x ₁ (s),b	×3	<b>x</b> 1	
0.000	0.000	0.00	770
0.256	0.254	0.00	752
0.408	0.405	0.00	694
0.580	0.576	0.00	611
1.000	0.995	0.00	483
	JUXI	LIARY	INFORMATION
ETHOD: APPARATUS		ILIARY	INFORMATION SOURCE AND PURITY OF MATERIALS:
Constant tempera and a precision Binary solvent m weight. Excess s in closed glass to equilibrate f constant tempera ated solutions w tared containers ties were calcul	/PROCEDURE ture bath, thermometer balance. ixtures were prepared olute and solvent plac containers and allowed or several hours at ture. Aliquots of satu ere transferred into and weighed. Solubil ated from the weight o e which remained after	by ed ir-	

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COMPONENTS:			ORIGINAL MEASUREMENTS:			
(1) Anthraces	ne; C ₁₄ H ₁₀ ; []	20-12-7]	Smutek, M.; Fris, M.; Fohl, J.			
(2) Methylbenzene; C ₇ H ₈ ; [108-88-3] (3) Pyridine; C ₅ H ₅ N; [110-86-1]		Collection Czech. Chem. Commun. <u>1967</u> , 32, 931-943.				
<pre>/ARIABLES: T/K = 293 and 333, Solvent Composition</pre>			PREPARED BY:			
			W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne			
t = 20.0 °C	VALUES ^a	t	= 60.0 °C			
x3 ^{(s),b}	×3	×1	x3 ^{(s),b}	<i>x</i> 3	<b>x</b> 1	
0.000	0.000	0.00645	0.000	0.000	0.0230	
0.115	0.114	0.00736	0.225	0.219	0.0260	
0.279	0.277	0.00825	0.279	0.271	0.0271	
0.437	0.433	0.00856	0.437	0.425	0.0281	
0.538	0.533	0.00863	0.538	0.523	0.0287	
0.636	0.630	0.00895	0.636	0.617	0.0293	
0.777	0.770	0.00880	0.731	0.709	0.0297	
0.823	0.816	0.00875	0.823	0.799	0.0288	
1.000	0.992	0.00834	1.000	0.972	0.0284	
the term	solubility of ary solution. ad by compile		mole fractio	n of compone	ent 3 in	
the term	ary solution.		mole fractio	n of compone	ent 3 in	
the term	ary solution.		mole fractio		ent 3 in	
the term	ary solution.	AUXILIAR	INFORMATION			
the term ^b compute ^{compute} <b>ETHOD: APPARI</b> Constant temp and a precis: Binary solver weight. Excess in closed gla to equilibrat constant temp ated solution tared contain ties were cal	ATUS/PROCEDUR perature bath ion balance. Int mixtures w as solute and ass container te for severa perature. Ali hs were trans hers and weig iculated from sidue which r	AUXILIAR: AUXILIAR: RE h, thermometer, were prepared by d solvent placed is and allowed hl hours at quots of satur- offerred into the weight of emained after	INFORMATION SOURCE AND (1) 95 % Czech times to gi (2) 99 %, purif (3) 99 %,	PURITY OF I initial puri- t, was recry from pyrid: ve a final p Commercial ication meth Commercial		

Components:	
	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Smutek, M.; Fris, M.; Fohl, J.
(2) 2-Propanone; C ₃ H ₆ O; [67-64-1]	Collection Czech. Chem. Commun. <u>1967</u> , 32, 931-943.
(3) Pyridine; C ₅ H ₅ N; [110-86-1]	
VARIABLES:	PREPARED BY:
T/K = 293, Solvent Composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALUES ⁸ t = 20.0 °C	
x ₂ ^{(s),b} x ₂ x ₁	
0.000 0.000 0.0	0834
0.312 0.310 0.0	0702
0.576 0.573 0.0	0560
0.803 0.800 0.0	0431
1.000 0.997 0.0	0313
AUXILIARY	INFORMATION
AUXILIARY METHOD: APPARATUS/PROCEDURE	INFORMATION SOURCE AND PURITY OF MATERIALS:

COMPONENTS :	
	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Mahieu, J.
(2) 2-Propanone; $C_{3}H_{8}O;$ [67-64-1]	Bull. Soc. Chim. Belgique <u>1936</u> , 45, 667-677.
(3) Nitrobenzene; C ₆ H ₅ NO ₂ ; [98-95-3]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ⁶ $t = 25 \ ^{\circ}C$	L
x2 ^{(s),b} x2 ^b x1 ^b	
0.000 0.000 0.0	103
0.413 0.409 0.0	092
0.657 0.652 0.0	069
0.861 0.857 0.0	051
1.000 0.996 0.0	043
AUXILIARY	INFORMATION
	INFORMATION SOURCE AND PURITY OF MATERIALS:
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer,	
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and a precision balance.	SOURCE AND PURITY OF MATERIALS:
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer,	SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given.
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Allquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after	SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given. (2) Purity and source not given.
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after	SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given. (2) Purity and source not given. (3) Purity and source not given.

OMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Mahieu, J.
(2) Benzene; C ₆ H	i ₆ ; [71-43-2]	Bull. soc. Chim. Belgique <u>1936</u> , 45, 667-677.
(3) Methanol; Cl	H ₄ 0; [67-56-1]	
ARIABLES:	······································	PREPARED BY:
r/K = 298, Solve	ent Composition	W.E. Acree, Jr.
<b>XPERIMENTAL VALU</b> t = 25 °C	UES ⁸	
x2 ^{(s),b}	<b>x</b> 2 ^b	x1 ^b
0.000	0.000	0.00025
0.124	0.124	0.00072
0.303	0.303	0.00175
0.539	0.537	0.00398
0.751	0.747	0.00569
1.000	0.993	0.00740
the ternary ^b computed b solubilities	solution. by compiler from published	mole fraction of component 2 in solvent compositions and solute weight percent and grams of
the ternary ^b computed b solubilities	solution. by compiler from published s, which were expressed at 100 grams of solvent.	solvent compositions and solute weight percent and grams of
the ternary ^b computed b solubilities solute per 1	solution. by compiler from published s, which were expressed and 100 grams of solvent. AUXILIA	solvent compositions and solute weight percent and grams of NRY INFORMATION
the ternary ^b computed b solubilities solute per 1 solute <b>per 1</b> <b>THOD: APPARATUS</b>	solution. by compiler from published s, which were expressed and loo grams of solvent. AUXILIA S/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
the ternary ^b computed b solubilities solute per 1 Solute per 1 ETHOD: APPARATUS Constant tempera	solution. by compiler from published s, which were expressed as 100 grams of solvent. AUXILIN S/PROCEDURE ature bath, thermometer,	RY INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given.
the ternary b computed b solubilities solute per 1 solute per 1 <b>ETHOD: APPARATUS</b> Constant tempera and a precision Binary solvent m weight. Excess so in closed glass in closed glass in closed glass ted solutions w cared containers tes were calcul the solid residu	solution. by compiler from published a, which were expressed and loo grams of solvent. AUXILIA S/PROCEDURE ature bath, thermometer, balance. mixtures were prepared by solute and solvent placed containers and allowed thure. Aliquots of satur- mere transferred into a and weighed. Solubili- ated from the weight of te which remained after	SOURCE AND PURITY OF MATERIALS:
the ternary b computed b solubilities solute per J ETHOD: APPARATUS Constant tempera and a precision Binary solvent m weight. Excess s in closed glass in closed glass to equilibrate f constant tempera ated solutions w tared containers ties were calcul	solution. by compiler from published a, which were expressed and loo grams of solvent. AUXILIA S/PROCEDURE ature bath, thermometer, balance. mixtures were prepared by solute and solvent placed containers and allowed thure. Aliquots of satur- mere transferred into a and weighed. Solubili- ated from the weight of te which remained after	ARY INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given. (2) Purity and source not given.

Components :		ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [1	.20-12-7]	Mahieu, J.
(2) Benzene; C ₆ H ₆ ; [71-43-	-2]	Bull. Soc. Chim. Belgique <u>1936</u> , 45, 667-677.
(3) 1-Propanol; C ₃ H ₈ O; [7]	1-23-8]	667-677.
/ARIABLES:		PREPARED BY:
T/K = 298, Solvent Compos	ition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 25  ^{\circ}C$		
x2 ^{(s),b} x2 ^b	x1 ¹	
0.000 0.0	-	00037
0.229 0.2	29 0.	00140
0.444 0.4	43 0.	00290
0.687 0.6		00457
1.000 0.9	93 0.	00740
	AUXILIAR	Y INFORMATION
ETHOD: APPARATUS/PROCEDUR		Y INFORMATION SOURCE AND PURITY OF MATERIALS:
Constant temperature bath	E	1
Constant temperature bath and a precision balance.	E , thermometer,	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath	E , thermometer, ere prepared by solvent placed s and allowed l hours at quots of satur- ferred into hed. Solubili- the weight of emained after	SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given.
Constant temperature bath and a precision balance. Binary solvent mixtures w weight. Excess solute and in closed glass container to equilibrate for severa constant temperature. Ali ated solutions were trans tared containers and weig ties were calculated from the solid residue which r	E , thermometer, ere prepared by solvent placed s and allowed l hours at quots of satur- ferred into hed. Solubili- the weight of emained after	SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given. (2) Purity and source not given.

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Smutek, M.; Fris, M.; Fohl, J.
(2) Methanol; C	14 10	Collection Czech. Chem. Commun. <u>1967</u> ,
(3) Methylbenze	ne; C ₇ H ₈ ; [108-88-3]	<i>32</i> , 931-943.
VARIABLES:		PREPARED BY:
T/K = 293, Solv	ent Composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VAL t = 20.0 °C	UES ^a	
x2 ^{(s),b}	x ₂	<i>x</i> ,
0.000	0.000	0.00545
0.242	0.241	0.00509
0.489	0.487	0.00395
0.657	0.656	0.00193
0.742	0.741	0.00136
0.812	0.811	0.000948
0.897	0.896	0.000570
0.963	0.963	0.000288
1.000	1.000	0.000202
		UXILIARY INFORMATION
ETHOD: APPARATUS	PROCEDURE	SOURCE AND PURITY OF MATERIALS:
and a precision Binary solvent m weight. Excess s in closed glass to equilibrate f constant tempera ated solutions w tared containers ties were calcul	ixtures were prepar olute and solvent p containers and allo or several hours at ture. Aliquots of s ere transferred int and weighed. Solu ated from the weigh e which remained af	Czech., was recrystallized several times from pyridine and cyclohexane to give a final purity of 98.3 %. laced wed (2) 99 %, Commercial sample, source and purification method was not specified o bili- t of (3) 99 %, Commercial sample, source and purification method was not specified
		ESTIMATED ERRORS: $T/K$ : precision $\pm$ 0.05. $x_2$ : $\pm$ 0.001 (compiler).

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                                                                    ORIGINAL MEASUREMENTS:
 COMPONENTS:
  (1) Anthracene; C<sub>14</sub>H<sub>10</sub>; [120-12-7]
                                                                      Smutek, M.; Fris, M.; Fohl, J.
  (2) Phenol; C<sub>6</sub>H<sub>6</sub>O; [108-95-2]
                                                                      Collection Czech. Chem. Commun. 1967,
                                                                      32, 931-943.
  (3) Methylbenzene; C<sub>7</sub>H<sub>2</sub>; [108-88-3]
 VARIABLES:
                                                                    PREPARED BY:
                                                                     W.E. Acree, Jr., P.R. Naidu and A.I.
  T/K = 313, Solvent Composition
                                                                     Zvaigzne
 EXPERIMENTAL VALUES<sup>8</sup>
  t = 40.0 \,^{\circ}C
       x2<sup>(s),b</sup>
                                                             x,
                                  x2
       0.000
                                  0.000
                                                             0.0124
       0.246
                                  0.243
                                                             0.0113
                                                             0.00940
       0.495
                                  0.490
       0.746
                                  0.741
                                                             0.00715
       1.000
                                  0.995
                                                             0.00487
       <sup>a</sup> x_2^{(6)}: initial mole fraction of binary solvent mixture; x_1: mole fraction solubility of the solute; x_2: mole fraction of component 2 in
       the ternary solution.
       <sup>b</sup> computed by compiler.
                                                    AUXILIARY INFORMATION
METHOD: APPARATUS/PROCEDURE
                                                                    SOURCE AND PURITY OF MATERIALS:
                                                                     (1) 95 % initial purity, Urxovy Zavody,
Czech., was recrystallized several
times from pyridine and cyclohexane
to give a final purity of 98.3 %.
  Constant temperature bath, thermometer,
  and a precision balance.
 Binary solvent mixtures were prepared by weight. Excess solute and solvent placed
 in closed glass containers and allowed
to equilibrate for several hours at
                                                                     (2) 99 %, Commercial sample, source and
  constant temperature. Aliquots of satur-
                                                                           purification method was not specified.
 ated solutions were transferred into
tared containers and weighed. Solubili-
ties were calculated from the weight of
                                                                     (3) 99 %, Commerical sample, source and
purification method was not specified.
 the solid residue which remained after
 the solvent had evaporated.
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ESTIMATED ERRORS:

T/K: precision  $\pm$  0.05. x₂:  $\pm$  0.001 (compiler). x₁:  $\pm$  3 % (relative error; compiler).

		ORIGINAL MEASUREMENTS:
COMPONENTS:	· · · · · · · · · · · · · · · · · · ·	
	$; C_{14}H_{10}; [120-12-7]$	Smutek, M.; Fris, M.; Fohl, J. Collection Czech. Chem. Commun. <u>1967</u> ,
(2) Carbon dis [75-15-0]		<i>32</i> , 931-943.
(3) 2-Propanon	e; C ₃ H ₆ O; [67-64-1]	
VARIABLES:		PREPARED BY:
T/K = 293, Sol	vent Composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VA t = 20.0 °C	LUES ^a	
x3 ^{(s),b}	x ₃ x ₁	
0.000	0.000 0.0	00872
0.247	0.244 0.0	0108
0.304	0.301 0.0	0109
0.360	0.356 0.0	0108
0.466	0.461 0.0	0101
0.567	0.562 0.0	00913
0.797	0.792 0.0	00595
1.000	0.997 0.0	00313
	AUXILIARY	INFORMATION
METHOD: APPARATI		SOURCE AND PURITY OF MATERIALS:
Constant temper and a precision Binary solvent weight. Excess in closed glass to equilibrate constant temper ated solutions tared container ties were calcu	rature bath, thermometer, n balance. mixtures were prepared by solute and solvent placed s containers and allowed for several hours at rature. Aliquots of satur- were transferred into rs and weighed. Solubili- nlated from the weight of lue which remained after	<ul> <li>(1) 95 % initial purity, Urxovy Zavody, Czech., was recrystallized several times from pyridine and cyclohexane to give a final purity of 98.3 %.</li> <li>(2) 99 %, Commercial sample, source and purification method was not specified.</li> <li>(3) 99 %, Commercial sample, source and purification method was not specified.</li> </ul>
		ESTIMATED ERRORS: $T/K$ : precision $\pm$ 0.05. $x_3$ : $\pm$ 0.001 (compiler). $x_1$ : $\pm$ 3 % (relative error; compiler).

COMPONENTS :			ORIGINAL M	EASUREMENTS:	
(1) Anthracer	ie; C ₁₄ H ₁₀ ; [1	20-12-7]	Somayajulu, G.R.; Palit, S.R.		
(2) Iodoethar	ne; C ₂ H ₅ I; [7	4-88-4]	J. Phys.	Chem. <u>1954</u> ,	58, 417-421.
(3) Cyclohexe	ene; C ₆ H ₁₀ ; [1	10-83-8}			
VARIABLES:			PREPARED B	Y:	
T/K = 310, 32 Solvent o	0 and 330 composition		W.E. Acre	e, Jr.	
t = 37 °C	VALUES ^a	t =	57 °C		
$x_{3}^{(s)}$	*3 ^b	x,	x ₁ ^(s)	x3 ^b	<i>x</i> 1
<u>3</u> 0.0000	0.0000	0.01189	0.0000	0.0000	0.02175
0.1117	0.1104	0,01161	0.1117	0.1090	0.02455
0.2128	0.2104	0.01117	0.2128	0.2078	0.02344
0.4765	0.4724	0.00859	0.4765	0.4678	0.01820
0.5451	0.5410	0.00759	0.5451	0.5361	0.01660
1.0000	0.9954	0.00457	1.0000	0.9902	0.00977
t = 47 °C					
0.0000	0.0000	0.01612			
0.1117	0.1098	0.01708			
0.2128	0.2093	0.01641			
0.4765	0.4705	0.01259			
0,5451	0.5389	0.01143			
1.0000	0.9933	0.00668			
fraction the terna	solubility c ry mixture. d by compile	fraction of binary f the solute; x ₃ ; r r.	nole fraction	n of compone	nt 3 in
		AUXILIARY	INFORMATION		
ETHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:
Constant temp thermometer. Solubilities		and a precision	USA,	was recrysta	ied, J.T. Baker, llized several time: ethyl ethanoate.
dynamic metho trations were glass ampoule temperature t ture was slow minute. Solu	d. Mixtures sealed in t a and placed o equilibrat ly increased bility deter	of known concen- hick-walled in a constant e. Bath tempera- by 0.5 K per mined by visually	Chemi calci short	cal Company, um chloride ly before us	
trace of soli verify the ex	d solute dia perimental s emperature w ted values w ation of mol	e fraction	speci	fied, was dr	ne free, source not ied over calcium illed shortly before
temperature.			1		
temperature.			ESTIMATED	ERRORS:	

COMPO	DNENTS:			ORIGINAL MEASUREMENTS:			
(1)	Anthracene	; C ₁₄ H ₁₀ ; []	.20-12-7]	Somayajulu, G.R.; Palit, S.R.			
(2)	Iodoethane	; C ₂ H ₅ I; [7	4-88-4]	J. Phys.	Chem. <u>1954</u>	58, 417-421.	
(3)	Benzene; C	6 ^H 6; [71-43	-2]				
VARIA	BLES:			PREPARED E	3¥:	<u>.</u>	
<pre>T/K = 310, 320, 330 and 340 Solvent composition</pre>			W.E. Acre	e, Jr.			
	IMENTAL VA	LUES ⁸		57 °C	<u> </u>	······	
	x ₃ ^(s)	x3 ^b	x,	x ₃ ^(s)	x3 ^b	<i>x</i> ,	
	0.0000	0.0000	0.01189	0.0000	0.0000	0.02175	
	0.3306	0.3263	0.01303	0.3306	0.3227	0.02385	
	0.4780	0.4716	0.01342	0.4780	0.4664	0.02435	
	0.5721	0.5646	0.01303	0.5721	0.5585	0.02385	
	0.7083	0.6997	0.01216	0.7083	0.6925	0.02226	
	1.0000	0.9894	0.01059	1.0000	0.9807	0.01934	
	1.0000	0.0074	0.01033	1.0000	0.3007	0.01/04	
t =	47 °C		t =	67 °C			
	0.0000	0.0000	0.01612	0.0000	0.0000	0.02867	
	0.3306	0.3247	0.01778	0.3306	0.3202	0.03141	
	0.4780	0.4693	0.01820	0.4780	0.4626	0.03219	
	0.5721	0.5619	0.01778	0.5721	0.5541	0.03141	
1	0.7083	0.6965	0.01660	0.7083	0.6874	0.02951	
	1.0000	0.9856	0.01437	1.0000	0.9744	0.02558	
•	the ternary	blubility o y mixture. by compile	fraction of binary f the solute; x ₃ ; m c.	nole fraction	of componer	nt 3 in	
	· · · · · · · · · · · · · · · · · · ·		AUXILIARY	INFORMATION			
ETHO	D: APPARATI	JS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:	
	tant tempe: nometer.	rature bath	and a precision	USA, V	was recrystal	ied, J.T. Baker, llized several time ethyl ethanoate.	
dynam trat: glass tempe ture minut notir trace verif cloud from solub	nic method long were a s ampoules prature to was slowly the solubi to the temp of solid y the expe -point tem 1. Reporte the variat	sealed in the and placed equilibrate increased lity determ perature at solute disa erimental so operature wa	of known concen- nick-walled in a constant a. Bath tempera- by 0.5 K per nined by visually which the last uppeared. To olubilities, the us also deter- ere computed a fraction	the au chlori (3) AR Gra specif	ithors, dried ide and dist ade, thiopher fied, was dri	ied, prepared by d over calcium illed before use. ne free, source not led over calcium llled shortly beford	
• "				ESTIMATED E	RRORS :		
				T/K: preci	sion <u>+</u> 0.3. 0001 (compil		

COMPONENTS :				ORIGINAL MEASUREMENTS:		
(1)	Anthracen	e; C ₁₄ H ₁₀ ; [1	20-12-7]	Somayajulu, G.R.; Palit, S.R.		
(2)	Iodobenze	ene; C ₆ H ₅ I; [!	591-50-4]	J. Phys.	Chem. <u>1954</u> ,	58, 417-421.
(3)	Benzene;	C ₆ H ₆ ; [71-43	-2]			
VARI	ABLES:		· · · · · · · · · · · · · · · · · · ·	PREPARED B	)Y :	
T/K		0, 315, 320, ent composit		W.E. Acre	e, Jr.	
	RIMENTAL V	ALUES ⁸	·····	42 °C		<u></u>
	x3 ^(s)	x3 ^b	x1	x3 ^(s)	<i>x</i> 3 ^b	<i>*</i> 1
	0.0000	0.0000	0.01462	0.0000	0.0000	0.02014
	0.0639	0.0629	0.01622	0.0639	0.0625	0.02213
	0.1917	0.1886	0.01622	0.1917	0.1875	0.02213
	0.3459	0.3406	0.01549	0.3459	0.3386	0.02113
	0.5615	0.5538	0.01365	0.5615	0.5510	0.01862
	1.0000	0.9909	0.00912	1.0000	0.9876	0.01245
t =	37 °C		t =	47 °C		
	0.0000	0.0000	0.01728	0.0000	0.0000	0.02344
	0.0639	0.0627	0.01916	0.0639	0.0623	0.02570
	0.1917	0.1880	0.01916	0.1917	0.1868	0.02570
	0.3459	0.3396	0.01820	0.3459	0.3374	0.02469
	0.5615	0.5525	0.01594	0.5615	0.5493	0.02175
	1.0000	0.9894	0.01059	1.0000	0.9856	0.01437
			(Continue)	d next page)		
		<b>_</b>	AUXILIARY	INFORMATION		<u> </u>
METH	OD: APPARA	TUS/PROCEDUR	E.	SOURCE AND	PURITY OF M	ATERIALS:
Con the	stant temp rmometer.		and a precision	(1) Purit USA,	y not specif was recrysta	ied, J.T. Baker, llized several times ethyl ethanoate.
tra gla temj tur not tra clou mine from solu	tions were ss ampoule perature t e was slow ute. Solu ing the te ce of soli ify the ex ud-point t ed. Repor m the vari	sealed in t s and placed o equilibrat ly increased bility deter mperature at d solute dis perimental s emperature w	in a constant e. Bath tempera- by 0.5 K per mined by visually which the last appeared. To olubilities, the as also deter- ere computed e fraction	Organ befor (3) AR Gr speci	ic Chemicals e use. ade, thiophe fied, was dr	ied, Columbia , USA, was distilled ne free, source not ied over calcium illed shortly before
				$x_{3}^{(s)}: \pm 0$	ERRORS: ision <u>+</u> 0.3. .0001 (compil 0001 (compil	ler). er).

Components:		ORIGINAL MEASUREMENTS:
(1) Anthracene;	C ₁₄ H ₁₀ ; [120-12-7]	Somayajulu, G.R.; Palit, S.R.
(2) Iodobenzene,	; C ₆ H ₅ I; [591-50-4]	J. Phys. Chem. <u>1954</u> , 58, 417-421.
(3) Benzene; C ₆ H	1 ₆ ; [71-43-2]	
VARIABLES:		PREPARED BY:
	315, 320, 325 and composition	W.E. Acree, Jr.
EXPERIMENTAL VALU	JES ^a (Continued)	
t = 52 °C		
x3 ^(s)	×3 ^b	×1
0.0000	0.0000	0.02738
0.0639	0.0620	0.03002
0.1917	0.1859	0.03002
0.3459	0.3360	0.02867
0.5615	0.5473	0.02526
1.0000	0.9830	0.01698
t = 57 °C		
0.0000	0.0000	0.03145
0.0639	0.0617	0.03447
0.1917	0.1851	0.03447
0.3459	0.3345	0.03293
0.5615	0.5452	0.02900
1.0000	0.9807	0.01934

^a  $x_3^{(5)}$ ; initial mole fraction of binary solvent mixture;  $x_1$ ; mole fraction solubility of the solute;  $x_3$ ; mole fraction of component 3 in the ternary mixture.

^b computed by compiler.

ORIGINAL MEASUREMENTS: CONDONENTS Mahieu. J. (1) Anthracene; C₁₄H₁₀; [120-12-7] Bull. Soc. Chim. Belgique 1936, 45, (2) Methanol; CH,O; [67-56-1] 667-677. (3) Carbon disulfide; CS₂; [75-15-0] PREPARED BY: VARIABLES: W.E. Acree, Jr. T/K = 313, Solvent Composition EXPERIMENTAL VALUES^a  $t = 40 \,^{\circ}C$ x,(s),b x,b x,^b 0.000 0.000 0.0132 0.00473 0.454 0.452 0.663 0.662 0.00198 0.880 0.00097 0 881 0.00030 1.000 0.999 ^a  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_2$ : mole fraction of component 2 in the ternary solution. ^b computed by compiler from published solvent compositions and solute solubilities, which were expressed as weight percent and grams of solute per 100 grams of solvent. AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE SOURCE AND PURITY OF MATERIALS: Constant temperature bath, thermometer, and a precision balance. (1) Purity and source not given. (2) Purity and source not given. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed (3) Purity and source not given. to equilibrate for several hours at constant temperature. Aliquots of saturated solutions were transferred into tared containers and weighed. Solubili-ties were calculated from the weight of the solid residue which remained after the solvent had evaporated. ESTIMATED ERRORS: T/K: precision  $\pm$  0.5 (compiler).  $x_2^{(s)}$ :  $\pm$  0.001 (compiler).  $x_1$ :  $\pm$  5 % (relative error; compiler).

COMPONENTS:	
	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Mahieu, J.
(2) Carbon disulfide; CS ₂ ; [75-15-0]	Bull. Soc. Chim. Belgique <u>1936</u> , 45, 667-677.
(3) Nitrobenzene; C ₆ H ₅ NO ₂ ; [98-95-3]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
EIPERIMENTAL VALUES ^a t = 25 °C	
x2 ^{(s),b} x2 ^b x1	b
0.000 0.000 0.	0103
0.379 0.375 0.	0111
0.626 0.618 0.	0132
0.836 0.823 0.	0156
1.000 0.991 0.	0086
AUXILIAR	Y INFORMATION
AUXILIAR ETHOD: APPARATUS/PROCEDURE	Y INFORMATION SOURCE AND PURITY OF MATERIALS:
ETHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given.
ETHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer,	SOURCE AND PURITY OF MATERIALS:

COMPONENTS: ORIGINAL MEASUREMENTS: Mahieu, J. (1) Anthracene; C₁₄H₁₀; [120-12-7] Bull. Soc. Chim. Belgique 1936, 45, (2) Nitrobenzene; C₆H₅NO₂; [98-95-3] 667-677. (3) Aniline; C₆H₇N; [62-53-3] VARIABLES: PREPARED BY: T/K = 298, Solvent Composition W.E. Acree, Jr. EXPERIMENTAL VALUES^a t = 25 °Cx,^{(s),b} x,^b x,^b 0.000 0 0039 0.000 0.0073 0.270 0.268 0.442 0.438 0.0097 0.726 0.709 0.0229 1.000 0.990 0.0103 ^a  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_i$ : mole fraction solubility of the solute;  $x_2$ : mole fraction of component 2 in the ternary solution. ^b computed by compiler from published solvent compositions and solute solubilities, which were expressed as weight percent and grams of solute per 100 grams of solvent. AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE SOURCE AND PURITY OF MATERIALS: / Constant temperature bath, thermometer, (1) Purity and source not given. and a precision balance. (2) Purity and source not given. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed (3) Purity and source not given. to equilibrate for several hours at constant temperature. Aliquots of saturated solutions were transferred into tared containers and weighed. Solubili-ties were calculated from the weight of the solid residue which remained after the solvent had evaporated. **ESTIMATED ERRORS:** T/K: precision  $\pm$  0.5 (compiler).  $x_2^{(s)}$ :  $\pm$  0.001 (compiler).  $x_1$ :  $\pm$  5 % (relative error; compiler).

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Mahieu, J.
(2) Bromobenzene; C ₆ H ₆ Br; [108-86-1]	Bull. Soc. Chim. Belgique <u>1936</u> , 45, 667-677.
(3) Chlorobenzene; C ₇ H ₈ Cl; [108-90-7]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 25  ^{\circ}C$	
$x_2^{(s),b}$ $x_2^{b}$ $x_1^{b}$	
0.000 0.000 0.	0102
0.189 0.187 0.1	0105
0.413 0.408 0.	0110
0.688 0.680 0.	0114
1.000 0.988 0.1	0119
AUXILIARY	INFORMATION
	INFORMATION SOURCE AND PURITY OF MATERIALS:
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer,	
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Mahieu, J.
(2) Benzene; C ₆ H ₆ ; [71-43-2]	Bull. Soc. Chim. Belgique <u>1936</u> , 45,
(3) Diethyl ether; C ₄ H ₁₀ O; [60-29-7]	667-677.
VARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 25  ^{\circ}C$	
x ₂ ^{(s),b} x ₂ ^b x ₁ ^b	
0.000 0.000 0.0	035
0.287 0.286 0.0	042
0.487 0.484 0.0	054
0.695 0.691 0.0	062
1.000 0.993 0.0	074
<ul> <li>* x₂^(s): initial mole fraction of binary fraction solubility of the solute; x₂: r the ternary solution.</li> <li>^b computed by compiler from published so solubilities, which were expressed as w solute per 100 grams of solvent.</li> </ul>	nole fraction of component 2 in
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and a precision balance.	(1) Purity and source not given.
Binary solvent mixtures were prepared by	(2) Purity and source not given.
weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after the solvent had evaporated.	(3) Purity and source not given.
	ESTIMATED ERRORS:
	T/K: precision $\pm$ 0.5 (compiler). $x_2^{(5)}$ : $\pm$ 0.001 (compiler). $x_1$ : $\pm$ 5 % (relative error; compiler).

COMPONENTS:	•
	ORIGINAL MEASUREMENTS:
(1) Anthracene; C ₁₄ H ₁₀ ; [120-12-7]	Mahieu, J.
<pre>(2) Trichloromethane; CHCl₃; [67-66-3]</pre>	Bull. Soc. Chim. Belgıque <u>1936</u> , 45, 667-677.
(3) Diethyl ether; C ₄ H ₁₀ O; [60-29-7]	
ARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
<b>XPERIMENTAL VALUES⁸</b> t = 25 °C	
x2 ^{(s),b} x2 ^b	x1 ^b
0.000 0.000 0	0.0035
0.205 0.203	0.0029
0.305 0.304 0	0.0030
0.636 0.633 0	0.0046
1.000 0.989 0	0.0107
AUXILIA	RY INFORMATION
THOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given.
THOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
CONSTANT TEMPERATUS/PROCEDURE Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ited solutions were transferred into ared containers and weighed. Solubili- iles were calculated from the weight of the solid residue which remained after	SOURCE AND PURITY OF MATERIALS: (1) Purity and source not given. (2) Purity and source not given.

BIPHENYL SOLUBILITIES IN BINARY SOLVENT MIXTURES

I. <u>Alkane + Alkane (including cycloalkanes)</u>

cyclohexane + n-hexane cyclohexane + n-heptane cyclohexane + n-octane

II. Alkane + Aromatic Hydrocarbon

cyclohexane + benzene

III. Alkane + Ester

None

IV. Alkane + Ether

None

## V. <u>Alkane + Chloroalkane</u>

n-hexane + tetrachloromethane n-heptane + tetrachloromethane cyclohexane + tetrachloromethane

# VI. Ether + Chloroalkane

None

## VII. <u>Miscellaneous</u>

benzene + thiophene cyclohexane + thiophene benzene + pyridine cyclohexane + pyridine pyridine + thiophene 1,2,3,4-tetrahydronaphthalene + decahydronaphthalene

r	
COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Biphenyl; C ₁₂ H ₁₀ ; [92-52-4]	Acree, W.E., Jr.
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	Int. J. Pharm. <u>1984</u> , 18, 47-52.
(3) n-Hexane; C ₆ H ₁₄ ; [110-54-3]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ⁸ t = 25.0 °C	······
x2 ^(s) x2	×1
0.0000 0.0000	0.1233
0.2134 0.1840	0.1378
0.3618 0.3084	0.1476
0.5311 0.4456	0.1609
0.6844 0.5662	0.1727
0.8179 0.6693	0.1817
1.0000 0.8079	0.1921
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) 99 %, Aldrich Chemical Company, Company, Milwaukee, Wisconsin, USA, lized 3 times from methanol.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	(2) Gold Label, 99+ %, Aldrich Chemical Company.
in amber glass bottles and allowed to equilibrate for several days at constant	(3) 99 %, Aldrich Chemical Company.
temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with cyclo- hexane. Concentrations determined spectrophotometrically at 250 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$T/K: \pm 0.05.$ $x_2^{(5)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Biphenyl; C ₁₂ H		Acree, W.E., Jr.
(2) Cyclohexane;		Int. J. Pharm. <u>1984</u> , 18, 47-52.
(3) n-Heptane; C ₇	H ₁₆ ; [142-82-5]	
VARIABLES:		PREPARED BY:
<i>T</i> /K = 298, Solven	t composition	W.E. Acree, Jr.
EXPERIMENTAL VALUE t = 25.0 °C	:S ^a	
x2 ^(s)	<b>x</b> 2	×1
0.0000	0.0000	0.1381
0.1831	0.1561	0.1477
0.3654	0.3080	0.1571
0.5455	0.4548	0.1663
0.7386	0.6082	0.1765
0.8511	0.6941	0.1845
1.0000	0.8079	0.1921
	AUXILIARY	INFORMATION
METHOD: APPARATUS/	PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	ure bath, calorimetric an ultraviolet/visible	<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from methanol.</li> </ul>
weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i		<ul> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>(3) 99+ %, Spectroanalyzed, Fisher Scientific, Pittsburgh, Pennsylvania, USA. Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>
		ESTIMATED ERRORS: T/K: ± 0.05. x ₂ ^(\$) : ± 0.0001. x ₁ : ± 1 % (relative error).

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Biphenyl; C ₁₂ H		Acree, W.E., Jr.
(2) Cyclohexane;	• • •	Int. J. Pharm. <u>1984</u> , 18, 47-52.
(3) n-Octane; C ₈ H ₁	⁸ ; [111-02-3]	
VARIABLES:		PREPARED BY:
T/K = 298, Solven	t composition	W.E. Acree, Jr.
EXPERIMENTAL VALUE: t = 25.0 °C	S ⁸	
x2 ^(s)	<b>x</b> 2	<b>x</b> 1
0.0000	0.0000	0.1480
0.1463	0.1238	0.1539
0.3314	0.2783	0.1601
0.5016	0.4176	0.1675
0.7318	0.6009	0.1789
0.8293	0.6779	0.1825
1.0000	0.8079	0.1921
	·····	
	AUXILIARY	INFORMATION
METHOD: APPARATUS/	PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	ure bath, calorimetric an ultraviolet/visible •	<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from methanol.</li> </ul>
	xtures were prepared by lute and solvent placed	(2) Gold Label, 99+ %, Aldrich Chemical Company.
in amber glass bo equilibrate for so	ttles and allowed to everal days at constant ainment of equilibrium	<ul> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> </ul>
saturated solution a coarse filter in		Components 2 and 3 were stored over molecular sieves and distilled shortly
	aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with cyclo- tions determined	before use.
	aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with cyclo- tions determined	before use. ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_2^{(5)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

COMPO	NENTS:			ORIGINAL M	EASUREMENTS:	
(1)	Biphenyl;	C ₁₂ H ₁₀ ; [92-	52-4]		.; Williams, aughlin, E.	C.P.; Buehring,
(2)	Cyclohexa	ne; C ₆ H ₁₂ ; [1	10-82-7]		-	<u>985</u> , <i>30</i> , 403-409.
(3)	Benzene;	с ₆ н ₆ ; [71-43-	-2]		2 <u>.</u>	<u>200</u> , 00, 100 1001
VARI	ABLES:			PREPARED B	SY:	
Temj	perature,	Solvent comp	osition	W.E. Acre	e, Jr.	
EXPE	RIMENTAL V	ALUES ^a		Į		
	T/K	x3 ^(s)	×1	T/K	x3 ^(s)	<b>*</b> 1
	302.35	0.0000	0.2348	323.55	0.5000	0.6672
	310.45	0.0000	0.3540	324.95	0.5000	0.6953
	314.65	0.0000	0.4319		•	
	320.85	0.0000	0.5616	290.25	0.7000	0.2843
	326.95	0.0000	0.6929	300.85	0.7000	0.3846
	333.05	0.0000	0.8252	306.75	0.7000	0.4484
				314.55	0.7000	0.5491
	297.05	0.3000	0.2704	323.55	0.7000	0.6784
	302.95	0.3000	0.3361			
	309.05	0.3000	0.4182	307.95	1.0000	0.4833
	313.35	0.3000	0.4857	313.85	1.0000	0.5561
	319.45	0.3000	0.5826	316.85	1.0000	0.5932
	325.95	0.3000	0.6990	323.65	1.0000	0.6897
				328.95	1.0000	0.7711
	290.45	0.5000	0.2524	333.15	1.0000	0.8422
	298.65	0.5000	0.3304			
	307.85	0.5000	0.4376			
	314.05	0.5000	0.5274		·	
	solubilit	nitial mole : y of the sol	fraction of binary ute.	solvent mix	ture; x ₁ : mol	le fraction
			AUXILIARY	INFORMATION	r	
ETH	DD: APPARA	TUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:
thei Soli dyna	rmometer. ubilities amic metho	were measure	of known concen-	Compa was p	ny, Rocheste assed over a	odak Chemical r, New York, USA, ctivated alumina and ed from toluene.
gla temp were	ss ampoule perature t e rotated	s and placed o equilibrat at a speed o	in a constant e. Samples were f 0.25 rps while	Compa	Label, 99.9+ ny, Milwauke sed as recei	<pre>%, Aldrich Chemica e, Wisconsin, USA, ved.</pre>
by ( dete atur solu ment	0.1 K ever ermined by re at whic ite disapp	y 1200 secon visually no h the last t eared. At le	slowly increased ds. Solubility ting the temper- race of solid ast two measure- each mixture			<pre>%, Aldrich Chemica as received.</pre>
				ESTINATED	ERRORS :	<u> </u>
				T/X. 5705	ision ± 0.1.	

COMPONENTS :	•	ORIGINAL MEASUREMENTS:
(1) Biphenyl; C ₁₂	H ₁₀ ; [92-52-4]	Acree, W.E., Jr.
(2) n-Hexane; C ₆ H	14; [110-54-3]	Int. J. Pharm. <u>1984</u> , 18, 47-52.
(3) Tetrachlorome [56-23-5]	thane; CCl ₄ ;	
VARIABLES:	<u> </u>	PREPARED BY:
T/K = 298, Solven	t composition	W.E. Acree, Jr.
EXPERIMENTAL VALUE t = 25.0 °C	:S ^a	
x3 ^(s)	<b>x</b> 3	x ₁
0.0000	0.0000	0.1233
0.1733	0.1466	0.1538
0.2982	0.2432	0.1843
0.4731	0.3658	0.2268
0.6378	0.4662	0.2691
0.8319	0.5738	0.3103
	0.6579	0.3421
1.0000 ^a x ₃ ^(s) : initi fraction solu the ternary s		solvent mixture; $x_1$ : mole mole fraction of component 3 in
a x ₃ ^(s) : initian fraction solu	bility of the solute; x3: :	solvent mixture; x ₁ : mole mole fraction of component 3 in
a x ₃ ^(s) : initian fraction solu	bility of the solute; x ₃ : solution.	Bolvent mixture; x ₁ : mole mole fraction of component 3 in ( INFORMATION

		ORIGINAL MEASUREMENTS:
(1) Biphenyl; C ₁₂ H ₁₀ ; [92-5	2-4]	Acree, W.E., Jr.
(2) n-Heptane; C ₇ H ₁₆ ; [142-	82-5]	Int. J. Pharm. <u>1984</u> , 18, 47-52.
<pre>(3) Tetrachloromethane; CC [56-23-5]</pre>	14;	
/ARIABLES:		PREPARED BY:
T/K = 298, Solvent composi	tion	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 25.0  ^{\circ}C$		
x ₁ ^(s) x ₁		<i>x</i> 1
0.0000 0.00	00	0.1381
0.1369 0.11	51	0.1594
0.3185 0.25	68	0.1938
0.5046 0.38	65	0.2340
0.7099 0.51	01	0.2815
0.8131 0.56	50	0.3051
1.0000 0.65	79	0.3421
	AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	- <u></u>	SOURCE AND PURITY OF MATERIALS:
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and an ultrav spectrophotometer.	calorimetric	SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company,
Constant temperature bath, thermometer, and an ultrav spectrophotometer. Binary solvent mixtures we weight. Excess solute and	calorimetric iolet/visible re prepared by solvent placed	<pre>SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from methanol. (2) 99+ %, Spectroanalyzed, Fisher</pre>
Constant temperature bath, thermometer, and an ultrav spectrophotometer. Binary solvent mixtures we weight. Excess solute and in amber glass bottles and equilibrate for several da temperature. Attainment o was verified by several re	calorimetric iolet/visible re prepared by solvent placed allowed to ys at constant f equilibrium petitive	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from methanol.</li> <li>(2) 99+ %, Spectroanalyzed, Fisher Scientific, Pittsburgh, Pennsylvania,</li> </ul>
Constant temperature bath, thermometer, and an ultrav spectrophotometer. Binary solvent mixtures we weight. Excess solute and in amber glass bottles and equilibrate for several da temperature. Attainment o	calorimetric iolet/visible re prepared by solvent placed allowed to ys at constant f equilibrium petitive ching equili- . Aliquots of erred through volumetric d with cyclo- ermined	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from methanol.</li> <li>(2) 99+ %, Spectroanalyzed, Fisher Scientific, Pittsburgh, Pennsylvania, USA.</li> <li>(3) 99.8+ %, Spectroanalyzed, Fisher</li> </ul>
Constant temperature bath, thermometer, and an ultrav spectrophotometer. Binary solvent mixtures we weight. Excess solute and in amber glass bottles and equilibrate for several da temperature. Attainment o was verified by several re measurements and by approa brium from supersaturation saturated solutions transf a coarse filter into tared flasks, weighed and dilute hexane. Concentrations det	calorimetric iolet/visible re prepared by solvent placed allowed to ys at constant f equilibrium petitive ching equili- . Aliquots of erred through volumetric d with cyclo- ermined	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from methanol.</li> <li>(2) 99+ %, Spectroanalyzed, Fisher Scientific, Pittsburgh, Pennsylvania, USA.</li> <li>(3) 99.8+ %, Spectroanalyzed, Fisher Scientific.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortl</li> </ul>

		ORIGINAL MEASUREMENTS:
COMPONENTS:	u . (92-52-4)	Acree, W.E., Jr.
(1) Biphenyl; C ₁₂	$C_{6}H_{12}$ ; [110-82-7]	Int. J. Pharm. <u>1984</u> , 18, 47-52.
(2) Cyclonexane, (3) Tetrachlorom	•	
[56-23-5]		
VARIABLES:		PREPARED BY:
T/K = 298, Solve	ent composition	W.E. Acree, Jr.
EXPERIMENTAL VALU t = 25.0 °C	'ES ^a	
x2 ^(\$)	x2	<b>x</b> 1
0.0000	0.0000	0.3421
0.1654	0.1123	0.3213
0.3387	0.2367	0.3015
0.5215	0.3786	0.2740
0.6833	0.5143	0.2474
0.8507	0.6649	0.2184
1.0000	0.8079	0.1921
	AUXILIARY	INFORMATION
METHOD: APPARATUS	PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	ture bath, calorimetric an ultraviolet/visible £.	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from methanol.
	ixtures were prepared by olute and solvent placed	(2) Gold Label, 99+ %, Aldrich Chemical Company.
in amber glass b equilibrate for temperature. At	ottles and allowed to several days at constant tainment of equilibrium several repetitive	<ul> <li>(3) 99.8+ %, Spectroanalyzed, Fisher</li> <li>Scientific, Pittsburgh, Pennsylvania, USA.</li> </ul>
measurements and brium from super saturated soluti a coarse filter flasks, weighed hexane. Concentr	by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with cyclo- ations determined ically at 250 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
		ESTIMATED ERRORS:
		$\begin{array}{l} T/K: \pm 0.05. \\ x_2^{(s)}: \pm 0.0001. \\ x_1: \pm 1 \ \ (relative \ error). \end{array}$

		ORIGINAL N	MEASUREMENTS:	
		Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E. J. Solution Chem. <u>1988</u> , 16, 519-534.		
•••		Choi, P.B.; McLauglin, E. Ind. Eng. Chem. Fundam. <u>1983</u> , 22, 46-51.		
(3) Thiophene; C ₄ H ₄ S; [110-02-1]		Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409.		
<u> </u>		PREPARED I	BY:	
Solvent comp	osition	W.E. Acre	ee, Jr.	
ALUES ⁸		Į		
x3 ^(s)	×1	T/K	*3 ^(s)	×1
0.0000	0.4833	329.1	0.3000	0.7816
0.0000	0.5561	335.1	0.3000	0.8626
0.0000	0.5932			
0.0000	0.6897	295.9	1.0000	0.3851
0.0000	0.7711	298.4	1.0000	0.4071
0.0000	0.8422	309.7	1.0000	0.5218
		317.0	1.0000	0.6060
0.3000	0.4483	329.5	1.0000	0.7653
0.3000	0.5117	334.8	1.0000	0.8698
0.3000	0.6033			
0.3000	0.6882			
	AUXILIARY	INFORMATION	4	
rus/procedur	E	SOURCE ANI	D PURITY OF M	ATERIALS:
were measure d. Mixtures	d using a of known concen-	Milwa as re (2) Gold	aukee, Wiscon eceived. Label, 99.9+	sin, USA, was used
s and placed o equilibrat at a speed o erature was y 1200 secon visually no h the last t eared. At le	in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	(3) Gold	Label, 99.9+	<pre>%, Aldrich Chemical</pre>
			······	· · · · · · · · · · · · · · · · · · ·
		ESTIMATED	ERRORS :	
	C ₆ H ₆ ; {71-43- ; C ₄ H ₄ S; [110 Solvent comp ALUES ^a x ₃ ^(S) 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.3000 0.4000 0.4000 0.4000 0.4000 0.4000 0.4000 0.5000 0.4000 0.4000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.50000 0.50000 0.50000 0.50000 0.50000 0.50000 0.500000000	Solvent composition ALUES ⁸ x ₃ ^(s) x ₁ 0.0000 0.4833 0.0000 0.5561 0.0000 0.5932 0.0000 0.6897 0.0000 0.7711 0.0000 0.8422 0.3000 0.4483 0.3000 0.5117 0.3000 0.6033 0.3000 0.6882 hitial mole fraction of binary y of the solute.	$C_{12}H_{10}; [92-52-4]$ Coon, J. J.E.; MC $C_{6}H_{6}; [71-43-2]$ Choi, P.I $r, C_{4}H_{4}S; [110-02-1]$ Choi, P.I $r, C_{4}H_{4}S; [110-02-1]$ Choi, P.I $r, C_{4}H_{4}S; [110-02-1]$ PREPARED I         Solvent composition       W.E. Across         ALUES ⁸ $x_3^{(6)}$ $x_1$ $x_3^{(6)}$ $x_1$ $T/K$ 0.0000       0.4833       329.1         0.0000       0.5561       335.1         0.0000       0.5932       0.0000         0.0000       0.6897       295.9         0.0000       0.7711       298.4         0.0000       0.8422       309.7         317.0       3000       0.6033         0.3000       0.6133       329.5         0.3000       0.6882       334.8         0.3000       0.6882       1111         hitial mole fraction of binary solvent mix       Source ANI         (1) 99 %       Milwing as re         a. apped of 0.25 rps while       Source ANI         (1) 99 %       (2) Gold         computive the solute.       (3) Gold         Computive the last trace of solid       Computve the last	12.10.1       J.E.; McLaughlin, E.         J. Solution Chem. 19         C ₆ H ₆ ; [71-43-2]         ; C ₄ H ₄ S; [110-02-1]         Choi, P.B.; McLaughlin, E.         J. Column Chem. 19         Choi, P.B.; McLaughlin, E.         J. Column Chem. 19         Choi, P.B.; McLaughlin, E.         J. Chem. Eng. Data 1         Ind. Eng. Chem. Funda         Choi, P.B.; Milliams, K.G.; McLaughlin, E.         J. Chem. Eng. Data 1         Ind. Eng. Chem. Funda         Choi, P.B.; Williams, K.G.; McLaughlin, E.         J. Chem. Eng. Data 1         Ind. Eng. Chem. Funda         Choi, P.B.; Williams, K.G.; McLaughlin, E.         J. Chem. Eng. Data 1         J. Chem. Eng. Data 1         Solvent composition         W.E. Acree, Jr.         ALUES ³ x ₃ ^(S) x ₁ Choio 0.4833         329.1         0.0000         0.0000         0.0000         0.0000         0.0000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000 <t< td=""></t<>

(1) Biphenyl			ORIGINAL M	MEASUREMENTS:	
<ol> <li>(1) Biphenyl; C₁₂H₁₀; [92-52-4]</li> <li>(2) Cyclohexane; C₆H₁₂; [110-82-7]</li> <li>(3) Thiophene; C₄H₄S; [110-02-1]</li> </ol>		Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E. J. Solution Chem. <u>1988</u> , 16, 519-534. Choi, P.B.; McLaughlin, E. Ind. Eng. Chem. Fundam. <u>1983</u> , 22, 46-51. Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409.			
VARIABLES:			PREPARED E		
Temperature,	, Solvent comp	osition	W.E. Acre	e, Jr.	
experimental.	VALUES ^a		<b>!</b>	<u> </u>	
T/K	x _x (s)	×1	T/K	x3 ^(s)	<i>x</i> 1
302.35	0.0000	0.2348	331.5	0.3000	0.8006
310.45	0.0000	0.3540	337.4	0.3000	0.9109
314.65	0.0000	0.4319			
320.85	0.0000	0.5616	295.9	1.0000	0.3851
326.95	0.0000	0.6929	298.4	1.0000	0.4071
333.05	0.0000	0.8252	309.7	1.0000	0.5218
			317.0	1.0000	0.6060
306.8	0.3000	0,3785	329.5	1.0000	0.7653
314.7	0.3000	0.5221	334.8	1.0000	0.8698
320.4	0.3000	0.6150			
327.2	0.3000	0.7137			
		AUXILIARY	INFORMATION	٨	
METHOD: APPA	LATUS / PROCEDUR		[		ATERIALS:
Constant ten thermometer. Solubilities	s were measure	E and a precision d using a	SOURCE ANI (1) 99 %, Milwa as re	D PURITY OF M , Aldrich Che aukee, Wiscon sceived.	mical Company, sin, USA, was used
Constant ten thermometer. Solubilities dynamic meth trations wer glass ampoul temperature were rotated the bath tem by 0.1 K eve determined h ature at whi solute disag	mperature bath s were measure ood. Mixtures ce sealed in t les and placed to equilibrat i at a speed o mperature was ary 1200 secon oy visually no cch the last t opeared. At le performed for	E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	SOURCE ANI (1) 99 %, Milwa as re (2) Gold Compa (3) Gold	D PURITY OF M , Aldrich Che aukee, Wiscon sceived. Label, 99.9+ any, was used Label, 99.9+	mical Company,

COMPONENTS:			ORIGINAL P	EASUREMENTS :	
(1) Biphenyl;	CH: (92-	52-41			W.B.; Auwaerter,
(2) Benzene;			J.E.; McLaughlin, E. J. Solution Chem. <u>1988</u> , 16, 519-534. Choi, P.B.; McLaughlin, E. Ind. Eng. Chem. Fundam. <u>1983</u> , 22, 46-51.		
(3) Pyridine;	3) Pyridine; C ₅ H ₅ N; [110-86-1]		Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409.		
VARIABLES:			PREPARED E	3¥:	
Temperature,	Solvent comp	osition	W.E. Acre	e, Jr.	
EXPERIMENTAL V	VALUES ^a		<u>.</u>		
T/K	x3 ^(s)	<i>x</i> 1	T/K	×3 ^(s)	×1
307.95	0.0000	0.4833	333.6	0.3000	0.8270
313.85	0.0000	0.5561	336.8	0.3000	0.8797
316.85	0.0000	0.5932			
323.65	0.0000	0.6897	297.3	1.0000	0.3742
328.95	0.0000	0.7711	300.9	1.0000	0.4085
333.15	0.0000	0.8422	307.1	1.0000	0.4743
			312.4	1.0000	0.5327
308.4	0.3000	0.4419	323.7	1.0000	0.6884
314.7	0.3000	0.5184	331.7	1.0000	0.8170
321.2	0.3000	0.6289			
326.9	0.3000	0.7287			
	y of the sol				
		AUXILIARY	INFORMATION	I	
METHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:
Constant temp thermometer. Solubilities		and a precision	Milwa		mical Company, sin, USA, was used
dynamic metho trations were glass ampoule temperature t were rotated the bath temp by 0.1 K ever determined by ature at which	d. Mixtures sealed in t s and placed o equilibrat at a speed o erature was y 1200 secon visually no h the last t eared. At le	of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	Compa (3) Gold	ny, was used	<ol> <li>Aldrich Chemical as received.</li> <li>Aldrich Chemical as received.</li> </ol>
			ESTIMATED $T/K: \text{ prec} x_3^{(s)}: \pm 0 x_1: \pm 0.0$	ERRORS: ision <u>+</u> 0.1. .0001. 003.	
			,		

			ORIGINAL P	(EASUREMENTS :	
<pre>(1) Biphenyl;</pre>			Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E. J. Solution Chem. <u>1988</u> , 16, 519-534.		
(2) Cyclohexa			Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. <i>J. Chem. Eng. Data</i> <u>1985</u> , <i>30</i> , 403-409.		
<pre>(3) Pyridine;</pre>	C ₅ H ₅ N; [110-	-86-1]	Choi, P.E	3.	<u>985</u> , 30, 403-409. SU, USA (1982).
VARIABLES:		·····	PREPARED E		
Temperature,	Solvent comp	osition	W.E. Acre		
XPERIMENTAL V	ALUES ^a		Į		
T/K	x3 ^(S)	<b>x</b> 1	T/K	x3 ^(\$)	×1
302.35	0.0000	0.2348	334.5	0.3000	0.8583
310.45	0.0000	0.3540	336.4	0.3000	0.8948
314.65	0.0000	0.4319			
320.85	0.0000	0.5616	297.3	1.0000	0.3742
326.95	0.0000	0.6929	300.9	1.0000	0.4085
333.05	0.0000	0.8252	307.1	1.0000	0.4743
			312.4	1.0000	0.5327
312.4	0.3000	0.5029	323.7	1.0000	0.6884
317.6	0.3000	0.5744	331.7	1.0000	0.8170
322.1	0.3000	0.6475			
326.3	0.3000	0.7168			
332.4	0.3000	0.8232			
			<u> </u>		
		AUXILIARY INFOR	MATION		
ETHOD: APPARA	TUS/PROCEDUR		1	D PURITY OF M	ATERIALS:
Constant temp thermometer.	perature bath	E and a precision	SOURCE AND (1) 99 %, Milwa	, Aldrich Che	mical Company, sin, USA, was
Constant temp thermometer. Solubilities	erature bath were measure	E and a precision	SOURCE AND (1) 99 %, Milwa used	Aldrich Che Aukee, Wiscon as received.	mical Company, sin, USA, was
Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule	were measure d. Mixtures sealed in t s and placed	E and a precision d using a of known concen- hick-walled in a constant	SOURCE ANI (1) 99 %, Milwa used (2) Gold	Aldrich Che Aukee, Wiscon as received. Label, 99.9+	mical Company, sin, USA, was
Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule temperature t were rotated the bath temp by 0.1 K ever determined by ature at whic solute disapp ments were pe	were measure d. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was y 1200 secon visually no the last t heared. At le	E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	SOURCE ANI (1) 99 %, Milwa used (2) Gold Compa (3) Gold	, Aldrich Che aukee, Wiscon as received. Label, 99.9+ any, was used Label, 99.9+	mical Company, sin, USA, was %, Aldrich Chemica
thermometer. Solubilities dynamic metho trations were glass ampoule temperature t were rotated the bath temp by 0.1 K ever determined by ature at whic	were measure d. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was y 1200 secon visually no the last t heared. At le	E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	SOURCE ANI (1) 99 %, Milwa used (2) Gold Compa (3) Gold	, Aldrich Che aukee, Wiscon as received. Label, 99.9+ any, was used Label, 99.9+ any, was used	mical Company, sin, USA, was %, Aldrich Chemica as received. %, Aldrich Chemica

	MPONENTS: 1) Biphenyl; C ₁₂ H ₁₀ ; [92-52-4]			ORIGINAL M	EASUREMENTS:	
(1) Bip	ohenyl; C ₁₂ H ₁₀ ;	[92-52	-4]	Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, J. J. Solution Chem. <u>1988</u> , 16, 519-534. Choi, P.B.; McLaughlin, J.		
(2) Pyr	idine; C ₅ H ₅ N;	[110-86	5-1]			
(3) Thi	ophene; C _L H _L S;	[110-0	02-1]			<i>m</i> . <u>1983</u> , 22, 46-51.
		Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. <i>J. Chem. Eng. Data</i> <u>1985</u> , <i>30</i> , 403-409.				
VARIABLE				PREPARED E	3¥:	
Tempera	ature, Solvent	сотров	ition	W.E. Acre	e, Jr.	
EXPERIME	ENTAL VALUES ⁸	• •				
T/K	( x ₃ ^(s)		×1	T/K	*3 ^(s)	×1
297	7.3 0.00	00	0.3742	331.4	0,7000	0.8061
300	0.00	00	0.4085	334.3	0.7000	0.8512
307	0.00	00	0.4743			
312	2.4 0.00	00	0.5327	295.9	1.0000	0.3851
323	3.7 0.00	00	0.6884	298.4	1.0000	0.4071
331		00	0.8170	309.7	1.0000	0.5218
				317.0	1.0000	0.6060
304	.9 0.70	00	0.4483	329.5	1.0000	0.7653
308	3.3 0.70	00	0.4990	334.8	1.0000	0.8698
317	.6 0.70	00	0.6046			
a x	$\frac{1.2}{3}$ (s): initial multiplicity of the	nole fra	0.6957 action of binary e.	solvent mix	ture; x ₁ : mo]	e fraction
a x		nole fra	action of binary	solvent mix	ture; x ₁ : mo]	e fraction
a x		nole fra	action of binary e.	Bolvent mix		e fraction
a x sol		nole fra e solut	action of binary e.	INFORMATION		
a x sol ÆTHOD: Constan thermon	APPARATUS/PRO	cedure bath a	AUXILIARY	INFORMATION SOURCE AND (1) 99 %, Milwa	PURITY OF M Aldrich Che	
a x sol METHOD: Constan thermom Solubil dynamic	APPARATUS/PRO At temperature meter.	CEDURE bath a asured of	AUXILIARY AUXILIARY nd a precision using a known concen-	INFORMATION SOURCE AND (1) 99 %, Milwa as re (2) Gold	PURITY OF M Aldrich Che ukee, Wiscon ceived. Label, 99.9+	ATERIALS: mical Company, sin, USA, was used %, Aldrich Chemical
^a x sol METHOD: Constan thermom Solubil dynamic tration glass a	APPARATUS/PRO At temperature meter.	CEDURE bath a asured fin this laced in	AUXILIARY AUXILIARY nd a precision using a known concen- ck-walled n a constant	INFORMATION SOURCE AND (1) 99 %, Milwa as re (2) Gold Compa	PURITY OF M Aldrich Che ukee, Wiscon cceived. Label, 99.9+ my, was used	ATERIALS: mical Company, sin, USA, was used %, Aldrich Chemical as received.
a x sol METHOD: Constan thermon Solubil dynamic tration glass a tempera were ro the bat by 0.1 determi ature a solute	APPARATUS/PRO APPARATUS/PRO At temperature meter. ities were mea moules and pi ture to equil: tated at a spe ture to equil: tated at a spe to exery 1200 f ned by visual: twich the li disappeared. i	CEDURE bath a asured fi in thi laced if ibrate. sed of was slo seconds ly noti ast tra At leas	AUXILIARY AUXILIARY AUXILIARY nd a precision using a known concen- ck-walled n a constant Samples were 0.25 rps while owly increased . Solubility ng the temper- ce of solid t two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa as re (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che ukee, Wiscon ceived. Label, 99.9+ ny, was used Label, 99.9+	ATERIALS: mical Company, sin, USA, was used %, Aldrich Chemical
a x sol METHOD: Constant thermon Solubil dynamic tration glass a tempera were ro the bat by 0.1 determi ature a solute ments w	APPARATUS/PRO APPARATUS/PRO At temperature meter. ities were mea moules and pi ture to equil: tated at a spe ture to equil: tated at a spe to exery 1200 f ned by visual: twich the li disappeared. i	CEDURE bath a asured fi in thi laced if ibrate. sed of was slo seconds ly noti ast tra At leas	AUXILIARY AUXILIARY AUXILIARY nd a precision using a known concen- ck-walled n a constant Samples were 0.25 rps while owly increased . Solubility ng the temper- ce of solid t two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa as re (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che ukee, Wiscon sceived. Label, 99.9+ ny, was used Label, 99.9+ ny, was used	ATERIALS: mical Company, sin, USA, was used %, Aldrich Chemical as received. %, Aldrich Chemical

		ORIGINAL MEAS	SUREMENTS :		
C ₁₂ H ₁₀ ; [92-	52-4]		Auwaerter,	J.E.; McLaughlin,	
[etrahydronap 19-64-2]	hthalene;	Fluid Phase Equilibr. <u>1989</u> , 44, 305-345			
<pre>(3) Decahydronaphthalene; C₁₀H₁₈; [91-17-8]</pre>			,,		
······		PREPARED BY:			
Solvent comp	osition	W.E. Acree,	Jr.		
ALUES ^a	<u> </u>				
x3 ^(s)	<b>x</b> 1	T/K	x3 ^(s)	× ₁	
0.0000	0.4528	328.7	0.5000	0.7487	
0.0000	0.5060	334.2	0.5000	0.8509	
0.0000	0.5556				
0.0000	0.6185	309.0	1.0000	0.3611	
0.0000	0.6708	316.0	1.0000	0.4740	
0.0000	0.7339	318.2	1.0000	0.5180	
		324.3	1.0000	0.6406	
0.5000	0.3665	328.2	1.0000	0.7385	
0.5000	0.4599				
0.5000	0.5537				
0.5000	0.6563				
	AUXILIARY	INFORMATION			
TUS/PROCEDUR	E.	SOURCE AND PI	JRITY OF MA	TERIALS:	
were measure d. Mixtures sealed in t s and placed o equilibrat at a speed o erature was y 1200 secon	d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while	<pre>Milwauko passed o then red (2) 99.6+ % (3) 99+ %, f having a cis and</pre>	ee, Wiscons over activa crystallize , Aldrich C Aldrich Che	in, USA, was ted alumina and d from solution. hemical Company. mical Company, atio of 60.6 % ns.	
	Tetrahydronap [19-64-2] phaphthalene; Solvent comp	Tetrahydronaphthalene;         119-64-2]         onaphthalene; C ₁₀ H ₁₈ ;         Solvent composition         /ALUES ⁸ x ₃ ^(*) x ₃ ^(*) 0.0000         0.4528         0.0000         0.5556         0.0000         0.6185         0.0000         0.6708         0.0000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5000         0.5537         0.5000         0.5000         0.5537         0.5000         0.5000         0.5537         0.5000         0.5000         0.5000         0.5537         0.5000         0.5000 <t< td=""><td>Fetrahydronaphthalene;       E.         119-64-2]       Fluid Phase         pnaphthalene;       C10H18;         Solvent composition       W.E. Acree,         YALUES²       X1         x3⁽²⁾       X1         0.0000       0.4528         0.0000       0.5556         0.0000       0.6185         0.0000       0.6185         0.0000       0.6185         0.0000       0.6708         0.0000       0.5556         0.0000       0.6708         0.5000       0.3665         324.3         0.5000       0.5537         0.5000       0.5537         0.5000       0.6563         nitial mole fraction of the binary solvent mi         yof the solute.       SOURCE AND PA         XTUS/PROCEDURE       SOURCE AND PA         were measured using a       (1) 99.6 %, Milwauke passed (2) 99.6 %, Milwauke passed (3) 99 % %, J</td><td>E. Firshydronaphthalene; 119-64-2] maphthalene; C₁₀H₁₈; Solvent composition FREPARED BY: N.E. Acree, Jr. FREPARED BY: N.E. Acree, Jr. FALUES⁴ x₃^(*) x₁ T/K x₃^(*) 0.0000 0.4528 328.7 0.5000 0.0000 0.5556 0.0000 0.6185 309.0 1.0000 0.0000 0.6185 309.0 1.0000 0.0000 0.6185 309.0 1.0000 0.0000 0.6556 0.0000 0.6563 316.0 1.0000 0.5000 0.3665 328.2 1.0000 0.5000 0.4599 0.5000 0.5537 0.5000 0.6563 mitial mole fraction of the binary solvent mixture; x₁: y of the solute. AUXILIARY INFORMATION SOURCE AND FURITY OF MA (1) 99.6 + Åldrich Ch (2) 99.6 + Å, Aldrich Ch (3) 99 + Å, Aldrich Ch</td></t<>	Fetrahydronaphthalene;       E.         119-64-2]       Fluid Phase         pnaphthalene;       C10H18;         Solvent composition       W.E. Acree,         YALUES ² X1         x3 ⁽²⁾ X1         0.0000       0.4528         0.0000       0.5556         0.0000       0.6185         0.0000       0.6185         0.0000       0.6185         0.0000       0.6708         0.0000       0.5556         0.0000       0.6708         0.5000       0.3665         324.3         0.5000       0.5537         0.5000       0.5537         0.5000       0.6563         nitial mole fraction of the binary solvent mi         yof the solute.       SOURCE AND PA         XTUS/PROCEDURE       SOURCE AND PA         were measured using a       (1) 99.6 %, Milwauke passed (2) 99.6 %, Milwauke passed (3) 99 % %, J	E. Firshydronaphthalene; 119-64-2] maphthalene; C ₁₀ H ₁₈ ; Solvent composition FREPARED BY: N.E. Acree, Jr. FREPARED BY: N.E. Acree, Jr. FALUES ⁴ x ₃ ^(*) x ₁ T/K x ₃ ^(*) 0.0000 0.4528 328.7 0.5000 0.0000 0.5556 0.0000 0.6185 309.0 1.0000 0.0000 0.6185 309.0 1.0000 0.0000 0.6185 309.0 1.0000 0.0000 0.6556 0.0000 0.6563 316.0 1.0000 0.5000 0.3665 328.2 1.0000 0.5000 0.4599 0.5000 0.5537 0.5000 0.6563 mitial mole fraction of the binary solvent mixture; x ₁ : y of the solute. AUXILIARY INFORMATION SOURCE AND FURITY OF MA (1) 99.6 + Åldrich Ch (2) 99.6 + Å, Aldrich Ch (3) 99 + Å, Aldrich Ch	

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CARBAZOLE SOLUBILITIES IN BINARY SOLVENT MIXTURES

I. <u>Alkane + Alkane (including cycloalkanes)</u>

```
n-hexane + cyclohexane
n-heptane + cyclohexane
n-octane + cyclohexane
methylcyclohexane + cyclohexane
2,2,4-trimethylpentane + cyclohexane
cyclohexane + cyclooctane
```

II. Alkane + Aromatic Hydrocarbon

cyclohexane + benzene

III. Alkane + Ester

2,2,4-trimethylpentane + butyl butyrate

IV. Alkane + Ether

```
n-hexane + 1,1-oxybisbutane
n-heptane + 1,1-oxybisbutane
n-octane + 1,1-oxybisbutane
n-hexadecane + 1,1-oxybisbutane
cyclohexane + 1,1-oxybisbutane
cyclooctane + 1,1-oxybisbutane
methylcyclohexane + 1,1-oxybisbutane
2,2,4-trimethylpentane + 1,1-oxybisbutane
squalane + 1,1-oxybisbutane
t-butylcyclohexane + 1,1-oxybisbutane
2,2,4-trimethylpentane + 1,1-oxybispentane
n-hexane + tetrahydropyran
n-heptane + tetrahydropyran
n-hexadecane + tetrahydropyran
cyclohexane + tetrahydropyran
2,2,4-trimethylpentane + tetrahydropyran
t-butylcyclohexane + tetrahydropyran
```

#### V. Alkane + Chloroalkane

2,2,4-trimethylpentane + trichloromethane

### VI. Ether + Chloroalkane

```
1,1-oxybisbutane + 1-chlorohexane
1,1-oxybisbutane + 1-chlorooctane
1,1-oxybisbutane + 1-chlorotetradecane
1,1-oxybisbutane + chlorocyclohexane
```

## VII. <u>Miscellaneous</u>

2,2,4-trimethylpentane + 1-butanol 2,2,4-trimethylpentane + 1-octanol benzene + trichloromethane benzene + tetrachloromethane methylbenzene + tetrachloromethane

# CARBAZOLE SOLUBILITIES (Continued)

1,4-dimethylbenzene + tetrachloromethane methylbenzene + pyridine 2-propanone + pyridine 2-propanone + methylbenzene 2-propanone + methanol methanol + methylbenzene ethanol + methylbenzene 2-propanol + methylbenzene methylbenzene + phenol 2-propanone + carbon disulfide

ORIGINAL MEASUREMENTS: COMPONENTS: (1) Carbazole; C₁₂H₀N; [86-74-8] Acree, W.E., Jr. Phys. Chem. Liq. 1990, 22, 157-162. (2) Cyclohexane; C₆H₁₂; [110-82-7] (3) n-Hexane; C₆H₁₄; [110-54-3] VARIABLES: PREPARED BY: T/K = 298, Solvent composition W.E. Acree, Jr. EXPERIMENTAL VALUES^a  $t = 25.0 \,^{\circ}C$ x,(s) x₁ x2 0.0000 0.000139 0.0000 0.1316 0.1316 0.000147 0.2887 0.2887 0.000154 0.3942 0.3941 0.000161 0.4631 0.4630 0.000165 0.6030 0.6029 0.000171 0.7289 0.7288 0.000176 0.8724 0.8722 0.000181 1.0000 0.9998 0.000183 ^a  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_2$ : mole fraction of component 2 in the ternary solution. AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE SOURCE AND PURITY OF MATERIALS: Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-lized 3 times from absolute ethanol. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili-brium from supersaturation. Aliquots of saturated solutions transferred through (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly Scium ILOM supersacuration. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-metrically at 292 nm. before use. ESTIMATED ERRORS:  $T/K: \pm 0.05.$  $x_2^{(s)}: \pm 0.0001.$  $x_1: \pm 1$  % (relative error).

(1) Carbonolos C		ORIGINAL MEASUREMENTS:
(I) Carbazore; C	₂ H ₉ N; [86-74-8]	Acree, W.E., Jr.
	C ₆ H ₁₂ ; [110-82-7]	Phys. Chem. Liq. <u>1990</u> , 22, 157-162.
(3) n-Heptane; C ₇	• ••	
VARIABLES:		PREPARED BY:
T/K = 298, Solver	it composition	W.E. Acree, Jr.
EXPERIMENTAL VALUE	us ^a	ļ
$x_{2}^{(s)}$	x,	x ₁
0.0000	0.0000	0.000173
0.1538	0.1538	0.000178
0.2877	0.2877	0.000180
0.4165	0.4164	0.000182
0.5381	0.5380	0.000185
0.6574	0.6573	0.000186
0.7619	0.7618	0.000184
0.8738	0.8737	0.000184
1.0000	0.9998	0.000183
	AUXILIARY	INFORMATION
thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks, weighed a	PROCEDURE ture bath, calorimetric an ultraviolet/visible tures were prepared by plute and solvent placed by tures and allowed to teveral days at constant tainment of equilibrium teveral repetitive by approaching equili- taturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. termined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) HPLC Grade, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly before use. ESTIMATED ERRORS: T/K: ± 0.05. x₂^(*): ± 0.0001. x₁: ± 1 % (relative error).</pre>

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Carbazole; C ₁₂	H _Q N; [86-74-8]	Acree, W.E., Jr.
(2) Cyclohexane; (	C ₆ H ₁₂ ; [110-82-7]	Phys. Chem. Liq. <u>1990</u> , 22, 157-162.
(3) n-Octane; C ₈ H ₁	₈ ; [111-65-9]	
VARIABLES:		PREPARED BY:
T/K = 298, Solvent	t composition	W.E. Acree, Jr.
EXPERIMENTAL VALUE:	5 ⁸	
$x_{2}^{(s)}$	x,	<b>x</b> 1
2	0.0000	0.000198
0.1449	0.1449	0.000200
0.2861	0.2860	0.000201
0.4315	0.4315	0.000198
0.5637	0.5636	0.000194
0.6890	0.6889	0.000192
0.7732	0.7731	0.000190
0.8826	0.8824	0.000187
1.0000	0.9998	0.000183
a x ₂ ⁽⁵⁾ : initia fraction solut the ternary so	l mole fraction of binary sility of the solute; x ₂ : blution.	solvent mixture; x _i : mole mole fraction of component 2 in
" x2''': initia fraction solut the ternary so	l mole fraction of binary sility of the solute; x2: blution.	solvent mixture; x ₁ : mole mole fraction of component 2 in
" x2"; initia fraction solut the ternary so	olution.	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION
<pre>% x₂^(S): initia fraction solut the ternary so the ternary so METHOD: APPARATUS/F</pre>	AUXILIARY	
METHOD: APPARATUS/F Constant temperatu thermometer, and a spectrophotometer.	AUXILIARY PROCEDURE are bath, calorimetric an ultraviolet/visible	INFORMATION
METHOD: APPARATUS/F Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se	AUXILIARY PROCEDURE are bath, calorimetric an ultraviolet/visible ctures were prepared by lute and solvent placed ctles and allowed to sveral days at constant	<pre>Source AND FURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</pre>
METHOD: APPARATUS/F Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se temperature. Atta was verified by se measurements and b	AUXILIARY AUXILIARY PROCEDURE are bath, calorimetric an ultraviolet/visible attures were prepared by tute and solvent placed ttles and allowed to averal days at constant inment of equilibrium averal repetitive by approaching equili-	<ul> <li>INFORMATION</li> <li>SOURCE AND PURITY OF MATERIALS: <ol> <li>99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>99+ %, anhydrous, Aldrich Chemical Company.</li> </ol> </li> </ul>
METHOD: APPARATUS/F Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se temperature. Atta was verified by se measurements and b brium from supersa saturated solution a coarse filter in flasks, weighed an	AUXILIARY PROCEDURE are bath, calorimetric an ultraviolet/visible stures were prepared by bute and solvent placed titles and allowed to overal days at constant inment of equilibrium everal repetitive by approaching equili- tituration. Aliquots of as transferred through to tared volumetric ad diluted with methanol. ermined spectrophoto-	<ul> <li>INFORMATION</li> <li>SOURCE AND FURITY OF MATERIALS: <ol> <li>99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>99+ %, anhydrous, Aldrich Chemical</li> </ol> </li> </ul>
METHOD: APPARATUS/F Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se temperature. Atta was verified by se measurements and k brium from supersa saturated solution a coarse filter in flasks, weighed an Concentrations det	AUXILIARY PROCEDURE are bath, calorimetric an ultraviolet/visible stures were prepared by bute and solvent placed titles and allowed to overal days at constant inment of equilibrium everal repetitive by approaching equili- tituration. Aliquots of as transferred through to tared volumetric ad diluted with methanol. ermined spectrophoto-	<ul> <li>INFORMATION</li> <li>SOURCE AND PURITY OF MATERIALS: <ol> <li>99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>99+ %, anhydrous, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly</li> </ol> </li> </ul>
METHOD: APPARATUS/F Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se temperature. Atta was verified by se measurements and h brium from supersa saturated solution a coarse filter in flasks, weighed an Concentrations det	AUXILIARY PROCEDURE are bath, calorimetric an ultraviolet/visible stures were prepared by bute and solvent placed titles and allowed to overal days at constant inment of equilibrium everal repetitive by approaching equili- tituration. Aliquots of as transferred through to tared volumetric ad diluted with methanol. ermined spectrophoto-	<ul> <li>INFORMATION</li> <li>SOURCE AND PURITY OF MATERIALS: <ol> <li>99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>99+ %, anhydrous, Aldrich Chemical Company.</li> <li>99+ %, anhydrous, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ol> </li> </ul>
METHOD: APPARATUS/F Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se temperature. Atta was verified by se measurements and h brium from supersa saturated solution a coarse filter in flasks, weighed an Concentrations det	AUXILIARY PROCEDURE are bath, calorimetric an ultraviolet/visible stures were prepared by bute and solvent placed titles and allowed to overal days at constant inment of equilibrium everal repetitive by approaching equili- tituration. Aliquots of as transferred through to tared volumetric ad diluted with methanol. ermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) 99+ %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly before use. ESTIMATED ERRORS: T/K: + 0.05.</pre>

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Carbazole;	C ₁₂ H ₉ N; [86-74-8]	Acree, W.E., Jr.
(2) Cyclohexane	; C ₆ H ₁₂ ; [110-82-7]	Phys. Chem. Liq. <u>1990</u> , 22, 157-162.
(3) Methylcyclo [108-87-2]	hexane; C ₇ H ₁₄ ;	
VARIABLES:		PREPARED BY:
T/K = 298, Solve	ent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUE t = 25.0 °C	UES ^a	◆
x2 ^(s)	*2	×1
0.0000	0.0000	0.000196
0.1463	0.1463	0.000195
0.2738	0.2737	0.000193
0.4366	0.4365	0.000191
0.5744	0.5743	0.000189
0.6903	0.6902	0.000188
0.7639	0.7638	0.000187
0.8576	0.8575	0.000185
1.0000	0.9998	0.000183
the ternary	solution.	nole fraction of component 2 in
the ternary	solution.	nole fraction of component 2 in
the ternary	solution.	INFORMATION
the ternary	BOLUTION.	
The ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotometer	AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er.	INFORMATION
METHOD: APPARATUS Constant tempers thermometer, and spectrophotomete Binary solvent r weight. Excess s in amber glass h	AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.
METHOD: APPARATUS Constant tempera thermometer, and spectrophotometer Binary solvent r weight. Excess s in amber glass h equilibrate for temperature. At was verified by	AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical</pre>
METHOD: APPARATUS Constant temperz thermometer, and spectrophotometer Binary solvent r weight. Excess in amber glass h equilibrate for temperature. At was verified by measurements and brium from super saturated solutj a coarse filter flasks, weighed	AUXILIARY S/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ttainment of equilibrium several repetitive d by approaching equili- resturation. Aliquots of ions transferred through into tared volumetric and diluted with methanol. determined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) 99+ %, anhydrous, Aldrich Chemical</pre>

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Carbazole; C	12 ^H 9 ^N ; [86-74-8]	Acree, W.E., Jr.
(2) Cyclohexane;	C ₆ H ₁₂ ; [110-82-7]	Phys. Chem. Liq. <u>1990</u> , 22, 157-162.
(3) 2,2,4-Trimet [540-84-1]	hylpentane; C ₈ H ₁₈ ;	
VARIABLES:		PREPARED BY:
T/K = 298, Solve	nt composition	W.E. Acree, Jr.
EXPERIMENTAL VALU t = 25.0 °C	ES ⁸	
x2 ^(s)	*2	<b>*</b> 1
0.0000	0.0000	0.000126
0.1478	0.1478	0.000133
0.2743	0.2743	0.000140
0.3768	0.3767	0.000145
0.5069	0.5068	0.000152
0.6029	0.6029	0.000158
0.7065	0.7064	0.000164
0.8537	0.8537	0.000173
1.0000	0.9998	0.000183
* $x_2^{(s)}$ : init: fraction sol the ternary	Lal mole fraction of binary ubility of the solute; $x_2$ : molution.	solvent mixture; x _i : mole mole fraction of component 2 in
* x2 ⁽³⁾ : init; fraction sol the ternary	Lal mole fraction of binary ubility of the solute; x ₂ : m solution.	solvent mixture; x ₁ : mole mole fraction of component 2 in
* x2 ⁽²⁾ : init; fraction sol the ternary	solution.	solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION
METHOD: APPARATUS	BOLUTION.	
the ternary METHOD: APPARATUS Constant tempera	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	INFORMATION
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company.
THE TEND: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess so in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated solution a coarse filter flasks, weighed a	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical

(1) Carbazole; C ₁₂		ORIGINAL MEASUREMENTS:
(1) 00110010, 012	H-N: [86-74-8]	Acree, W.E., Jr.
(2) Cyclohexane; (		Phys. Chem. Lig. <u>1990</u> , 22, 157-162.
(3) Cyclooctane; (	0 12	
VARIABLES:		PREPARED BY:
T/K = 298, Solvent	composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES t = 25.0 °C	ça	
x2 ^(s)	<i>x</i> 2	<b>x</b> 1
0.0000	0.0000	0.000309
0.1715	0.1715	0.000289
0.2948	0.2947	0.000274
0.4369	0.4368	0.000256
0.5671	0.5670	0.000241
0.6839	0.6837	0.000226
0.7605	0.7603	0.000213
0.8760	0.8758	0.000198
1.0000	0.9998	0.000183
	AUXILIARY	INFORMATION
thermometer, and a spectrophotometer. Binary solvent mix weight. Excess sol in amber glass bot equilibrate for se temperature. Atta was verified by se measurements and b brium from supersa saturated solution a coarse filter in flasks, weighed am	PROCEDURE are bath, calorimetric in ultraviolet/visible tures were prepared by ute and solvent placed titles and allowed to veral days at constant inment of equilibrium veral repetitive by approaching equili- turation. Aliquots of is transferred through ito tared volumetric d diluted with methanol. ermined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly before use. ESTIMATED ERRORS:</pre>

COMPO	ONENTS:			ORIGINAL N	EASUREMENTS :	
(1)	Carbazole;	C ₁₂ H ₁₀ N; [86-	-74-8]	Smutek, M	(.; Fris, M.;	Fohl, J.
(2)	Cyclohexane	e; C ₆ H ₁₂ ; [110	0-82-7]			em. Commun. <u>1967</u> ,
(3)	Benzene; C ₆	H ₆ ; [71-43-2	1	32, 931-9	43.	
VARIA	ABLES:			PREPARED I	3¥ :	
T/K	= 293 and 2 Solvent Con			W.E. Acre Zvaigzne	e, Jr., P.R.	Naidu and A.I.
EXPER	RIMENTAL VAI 20.0 °C	LUES ^a	t =	25 °C	<u></u>	
[	x3(s),b	x,	×1	x, ^{(s),b}	x,	<b>x</b> 1
	0.000	0.000	0.000153	0.000	0.000	0.000224
-	0.350	0.350	0.000672	0.350	0.350	0.000940
Ì	0.519	0.518	0.00119	0.519	0.518	0.00142
	0,683	0.682	0.00190	0.683	0.681	0.00231
ļ	1.000	0.997	0.00352	1.000	0.996	0.00412
		. <u> </u>	AUXILIARY	INFORMATION	······	
METHO		IS/PROCEDURE		SOURCE AND	PURITY OF M	ATTENTALS.
Cons and Bina weig in c to e cons ated tare ties the	a precision ary solvent tht. Excess closed glass equilibrate thant temper a solutions of container s were calcu solid resid	ature bath, balance. mixtures wer solute and s containers for several ature. Aliqu were transfe s and weighe	hours at ots of satur- erred into ed. Solubili- he weight of mained after	<pre>(1) coal sever pyrid a fin (2) 99 %, purif (3) 99 %,</pre>	tar extract, al times from line, and the al purity of Commercial Commercial	was recrystallized m toluene and n sublimed to give
				$x_3: \pm 0.0$	ision <u>+</u> 0.05 01 (compiler)	

		ORIGINAL MEAS	UREMENTS:
(1) Carbazole;	C ₁₂ H ₁₀ N; [86-74-8]	Anderson, B.1	D.
(2) 2,2,4-Trimet [540-84-1]	thylpentane; C ₈ H ₁₈ ;	Ph.D. Dissertation, University of Kansas, Lawrence, Kansas, USA (1978).	
(3) Butyl butyr: [109-21-7]	ate; C ₈ H ₁₆ O ₂ ;		
VARIABLES:		PREPARED BY:	
T/K = 298, Solve	ent composition	W.E. Acree,	Jr.
EXPERIMENTAL VALU t = 25.0 °C	UES ^a		
c3 ^(s)	c ₁	c3 ^(s)	°1
0.00000	0.00077	0.4054	0.00307
0.00697	0.000853	0.8132	0.00633
0.00971	0.000882	0.9960	0.00778
0.02871	0.000932	1.5128	0.0133
0.06130	0.00105	2.0038	0.0194
0.07538	0.00121	2.9994	0.0354
0.10420	0.00134	3.7227	0.0493
0.1561	0.00162	5.0024	0.0786
0.2057	0,00188	5.9975	0.0994
0.2494	0.00205		
0.3001	0.00243		
0.3961 ^a c ₃ ^(s) : init solvent mixt	0.00309 Sial molar concentration (mol ture; c ₁ is the molar solubil	. dm ⁻³ ) of the bi Lity (mol dm ⁻³ ) o	inary of the solute.
	0.00309	. dm ⁻³ ) of the b: Lity (mol dm ⁻³ ) o	inary of the solute.
	0.00309 Tial molar concentration (mol ture; c ₁ is the molar solubil	. dm ⁻³ ) of the b lity (mol dm ⁻³ ) o INFORMATION	inary of the solute.
^a c ₃ ^(s) : init solvent mixi	0.00309 Sial molar concentration (mol ture; c ₁ is the molar solubil AUXILIARY	INFORMATION	inary of the solute. RITY OF MATERIALS:
<ul> <li>a C3⁽⁵⁾: init solvent mixt</li> <li>GETHOD: APPARATUS</li> <li>Constant temperation</li> </ul>	0.00309 Sial molar concentration (mol ture; c ₁ is the molar solubil AUXILIARY S/PROCEDURE ature bath, rotator, i an ultraviolet/visible	INFORMATION SOURCE AND PUR (1) 99+ %, Al Milwaukee	RITY OF MATERIALS: Ldrich Chemical Company,
<ul> <li>a c3⁽⁵⁾: init solvent mixt</li> <li>solvent mixt</li> <li>METHOD: APPARATUS</li> <li>Constant temperative thermometer, and spectrophotometer</li> <li>Binary solvent m weight. Excess a</li> </ul>	0.00309 Sial molar concentration (mol ture; c ₁ is the molar solubil AUXILIARY S/PROCEDURE ature bath, rotator, i an ultraviolet/visible er. mixtures were prepared by solute and solvent placed	INFORMATION SOURCE AND PUR (1) 99+ %, Al Milwaukee tallized	RITY OF MATERIALS: Idrich Chemical Company, Wisconsin, USA, was recrys from acetone-heptane. Illips Petroleum Bartlesville
<ul> <li>a c3⁽⁵⁾: init solvent mixing solvent mixing</li> <li>METHOD: APPARATUS</li> <li>Constant temperative thermometer, and spectrophotometer</li> <li>Binary solvent n weight. Excess so in glass vials, for several days Attainment of equiparts</li> <li>Several duplication of saturated sol a coarse filter flasks, weighed</li> </ul>	0.00309 ial molar concentration (mol ture; c ₁ is the molar solubil AUXILIARY S/PROCEDURE ature bath, rotator, i an ultraviolet/visible er. mixtures were prepared by solute and solvent placed and allowed to equilibrate s at constant temperature. pullibrium was verified by the measurements. Aliguots lutions transferred through into tared volumetric and diluted with methanol. Betermined spectrophoto-	INFORMATION SOURCE AND PUH (1) 99+ %, Al Milwaukee tallized (2) 99 %, Phi Oklahoma, (3) Purity no Chemical USA, was solution, dried ove fate, and Component	RITY OF MATERIALS: Idrich Chemical Company, a, Wisconsin, USA, was recryst from acetone-heptane. Illips Petroleum Bartlesville, USA. Dt specified, Eastman Chemica Company, Rochester, New York shaken with sodium hydroxide , washed with distilled water ar anhydrous magnesium sul- i distilled. 25 2 and 3 were stored over
<ul> <li>a c3⁽⁵⁾: init solvent mixt</li> <li>solvent mixt</li> <li>solvent mixt</li> <li>cashing</li> <li>cashing</li> <li>cashing</li> <li>constant temperations</li> <li>constant temperations</li> <li>constant temperations</li> <li>constant temperations</li> <li>constant temperations</li> <li>constant temperations</li> <li>coarse filter</li> <li>flasks, weighed</li> <li>constantions</li> </ul>	0.00309 ial molar concentration (mol ture; c ₁ is the molar solubil AUXILIARY S/PROCEDURE ature bath, rotator, i an ultraviolet/visible er. mixtures were prepared by solute and solvent placed and allowed to equilibrate s at constant temperature. pullibrium was verified by the measurements. Aliguots lutions transferred through into tared volumetric and diluted with methanol. Betermined spectrophoto-	INFORMATION SOURCE AND PUI (1) 99+ %, Al Milwaukee tallized (2) 99 %, Phi Oklahoma, (3) Purity no Chemical USA, was solution, dried ove fate, and Component molecular water.	RITY OF MATERIALS: Idrich Chemical Company, b, Wisconsin, USA, was recryst from acetone-heptane. Illips Petroleum Bartlesville, USA. Dt specified, Eastman Chemicz Company, Rochester, New York shaken with sodium hydroxide, washed with distilled water er anhydrous magnesium sul- i distilled. Es 2 and 3 were stored over r sieves to remove trace
<ul> <li>a c3⁽⁵⁾: init solvent mixt</li> <li>solvent mixt</li> <li>solvent mixt</li> <li>cashing</li> <li>cashing</li> <li>cashing</li> <li>constant temperations</li> <li>constant temperations</li> <li>constant temperations</li> <li>constant temperations</li> <li>constant temperations</li> <li>constant temperations</li> <li>coarse filter</li> <li>flasks, weighed</li> <li>constantions</li> </ul>	0.00309 ial molar concentration (mol ture; c ₁ is the molar solubil AUXILIARY S/PROCEDURE ature bath, rotator, i an ultraviolet/visible er. mixtures were prepared by solute and solvent placed and allowed to equilibrate s at constant temperature. pullibrium was verified by the measurements. Aliguots lutions transferred through into tared volumetric and diluted with methanol. Betermined spectrophoto-	INFORMATION SOURCE AND PUB (1) 99+ %, Al Milwaukee tallized (2) 99 %, Phi Oklahoma, (3) Purity no Chemical USA, was solution, dried ove fate, and Component molecular water.	RITY OF MATERIALS: Idrich Chemical Company, b, Wisconsin, USA, was recryst from acetone-heptane. Illips Petroleum Bartlesville, USA. Dt specified, Eastman Chemicz Company, Rochester, New York shaken with sodium hydroxide, washed with distilled water er anhydrous magnesium sul- i distilled. Es 2 and 3 were stored over r sieves to remove trace

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COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Carbazol	.e; C ₁₂ H ₉ N; [86-74-8]	McCargar, J.W.; Acree, W.E., Jr.
(2) n-Hexane	; C ₆ H ₁₄ ; [110-54-3]	Phys. Chem. Liq. <u>1987</u> , 17, 123-138.
(3) 1,1-Oxyb [142-96-	bisbutane; C ₈ H ₁₈ O; -1]	
VARIABLES:	······	PREPARED BY:
T/K = 298, S	Solvent composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar
<b>EXPERIMENTAL</b> $t = 25.0$ °C	VALUES ^a	
*3 ^(S)	×3	×1
0.0000	0.0000	0.000139
0.0789	0.0789	0.000333
0.1602	0.1601	0.000590
0.2498	0.2496	0.000838
0.3404	0.3400	0.001166
0.4368	0.4361	0.001615
0.5382	0.5371	0.002049
0.6435	0.6418	0.002662
0.7581	0.7555	0.003392
	01/555	
0.8748	0.8713	0.003963
1.0000 a _{X3} (s): fraction		0.003963 0.005011
1.0000 a _{X3} (s): fraction	0.8713 0.9950 initial mole fraction of binary a solubility of the solute; $x_3$ :	0.003963 0.005011
1.0000 a _{X3} (s): fraction	0.8713 0.9950 initial mole fraction of binary solubility of the solute; x ₃ : n ary solution.	0.003963 0.005011
1.0000 a _{x3} (s); fraction the term	0.8713 0.9950 initial mole fraction of binary solubility of the solute; x ₃ : n hary solution. AUXILIARY	0.003963 0.005011 solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION
1.0000 a _{x3} (s); fraction the tern the tern METHOD: APPAR Constant tem	0.8713 0.9950 initial mole fraction of binary solubility of the solute; x ₃ : r ary solution. AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	0.003963 0.005011 solvent mixture; x ₁ : mole mole fraction of component 3 in
1.0000 a _{x3} (s); fraction the term the term <b>METHOD: APPAR</b> Constant tem thermometer, spectrophoto Binary solve weight. Exce in amber gla equilibrate temperature. was verified measurements brium from s saturated so a coarse fil flasks, weig	0.8713 0.9950 initial mole fraction of binary solubility of the solute; x ₃ : a ary solution. AUXILIARY AUXILIARY CATUS/PROCEDURE operature bath, calorimetric and an ultraviolet/visible meter. Int mixtures were prepared by ass solute and solvent placed ass bottles and allowed to for several days at constant Attainment of equilibrium by several repetitive and by approaching equili- upersaturation. Aliquots of olutions transferred through ter into tared volumetric hed and diluted with methanol. ns determined spectrophoto-	0.003963 0.005011 solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-

COMPONENTS	8	ORIGINAL MEASUREMENTS:
(1) Carba	zole; C ₁₂ H ₉ N; [86-74-8]	McCargar, J.W.; Acree, W.E., Jr.
(2) n-Hep	tane; C ₇ H ₁₆ ; [142-82-5]	Phys. Chem. Liq. <u>1987</u> , 17, 123-138.
(3) 1,1-0: [142-9	xybiabutane; C ₈ H ₁₈ O; 96-1]	
VARIABLES:		PREPARED BY:
<i>T</i> /K = 298	, Solvent composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar
t = 25.0	AL VALUES ^a °C	
x3 ^(s)	×3	×1
0.000	0 0.0000	0.000173
0.090	6 0.0906	0.000392
0.181	6 0.1815	0.000642
0.273	B 0.2735	0.000943
0.363	2 0.3627	0.001301
0.467	2 0.4664	0.001771
0.562	0 0.5607	0.002275
0.664	0 0.6622	0.002761
0.765	4 0.7629	0.003263
0.873	9 0.8704	0.004012
1.000	0 0.9950	0.005011
	AUXILIAR	Y INFORMATION
METHOD: AP	PARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	temperature bath, calorimetric er, and an ultraviolet/visible ptometer.	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.
weight. E: in amber of equilibrat	lvent mixtures were prepared by xcess solute and solvent placed glass bottles and allowed to te for several days at constant re. Attainment of equilibrium ied by several repetitive nts and by approaching equili- n supersaturation. Aliquots of	<ul> <li>(2) HPLC Grade, 99+ %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over</li> </ul>
measurement brium from saturated a coarse of flasks, we Concentrate	solutions transferred through filter into tared volumetric eighed and diluted with methanol. tions determined spectrophoto- y at 292 nm.	molecular sieves and distilled shortl before use.

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Carbazole;	C ₁₂ H ₉ N; [86-74-8]	McCargar, J.W.; Acree, W.E., Jr.
(2) n-Octane;	C ₈ H ₁₈ ; [111-65-9]	Phys. Chem. Liq. <u>1987</u> , 17, 123-138.
(3) 1,1-Oxybia [142-96-1]	butane; C ₈ H ₁₈ O;	
VARIABLES:	······	PREPARED BY:
T/K = 298, Sol	vent composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar
EXPERIMENTAL VA t = 25.0 °C	LUES ^a	
x3 ^(s)	×3	×1
0.0000	0.0000	0.000198
0.1028	0.1028	0.000474
0.2030	0.2028	0.000804
0.2963	0.2960	0.001120
0.3835	0.3829	0.001492
0.4902	0.4893	0.001864
0.5949	0.5934	0.002463
0.6907	0.6887	0.002966
0.7885	0.7857	0.003605
0.7885 0.8873	0.7857 0.8835	0.003605 0.004339
0.8873 1.0000 • _{x3} (s): in. fraction s	0.8835 0.9950	
0.8873 1.0000 • _{x3} (s): in. fraction s	0.8835 0.9950 Itial mole fraction of binary olubility of the solute; x;:	0.004339 0.005011
0.8873 1.0000 • _{x3} (s): in. fraction s	0.8835 0.9950 Itial mole fraction of binary olubility of the solute; x ₃ : y solution.	0.004339 0.005011
0.8873 1.0000 ^a x ₃ ^(s) : in. fraction s	0.8835 0.9950 Itial mole fraction of binary olubility of the solute; x ₃ : y solution. AUXILIARS	0.004339 0.005011 solvent mixture; x ₁ : mole mole fraction of component 3 in
0.8873 1.0000 * x3(s); in fraction s the ternar (ETHOD: APPARAT Constant tempe	0.8835 0.9950 Itial mole fraction of binary olubility of the solute; x3: y solution. AUXILIARY US/PROCEDURE rature bath, calorimetric nd an ultraviolet/visible	0.004339 0.005011 solvent mixture; x ₁ : mole mole fraction of component 3 in r INFORMATION
0.8873 1.0000 • x ₃ (s); in fraction s the ternar (ETHOD: APPARAT Constant tempe thermometer, a spectrophotome Binary solvent weight. Excess in amber glass equilibrate fo temperature. was verified b measurements a brium from sup saturated solu	0.8835 0.9950 Itial mole fraction of binary olubility of the solute; x3: y solution. AUXILIARY US/PROCEDURE rature bath, calorimetric nd an ultraviolet/visible	0.004339 0.005011 solvent mixture; x ₁ : mole mole fraction of component 3 in r INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-

(1) Carbazole;		ORIGINAL MEASUREMENTS:
	C ₁₂ H ₉ N; [86-74-8]	McCargar, J.W.; Acree, W.E., Jr.
(2) n-Hexadecar	ne; C ₁₆ H ₃₄ ; [544-76-3]	J. Pharm. Sci. <u>1987</u> , 76, 572-574.
(3) 1,1-Oxybist [142-96-1]	outane; C _g H ₁₈ O;	
VARIABLES:		PREPARED BY:
T/K = 298, Solv	vent composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar
EXPERIMENTAL VAI t = 25.0 °C	JUES ^a	•
x3 ^(s)	×3	×1
0.0000	0.0000	0.000414
0.1380	0.1379	0.000807
0.2098	0.2096	0.001020
0.3130	0.3126	0.001360
0.4032	0.4025	0.001680
0.4774	0.4764	0.002020
0.5818	0.5804	0.002370
0.7127	0.7105	0.003080
0.8009	0.7979	0.003710
0.9146	0.9107	0.004300
1.0000	0.9950	0.005011
	AUXILIAR	INFORMATION
METHOD: APPARATU		SOURCE AND FURITY OF MATERIALS:
Constant temper thermometer, an spectrophotomet Binary solvent weight. Excess in amber glass equilibrate for temperature. A was verified by measurements an brium from supe saturated solut a coarse filter flasks, weighed chloromethane.	S/PROCEDURE Tature bath, calorimetric d an ultraviolet/visible	T

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Carbazole; C ₁₂	H_N; [86-74-8]	McCargar, J.W.; Acree, W.E., Jr.
(2) Cyclohexane;		Phys. Chem. Liq. <u>1987</u> , 17, 123-138.
(3) 1,1-Oxybisbut		
[142-96-1]		
VARIABLES:		PREPARED BY:
<i>T</i> /K = 298, Solven	t composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar
EXPERIMENTAL VALUE t = 25.0 °C	S ^a	
x3 ^(\$)	<i>x</i> 3	<i>*</i> 1
0.0000	0.0000	0.000183
0.0665	0.0665	0.000442
0.1372	0.1363	0.000687
0.2143	0.2141	0.001013
0.2975	0.2971	0.001434
0.3876	0.3869	0.001772
0.4895	0.4884	0.002296
0.5996	0.5979	0.002888
0.7135	0.7111	0.003406
0.8510	0.8475	0.004103
1.0000	0.9950	0.005011
	AUXILIARY	INFORMATION
METHOD: APPARATUS/	PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperat	ure bath, calorimetric an ultraviolet/visible	<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> </ul>
weight. Excess so in amber glass bo equilibrate for s temperature. Att. was verified by s measurements and 1 brium from supers, saturated solutio; a coarse filter i flasks, weighed a	by approaching equili- aturation. Aliquots of ns transferred through nto tared volumetric nd diluted with methanol. termined spectrophoto-	<ul> <li>(2) HPLC Grade, 99.9 %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>
		ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_3^{(s)}: \pm 0.0001.$

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Carbazole;	C ₁₂ H _o N; [86-74-8]	McCargar, J.W.; Acree, W.E., Jr.
(2) Cyclooctane	; C ₈ H ₁₆ ; [292-64-8]	Phys. Chem. Liq. <u>1987</u> , 17, 123-138.
(3) 1,1-Oxybish [142-96-1]	outane; C ₈ H ₁₈ O;	
VARIABLES:		PREPARED BY:
T/K = 298, Solv	vent composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar
EXPERIMENTAL VAL t = 25.0 °C	LUES ^a	
x3 ⁽⁵⁾	×3	×1
0.0000	0.0000	0.000309
0.0859	0.0858	0.000747
0.1689	0.1687	0.001098
0.2523	0.2519	0.001511
0.3438	0.3431	0.002028
0.4423	0.4412	0.002520
0.5445	0.5429	0.002997
0.6486	0.6464	0.003431
	0.7667	0.004120
0.7699	01/00/	01004120
0.7699 0.8629	0.8589	0.004578
0.8629 1.0000	0.8589 0.9950 tial mole fraction of binary slubility of the solute; x ₃ : r	
0.8629 1.0000 ^a x ₃ (s); ini fraction so	0.8589 0.9950 tial mole fraction of binary slubility of the solute; x ₃ : r	0.004578 0.005011
0.8629 1.0000 ^a x ₃ (s); ini fraction so	0.8589 0.9950 tial mole fraction of binary plubility of the solute; x ₃ : r y solution.	0.004578 0.005011
0.8629 1.0000 a _{x3} (s); ini fraction so the ternary	0.8589 0.9950 tial mole fraction of binary plubility of the solute; x ₃ : r y solution.	0.004578 0.005011 Bolvent mixture; x ₁ : mole fraction of component 3 in
0.8629 1.0000 a x3 ^(s) : ini fraction so the ternary <b>METHOD: APPARATI</b> Constant temper thermometer, ar spectrophotomet	0.8589 0.9950 tial mole fraction of binary plubility of the solute; x ₃ : r y solution. AUXILIARY PS/PROCEDURE rature bath, calorimetric id an ultraviolet/visible ger.	0.004578 0.005011 Bolvent mixture; x ₁ : mole fraction of component 3 in INFORMATION
0.8629 1.0000 a x3 ^(s) ; ini fraction so the ternary METHOD: APPARATI Constant temper thermometer, ar spectrophotomet Binary solvent weight. Excess in amber glass equilibrate for	0.8589 0.9950 tial mole fraction of binary blubility of the solute; x ₃ : r y solution. AUXILIARY DS/PROCEDURE rature bath, calorimetric id an ultraviolet/visible fer. mixtures were prepared by solute and solvent placed bottles and allowed to : several days at constant	0.004578 0.005011 Bolvent mixture; x ₁ : mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) Gold Label, 99+ %, Aldrich Chemical Company.
0.8629 1.0000 a x3 ^(s) ; ini fraction so the ternary <b>METHOD: APPARATO</b> Constant temper thermometer, ar spectrophotomet Binary solvent weight. Excess in amber glass equilibrate for temperature. F	0.8589 0.9950 tial mole fraction of binary plubility of the solute; x3: r y solution. AUXILIARY DS/PROCEDURE rature bath, calorimetric ad an ultraviolet/visible ser. mixtures were prepared by solute and solvent placed bottles and allowed to	0.004578 0.005011 solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) Gold Label, 99+ %, Aldrich Chemical
0.8629 1.0000 a x3 ^(s) ; ini fraction so the ternary <b>METHOD: APPARATI</b> Constant temper thermometer, ar spectrophotomet Binary solvent weight. Excess in amber glass equilibrate for temperature. F was verified by measurements ar brium from supe saturated solut a coarse filter flasks, weighed	0.8589 0.9950 tial mole fraction of binary plubility of the solute; x ₃ : r y solution. AUXILIARY AUXILIARY SS/PROCEDURE rature bath, calorimetric and an ultraviolet/visible ser. mixtures were prepared by solute and solvent placed bottles and allowed to to several days at constant ttainment of equilibrium y several repetitive and by approaching equili- presaturation. Aliquots of tions transferred through into tared volumetric and diluted with methanol. determined spectrophoto-	<pre>0.004578 0.005011 solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over</pre>
0.8629 1.0000 a x ₃ (s); ini fraction so the ternary <b>METHOD: APPARATI</b> Constant temper thermometer, ar spectrophotomet Binary solvent weight. Excess in amber glass equilibrate for temperature. F was verified by measurements ar brium from supe saturated solut a coarse filter flasks, weigher Concentrations	0.8589 0.9950 tial mole fraction of binary plubility of the solute; x ₃ : r y solution. AUXILIARY AUXILIARY SS/PROCEDURE rature bath, calorimetric and an ultraviolet/visible ser. mixtures were prepared by solute and solvent placed bottles and allowed to to several days at constant ttainment of equilibrium y several repetitive and by approaching equili- presaturation. Aliquots of tions transferred through into tared volumetric and diluted with methanol. determined spectrophoto-	<pre>0.004578 0.005011 solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly</pre>

		ORIGINAL MEASUREMENTS:
(1) Carbazole; C	12 ^H 9 ^N ; [86-74-8]	McCargar, J.W.; Acree, W.E., Jr.
(2) Methylcycloh [108-87-2]	exane; C ₇ H ₁₄ ;	Phys. Chem. Liq. <u>1987</u> , 17, 123-138.
(3) 1,1-Oxybisbu [142-96-1]	tane; C ₈ H ₁₈ O;	
VARIABLES:		PREPARED BY:
T/K = 298, Solve	nt composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar
EXPERIMENTAL VALU t = 25.0 °C	ES ^a	•
×3 ^(s)	×3	×1
0.0000	0.0000	0.000196
0.0877	0.0877	0.000500
0.1650	0.1649	0.000797
0.2453	0.2450	0.001123
0.3347	0.3342	0.001545
0.4294	0.4286	0.001959
0.5339	0.5326	0.002450
0.6885	0.6862	0.003278
0.7417	0.7390	0.003656
0.8568	0.8531	0.004356
V.0300		0.004556
1.0000 ^a x ₃ ^(s) : initi fraction sol	0.9950 Lal mole fraction of binary ubility of the solute; $x_{\tau}$ : m	0.005011 solvent mixture; x _i : mole mole fraction of component 3 in
1.0000	0.9950 Lal mole fraction of binary ubility of the solute; $x_{\tau}$ : m	0.005011
1.0000 ^a x ₃ ^(s) : initi fraction sol	0.9950 Lal mole fraction of binary ubility of the solute; x ₃ : m solution.	0.005011
1.0000 ^a x ₃ ^(s) : initi fraction sol the ternary	0.9950 Lal mole fraction of binary ubility of the solute; x ₃ : n solution. AUXILIARY	0.005011 Bolvent mixture; x ₁ : mole mole fraction of component 3 in
1.0000 a _{x3} (s); initi fraction sol the ternary METHOD: APPARATUS Constant tempera	0.9950 Lal mole fraction of binary ubility of the solute; x ₃ : n solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	0.005011 solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company,
1.0000 a _{x3} (s); initi fraction solution the ternary <b>METHOD: APPARATUS</b> Constant temperati thermometer, and spectrophotometer Binary solvent main weight. Excess so in amber glass bo	0.9950 Ial mole fraction of binary ubility of the solute; x ₃ : m solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by obute and solvent placed ottles and allowed to	0.005011 solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.
1.0000 a _{x3} (s): initi fraction sol- the ternary METHOD: APPARATUS Constant tempera- thermometer, and spectrophotometer Binary solvent m. weight. Excess so in amber glass b equilibrate for temperature. At: was verified by	0.9950 Lal mole fraction of binary ubility of the solute; x ₃ : m solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by polute and solvent placed pottles and allowed to several days at constant tainment of equilibrium several repetitive	0.005011 solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) Gold Label, 99+ %, anhydrous, Aldrich
1.0000 a x3 ^(s) : initi fraction sol the ternary <b>METHOD: APPARATUS</b> Constant temperat thermometer, and spectrophotometer Binary solvent m weight. Excess so in amber glass b equilibrate for temperature. Att was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed a	0.9950 Lal mole fraction of binary ubility of the solute; x ₃ : m solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by oblute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>0.005011 solvent mixture; x_i: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over</pre>
1.0000 a x3 ^(s) : initian fraction solution the ternary <b>METHOD: APPARATUS:</b> Constant temperation thermometer, and spectrophotometer: Binary solvent minimized weight. Excess as in amber glass bi- equilibrate for a temperature. Attained by a measurements and brium from super- saturated solution a coarse filter a flasks, weighed a Concentrations do	0.9950 Lal mole fraction of binary ubility of the solute; x ₃ : m solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by oblute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>0.005011 solvent mixture; x_i: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortl</pre>

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Carbazole; C	₁₂ H ₉ N; [86-74-8]	McCargar, J.W.; Acree, W.E., Jr.
(2) 2,2,4-Trimet [540-84-1]	hylpentane; C ₈ H ₁₈ ;	Phys. Chem. Liq. <u>1987</u> , 17, 123-138.
(3) 1,1-Oxybisbu [142-96-1]	tane; C ₈ H ₁₈ O;	
VARIABLES:	••••••••••••••••••••••••••••••••••••••	PREPARED BY:
T/K = 298, Solve	nt composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar
EXPERIMENTAL VALU t = 25.0 °C	ES ^a	
x3 ^(s)	<i>x</i> 3	×1
0.0000	0.0000	0.000126
0.1026	0.1026	0.000350
0.1971	0.1970	0.000596
0.2948	0.2945	0.000901
0.3911	0.3906	0.001246
0.4933	0.4924	0.001761
0.5933	0.5919	0.002303
0.6925	0.6906	0.002751
0.7878	0.7852	0.003356
0.8888	0.8852	0.004081
1,0000	0.9950	0.005011
	AUXILIARY	INFORMATION
METHOD: APPARATUS	/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	ture bath, calorimetric an ultraviolet/visible r.	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.
Binary solvent m. weight. Excess so in amber glass be equilibrate for temperature. At was verified by so measurements and brium from super saturated solution a coarse filter solution flasks, weighed a	ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto- 2 nm.	<ul> <li>(2) HPLC Grade, 99.7+ %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortl before use.</li> </ul>

		ORIGINAL MEAS	UREMENTS:	
(1) Carbazole; C	12H10N; [86-74-8]	Anderson, B.1	D.	
	hylpentane; C ₈ H ₁₈ ;	Ph.D. Dissertation, University of Kansas, Lawrence, Kansas, USA (1978).		
(3) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]				
VARIABLES:		PREPARED BY:		
T/K = 298, Solve	nt composition	W.E. Acree,	Jr.	
t = 25.0 °C	ES ⁸	<b>↓</b>		
C3 ⁽⁸⁾	C1	c3 ^(s)	°1	
0.00000	0.00077	1.2024	.0.00382	
0.0109	0.000816	1.4978	0.00478	
0.0299	0.000856	1.9977	0.00650	
0.0495	0.000902	3.031	0.0109	
0.0847	0.000966	3.983	0.0162	
0.1246	0.00105	4.763	0.0209	
0.1998	0.00119	5.867	0.0287	
0.4216	0.00172			
0.6936	0.00233			
	0100200			
0.8675 ^a c ₃ ^(s) : initi solvent mixto	0.00286 al molar concentration (mol are; c ₁ is the molar solubi)	. dm ⁻³ ) of the bi lity (mol dm ⁻³ ) d	inary of the solute.	
	0.00286	. dm ⁻³ ) of the b: lity (mol dm ⁻³ ) d	inary of the solute.	
	0.00286 al molar concentration (mol are; c ₁ is the molar solubi)	. dm ⁻³ ) of the bi lity (mol dm ⁻³ ) of the bi information	inary of the solute.	
^a c ₃ ^(s) ; initi solvent mixt	0.00286 al molar concentration (mol are; c ₁ is the molar solubil AUXILIARY	INFORMATION	inary of the solute. RITY OF MATERIALS:	
<ul> <li>^a c₃^(s); initisolvent mixto</li> <li><b>ETHOD: APPARATUS</b>,</li> <li>Constant temperation</li> </ul>	0.00286 al molar concentration (mol are; c ₁ is the molar solubi) AUXILIARY /PROCEDURE ture bath, rotator, an ultraviolet/visible	INFORMATION SOURCE AND PUR (1) 99+ %, Al Milwaukee	RITY OF MATERIALS: Ldrich Chemical Company,	
<ul> <li>^a c₃^(s): initisolvent mixto</li> <li>^b c₃^(s): initisolvent mixto</li> <li>^c c₃^(s): initisolvent mixto</li> <li>^c c₃^(s): initisolvent mixto</li> <li>^c c₃^(s): initisolvent mixto</li> <li>^c c₃^(s): initisolvent mixto</li> </ul>	0.00286 al molar concentration (mol are; c ₁ is the molar solubil AUXILIARY /PROCEDURE ture bath, rotator, an ultraviolet/visible c. ixtures were prepared by plute and solvent placed and allowed to equilibrate	INFORMATION SOURCE AND PUR (1) 99+ %, Al Milwaukee tallized (2) 99 %, Phi Oklahoma,	RITY OF MATERIALS: Idrich Chemical Company, a, Wisconsin, USA, was recry from acetone-heptane. illips Petroleum Bartlesvill	
<ul> <li>^a c₃^(s); initi solvent mixts</li> <li>^b c₃^(s); initi solvent mixts</li> <li>^c c₃^(s); initi solvent mixts</li> <li><b>ETHOD: APPARATUS</b>,</li> <li>Constant temperation</li> <li>thermometer, and</li> <li>spectrophotometer,</li> <li>Binary solvent mixts</li> <li>spectrophotometer,</li> <li>Binary solvent mixts</li> <li>spectrophotometer,</li> <li>Binary solvent mixts</li> <li>weight. Excess solved</li> <li>in glass vials, a</li> <li>for several days</li> <li>Attainment of equiparts</li> <li>saturated solu</li> <li>a coarse filter if flasks, weighed a</li> </ul>	0.00286 al molar concentration (mol are; c ₁ is the molar solubil AUXILIARY /PROCEDURE ture bath, rotator, an ultraviolet/visible c. ixtures were prepared by oblute and solvent placed and allowed to equilibrate at constant temperature. Milibrium was verified by a measurements. Aliquots itions transferred through into tared volumetric and diluted with methanol. atermined spectrophoto-	INFORMATION SOURCE AND PUR (1) 99+ %, Al Milwaukee tallized (2) 99 %, Phi Oklahoma, sieves to	RITY OF MATERIALS: Idrich Chemical Company, a, Wisconsin, USA, was recry from acetone-heptane. illips Petroleum Bartlesvill , USA, was stored over mole- b remove trace water. drich Chemical Company, was	
<pre>* c3^(s): initi solvent mixts solvent mixts EETHOD: APPARATUS, Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in glass vials, a for several days Attainment of equ several duplicate of saturated solt a coarse filter i flasks, weighed a Concentrations do</pre>	0.00286 al molar concentration (mol are; c ₁ is the molar solubil AUXILIARY /PROCEDURE ture bath, rotator, an ultraviolet/visible c. ixtures were prepared by oblute and solvent placed and allowed to equilibrate at constant temperature. Milibrium was verified by a measurements. Aliquots itions transferred through into tared volumetric and diluted with methanol. atermined spectrophoto-	INFORMATION SOURCE AND PUR (1) 99+ %, Al Milwaukee tallized (2) 99 %, Phi Oklahoma, sieves to (3) 99 %, Alc	RITY OF MATERIALS: Idrich Chemical Company, by Wisconsin, USA, was recry from acetone-heptane. Illips Petroleum Bartlesvill , USA, was stored over mole- b remove trace water. drich Chemical Company, was received.	

		ORIGINAL MEASUREMENTS:	
(1) Carbazo	le; C ₁₂ H ₉ N; [86-74-8]	McCargar, J.W.; Acree, W.E., Jr.	
(2) 2,6,10, cosane;	15,19,23-Hexamethyltetra- C ₃₀ H ₆₂ ; [111-01-3]	J. Pharm. Sci. <u>1987</u> , 76, 572-574.	
(3) 1,1-Oxy [142-96	bisbutane; C ₈ H ₁₈ O; -1]		
/ARIABLES:		PREPARED BY: W.E. Acree, Jr., P.R. Naidu and J.W. McCargar	
T/K = 298, Solvent composition			
t = 25.0 °C	VALUES ^a		
x3 ^(s)	<b>x</b> 3	<b>x</b> 1	
0.0000	0.0000	0.000671	
0.1604	0.1602	0.001070	
0.1664	0.1662	0.001081	
0.2687	0.2683	0.001320	
0.4471	0.4463	0.001849	
0.5693	0.5680	0.002340	
0.5757	0.5743	0.002411	
0.6726	0.6708	0.002740	
0.7784	0.7759	0.003209	
0.8289	0.8260	0.003558	
0.9030	0.8992	0.004130	
0.9625	0.9578	0.004701	
1.0000	0.9950	0.005011	
		mole fraction of component 3 in	
	n actually of the solute, $x_3$ nary solution.		
	nary solution.	RY INFORMATION	
the ter	nary solution.	RY INFORMATION SOURCE AND PURITY OF MATERIALS:	
the ter <b>TETHOD: APPA</b> Constant te thermometer spectrophot	NATY Solution. AUXILIA RATUS/PROCEDURE mperature bath, calorimetric , and an ultraviolet/visible	SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal	
the ter definition of the term definition of	AUXILIA AUXILIA RATUS/PROCEDURE mperature bath, calorimetric , and an ultraviolet/visible ometer.	SOURCE AND PURITY OF MATERIALS:	

Components:		ORIGINAL MEASUREMENTS:	
(1) Carbazole; C ₁₂ H	l _g N; [86-74-8]	McCargar, J.W.; Acree, W.E., Jr.	
(2) t-Butylcyclohexane; C ₁₀ H ₂₀ ; [3178-22-1]		J. Solution Chem. <u>1988</u> , 17, 1081-1091.	
<pre>(3) 1,1-Oxybisbuta     [142-96-1]</pre>	ne; C ₈ H ₁₈ O;		
VARIABLES: T/K = 298, Solvent composition		PREPARED BY: W.E. Acree, Jr., P.R. Naidu and J.W. J.W. McCargar	
x3 ^(s)	<i>x</i> 3	×1	
0.0000	0.0000	0.000250	
0.1123	0.1122	0.000643	
0.2103	0.2100	0.001010	
0.3018	0.3014	0.001416	
0.4027	0.4019	0.001915	
0.5065	0.5053	0.002323	
0.6084	0.6067	0.002825	
0.6435	0.6416	0.002972	
0.7975	0.7944	0.003946	
0.8989	0.8949	0.004405	
1.0000	0.9950	0.005011	
	AUXILIARY	INFORMATION	
METHOD: APPARATUS/P	ROCEDURE	SOURCE AND PURITY OF MATERIALS:	
thermometer, and as spectrophotometer. Binary solvent mixt weight. Excess solv in amber glass bott equilibrate for set	re bath, calorimetric n ultraviolet/visible tures were prepared by ute and solvent placed tles and allowed to veral days at constant inment of equilibrium	<ol> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>(2) 99+ %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> </ol>	
was verified by sev measurements and by brium from supersat saturated solutions a coarse filter ini- flasks, weighed and	veral repetitive y approaching equili- turation. Aliquots of s transferred through to tared volumetric d diluted with methanol. ermined spectrophoto-	Components 2 and 3 were stored over molecular sieves and distilled short] before use.	
		ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_3^{(5)}: \pm 0.0001.$ $x_1: \pm 1.5 %$ (relative error).	

COMPONENTS :		ORIGINAL MEASUREMENTS:			
<pre>(1) Carbazole; C₁₂H₁₀N; [86-74-8] (2) 2,2,4-Trimethylpentane; C₈H₁₈; [540-84-1] (3) 1,1-Oxybispentane; C₁₀H₂₂O; [693-65-2] VARIABLES: T/K = 298, Solvent composition</pre>		Anderson, B.D. Ph.D. Dissertation, University of Kansas, Lawrence, Kansas, USA (1978).			
		PREPARED BY: W.E. Acree, Jr.			
				t = 25.0 °C	S ⁸
		C3 ⁽⁸⁾	° ₁	C3 ^(S)	° ₁
0.00000	0.00077	0.9446	0.00276		
0.0186	0.000899	1.455	0.00415		
0.0405	0.000956	1.938	0.00524		
0.0590	0.000972	2.866	0.00881		
0.0910	0.00105	4.002	0.0132		
0.1201	0.00106	4.923	0.0182		
0.2068	0.00124				
0.3993	0.00158				
0.5860	0.00195				
	0.00195				
0.7813 ^a c ₃ ^(s) : initi solvent mixtu	0.00233 al molar concentration (mol are; c ₁ is the molar solubil	. dm ⁻³ ) of the b: ity (mol dm ⁻³ ) o	inary of the solute.		
	0.00233	. dm ⁻³ ) of the b: ity (mol dm ⁻³ ) o	inary of the solute.		
	0.00233 al molar concentration (mol re; c ₁ is the molar solubil	. dm ⁻³ ) of the bi ity (mol dm ⁻³ ) of the bi i	inary of the solute.		
^a c ₃ ^(s) : initi solvent mixtu	0.00233 al molar concentration (mol re; c ₁ is the molar solubil AUXILIARY	INFORMATION	inary of the solute. RITY OF MATERIALS:		
a _{C3} ^(S) : initi solvent mixtu (ETHOD: APPARATUS/ Constant temperat	0.00233 al molar concentration (mol ire; c ₁ is the molar solubil AUXILIARY PROCEDURE ture bath, rotator, an ultraviolet/visible	INFORMATION SOURCE AND PUT (1) 99+ %, A: Milwaukee	RITY OF MATERIALS: ldrich Chemical Company,		
a c3 ⁽⁵⁾ : initi solvent mixtu (ETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in glass vials, s	0.00233 al molar concentration (mol re; c ₁ is the molar solubil AUXILIARY PROCEDURE sure bath, rotator, an ultraviolet/visible sures were prepared by olute and solvent placed and allowed to equilibrate	INFORMATION SOURCE AND PUT (1) 99+ %, A: Milwaukee tallized (2) 99 %, Ph. Oklahoma	RITY OF MATERIALS: ldrich Chemical Company, e, Wisconsin, USA, was recrys-		
<pre>a c3⁽⁵⁾: initi solvent mixtu GETHOD: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in glass vials, a for several days Attainment of equ several duplicate of saturated solu a coarse filter i flasks, weighed a</pre>	0.00233 al molar concentration (mol me; c ₁ is the molar solubil AUTILIARY PROCEDURE ture bath, rotator, an ultraviolet/visible tures were prepared by plute and solvent placed and allowed to equilibrate at constant temperature. illibrium was verified by measurements. Aliquots tions transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	INFORMATION SOURCE AND PUI (1) 99+ %, A: Milwauked tallized (2) 99 %, Ph. Oklahoma sieves to (3) Purity no Bauer, Wi was treat ganate, to and sulfi over cal	RITY OF MATERIALS: ldrich Chemical Company, e, Wisconsin, USA, was recrys- from acetone-heptane. illips Petroleum Bartlesville, USA, was stored over mole-		
<pre>a c3⁽⁵⁾: initi solvent mixtu derhop: APPARATUS/ Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in glass vials, a for several days Attainment of equ several duplicate of saturated solu a coarse filter i flasks, weighed a Concentrations de</pre>	0.00233 al molar concentration (mol me; c ₁ is the molar solubil AUTILIARY PROCEDURE ture bath, rotator, an ultraviolet/visible tures were prepared by plute and solvent placed and allowed to equilibrate at constant temperature. illibrium was verified by measurements. Aliquots tions transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	INFORMATION SOURCE AND PUI (1) 99+ %, A: Milwauked tallized (2) 99 %, Ph. Oklahoma sieves to (3) Purity no Bauer, Wi was treat ganate, to and sulfi over cal	RITY OF MATERIALS: ldrich Chemical Company, e, Wisconsin, USA, was recrys- from acetone-heptane. illips Petroleum Bartlesville, , USA, was stored over mole- o remove trace water. ot specified, Pfaltz and aterbury, Connecticut, USA, ted with potassium perman- washed with distilled water uric acid solution, dried cium chloride and distilled before use.		

(1) Carbaroles C		ORIGINAL MEASUREMENTS:	
(1) Carbazole; C ₁₂ H ₉ N; [86-74-8]		Acree, W.E., Jr.; McCargar, J.W.;	
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]		Zvaigzne, A.I.; Teng, IL.	
(3) Tetrahydropyran; C ₅ H ₁₀ O; [142-68-7]		Phys. Chem. Liq. <u>1991</u> , 23, 27-35.	
VARIABLES: T/K = 298, Solvent composition		PREPARED BY: W.E. Acree, Jr., P.R. Naidu and J.W. McCargar	
x3 ^(s)	×3	×1	
0.0000	0.000	0.000139	
0.1442	0.1439	0.002243	
0.2555	0.2542	0.005188	
0.3674	0.3642	0.008676	
0.4701	0.4642	0.01259	
0.5741	0.5640	0.01761	
0.6684	0.6533	0.02257	
0.8405	0.8138	0.03180	
0.9262	0.8913	0.03763	
1.0000	0.9572	0.04284	
^a x3 ^(s) : init fraction sol the ternary		solvent mixture; x ₁ : mole mole fraction of component 3 in	
fraction sol	ubility of the solute; x3: n	solvent mixture; x ₁ : mole mole fraction of component 3 in	
fraction sol	ubility of the solute; x ₃ : r solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION	
fraction sol	ubility of the solute; x ₃ : r solution. AUXILIARY	mole fraction of component 3 in	
fraction sol the ternary METHOD: APPARATUS Constant tempera	AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY	NOLE fraction of component 3 in INFORMATION	
fraction sol the ternary METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for	AUXILIARY AUXILIARY S/PROCEDURE AUXILIARY S/PROCEDURE AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIA	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) 99 %, Aldrich Chemical Company. (3) 99 %, anhydrous, Aldrich Chemical	
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COMPONENTS:		ORIGINAL MEASUREMENTS:	
(1) Carbazole; C ₁₂ H ₉ N; [86-74-8]		Acree, W.E., Jr.; McCargar, J.W.; Zvaigzne, A.I.; Teng, IL.	
(2) n-Heptane; C ₇ H ₁₆ ; [142-82-5]		Phys. Chem. Lig. <u>1991</u> , 23, 27-35.	
(3) Tetrahydropyran; C ₅ H ₁₀ O; [142-68-7]		Phys. Chem. Liq. <u>1991</u> , 23, 27-35.	
VARIABLES: T/K = 298, Solvent composition		PREPARED BY: W.E. Acree, Jr., P.R. Naidu and J.W. McCargar	
×3 ⁽⁸⁾	×3	×ı	
0.0000	0.0000	0.000173	
0.0480	0.0480	0.000496	
0.1188	0.1187	0.001142	
0.2475	0.2468	0.002993	
0.3656	0.3637	0.005155	
0.5020	0.4973	0.009344	
0.5988	0.5905	0.01381	
0.7161	0.7012	0.02081	
0.8172	0.7941	0.02821	
0.9119	0.8790	0.03608	
1.0000	0.9572	0.04284	
	AUXILIARY	INFORMATION	
METHOD: APPARATUS	PROCEDURE	SOURCE AND PURITY OF MATERIALS:	
	ture bath, calorimetric an ultraviolet/visible r.	<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> </ul>	
weight. Excess so in amber glass b equilibrate for temperature. At was verified by measurements and brium from super- saturated solution a coarse filter flasks, weighed	ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. atermined spectrophoto- 2 nm.	<ul> <li>(2) HPLC Grade, 99+ %, Aldrich Chemical Company.</li> <li>(3) 99 %, anhydrous, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled short: before use.</li> </ul>	
		ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_{3}^{(8)}: \pm 0.0001.$ $x_{1}: \pm 2-4$ % (relative error; 2 % for smaller $x_{1}$ ; 4 % for larger $x_{1}$ ).	

COMPONENTS :	ORIGINAL MEASUREMENTS:		
(1) Carbazole; C ₁₂ H ₉ N; [86-74-8]	Acree, W.E., Jr.; McCargar, J.W.;		
(2) n-Hexadecane; $C_{16}H_{34}$ ; [544-76-3]	Zvaigzne, A.I.; Teng, IL.		
(3) Tetrahydropyran; C ₅ H ₁₀ O;	Phys. Chem. Liq. <u>1991</u> , 23, 27-35.		
[142-68-7]			
VARIABLES:	<b>PREPARED BY:</b> W.E. Acree, Jr., P.R. Naidu and J.W. McCargar		
T/K = 298, Solvent composition			
EIPERIMENTAL VALUES ⁸ t = 25.0 °C			
x ₃ ^(\$) x ₃	<b>x</b> 1		
0.0000 0.0000	0.000414		
0.0745 0.0744	0.000985		
0.1539 0.1536	0.001723		
0.2686 0.2678	0.003019		
0.3531 0.3516	0.004235		
0.4315 0.4291	0.005579		
0.5332 0.5289	0.007994		
0.6396 0.6318	0.01215		
0.7495 0.7359	0.01812		
0.8487 0.8277	0.02473		
0.9411 0.9087	0.03439		
1.0000 0.9572	0.04284		
^a $x_3^{(s)}$ ; initial mole fraction of bina fraction solubility of the solute; $x_3$ the ternary solution.	3: mole fraction of component 3 in		
AUXILI	ARY INFORMATION		
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:		
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.		
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant	(2) 99 %, Aldrich Chemical Company, was used as received.		
temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with tetra- chloromethane. Concentrations determined spectrophotometrically at 292 nm.	(3) 99 %, anhydrous, Aldrich Chemical Company, was stored over molecular sieves and distilled shortly before use.		
	ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_3^{(s)}: \pm 0.0001.$ $x_1: \pm 2-4$ % (relative error; 2 % for smaller $x_1$ ; and 4 % for larger $x_1$ ).		

		ORIGINAL MEASUREMENTS:					
COMPONENTS: (1) Carbazole; C ₁₂ H ₉ N; [86-74-8] (2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7] (3) Tetrahydropyran; C ₅ H ₁₀ O; [142-68-7]		Acree, W.E., Jr.; McCargar, J.W.; Zvaigzne, A.I.; Teng, IL. Phys. Chem. Liq. <u>1991</u> , 23, 27-35.					
				VARIABLES: T/K = 298, Solvent composition		PREPARED BY: W.E. Acree, Jr., P.R. Naidu and J.W. McCargar	
x3 ^(\$)	<b>x</b> 3	<i>x</i> 1					
0.0000	0.0000	0.000183					
0.1192	0.1190	0.001509					
0.2183	0.2176	0.003271					
0.3270	0.3250	0.006033					
0.3861	0.3831	0.007828					
0.5230	0.5161	0.01325					
0.6259	0.6144	0.01832					
0.6259	0.0144						
		0.02339					
	0.7920	0.03082					
0.8172	0.000						
0.9079 1.0000 ^a x _x ^(s) : initi	0.8738 0.9572 al mole fraction of binary ubility of the solute; $x_3$ ; m solution.	0.03761 0.04284 solvent mixture; x ₁ : mole mole fraction of component 3 in					
0.9079 1.0000 ^a x ₃ ^(s) : initi fraction solu	0.9572 al mole fraction of binary ubility of the solute; $x_{\tau}$ : n	0.04284 solvent mixture; x.: mole					
0.9079 1.0000 ^a x ₃ ^(s) ; initi fraction solu	0.9572 al mole fraction of binary ubility of the solute; $x_3$ : n solution.	0.04284 solvent mixture; x.: mole					
0.9079 1.0000 ^a x ₃ ^(s) : initi fraction solu	0.9572 al mole fraction of binary ubility of the solute; $x_3$ : n solution. AUXILIARY	0.04284 solvent mixture; x ₁ : mole mole fraction of component 3 in					
0.9079 1.0000 a x ₃ (s); initi fraction soluthe ternary of the ternary of <b>ETHOD: APPARATUS,</b> Constant temperate thermometer, and spectrophotometer	0.9572 Lal mole fraction of binary ubility of the solute; x ₃ : n solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible f.	0.04284 solvent mixture; x ₁ : mole hole fraction of component 3 in INFORMATION					
0.9079 1.0000 * x ₃ (s); initi fraction solution the ternary solution <b>ETHOD: APPARATUS</b> , Constant temperate thermometer, and spectrophotometers Binary solvent mi weight. Excess so in amber glass bo	0.9572 al mole fraction of binary ubility of the solute; x ₃ : n solution. AUXILIARY /PROCEDURE cure bath, calorimetric an ultraviolet/visible	0.04284 solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-					
0.9079 1.0000 a x3 ^(s) : initi fraction solution the ternary is <b>GETHOD: APPARATUS</b> , Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for a temperature. Att	0.9572 al mole fraction of binary ubility of the solute; x ₃ : n solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible c. ixtures were prepared by obute and solvent placed ottles and allowed to	0.04284 solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9 %, Aldrich Chemical					
0.9079 1.0000 * x3 ^(s) : initi fraction soluthe ternary is the ternary is <b>GETHOD: APPARATUS</b> , Constant temperat thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from supers saturated solutio a coarse filter i flasks, weighed s	0.9572 al mole fraction of binary ublity of the solute; x ₃ : n solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible formed by a constant animent of equilibrium several days at constant animent of equilibrium several days at constant animent of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. termined spectrophoto-	<pre>0.04284 solvent mixture; x₁: mole nole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9 %, Aldrich Chemical Chemical Company. (3) 99 %, anhydrous, Aldrich Chemical</pre>					

(1) Carbazole. C		ORIGINAL MEASUREMENTS:					
<ul> <li>(1) Carbazole; C₁₂H₉N; [86-74-8]</li> <li>(2) 2,2,4-Trimethylpentane; C₈H₁₈; [540-84-1]</li> <li>(3) Tetrahydropyran; C₅H₁₀O; [142-68-7]</li> </ul>		Acree, W.E., Jr.; McCargar, J.W.; Zvaigzne, A.I.; Teng, IL. Phys. Chem. Liq. <u>1991</u> , 23, 27-35.					
				VARIABLES: T/K = 298, Solvent composition		PREPARED BY: W.E. Acree, Jr., P.R. Naidu and J.W. McCargar	
				×3 ^(s)	*3	×1	
0.0000	0.0000	0.000126					
0.1394	0.1393	0.001041					
0.2076	0.2073	0.001652					
0.3032	0.3023	0.002863					
0.3949	0.3931	0.004538					
0.5021	0.4984	0.007441					
0.6073	0.6004	0.01138					
0.6992	0,6880	0.01602					
0.8007	0,7823	0.02297					
0.9032	0.8742	0.03210					
1.0000 ^a x ₃ ^(s) : init fraction sol the ternary	0.9572 ial mole fraction of binary ubility of the solute; $x_3$ : r solution.	0.04284 solvent mixture; $x_i$ : mole mole fraction of component 3 in					
^a x ₃ ^(s) : init fraction sol	ial mole fraction of binary ubility of the solute; $x_x$ :	solvent mixture; x,: mole					
^a x ₃ ^(s) : init fraction sol	ial mole fraction of binary ubility of the solute; $x_3$ : r solution.	solvent mixture; x,: mole					
a x3 ^(s) : init fraction sol the ternary	ial mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY	solvent mixture; x;: mole mole fraction of component 3 in					
<ul> <li>* x3⁽⁵⁾: init fraction sol the ternary</li> <li>4ETHOD: APPARATUS</li> <li>Constant temperative thermometer, and spectrophotomete</li> <li>Binary solvent mathematical</li> </ul>	ial mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY C/PROCEDURE ature bath, calorimetric an ultraviolet/visible r. hixtures were prepared by	Solvent mixture; x,: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.					
<ul> <li>* x3⁽⁵⁾: init fraction sol the ternary</li> <li>************************************</li></ul>	ial mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY S/PROCEDURE ature bath, calorimetric an ultraviolet/visible er. hixtures were prepared by solute and solvent placed bottles and allowed to several days at constant tainment of equilibrium several repetitive	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-					
<ul> <li>* x3⁽⁵⁾: init fraction sol the ternary</li> <li>METHOD: APPARATUS</li> <li>Constant temperat thermometer, and spectrophotometer</li> <li>Binary solvent n weight. Excess so in amber glass t equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter</li> </ul>	ial mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIA	<pre>solvent mixture; x,: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) 99 %, anhydrous, Aldrich Chemical</pre>					
<ul> <li>* x3⁽⁵⁾: init fraction sol the ternary</li> <li>METHOD: APPARATUS</li> <li>Constant temperative thermometer, and spectrophotometer</li> <li>Binary solvent n weight. Excess s</li> <li>in amber glass b</li> <li>equilibrate for temperature. At was verified by measurements and brium from super saturated soluti</li> <li>a coarse filter</li> <li>flasks, weighed</li> <li>Concentrations d</li> </ul>	ial mole fraction of binary ubility of the solute; x ₃ : r solution. AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIARY AUXILIA	<pre>solvent mixture; x; mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) 99 %, anhydrous, Aldrich Chemical Company. (3) 99 %, anhydrous, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled short1</pre>					

Components :		ORIGINAL MEASUREMENTS:	
(1) Carbazole; C ₁₂ H ₉ N; [86-74-8]		Acree, W.E., Jr.; McCargar, J.W.; Zvaigzne, A.I.; Teng, IL.	
(2) t-Butylcyclohexane; C ₁₀ H ₂₀ ; [3178-22-1]		Phys. Chem. Lig. <u>1991</u> , 23, 27-35.	
[3178-22-1] (3) Tetrahydropyran; C ₅ H ₁₀ O;			
[142-68-7]			
VARIABLES: T/K = 298, Solvent composition		<b>PREPARED BY:</b> W.E. Acree, Jr., P.R. Naidu and J.W. McCargar	
*3 ⁽⁸⁾	<b>x</b> 3	<b>x</b> 1	
0.0000	0.0000	0.000250	
0.0889	0.0888	0.001087	
0.1997	0.1992	0.002499	
0.3093	0.3079	0.004449	
0.4025	0.3998	0.006748	
0.4873	0.4829	0.009092	
0.6116	0.6029	0.01419	
0.7072	0.6931	0.01992	
0.8036	0.7831	0.02549	
0.9041	0.8737	0.03361	
1.0000	0.9572	0.04284	
	AUXILIARY	INFORMATION	
METHOD: APPARATUS	/procedure	SOURCE AND PURITY OF MATERIALS:	
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to		<ol> <li>99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>99+ %, Aldrich Chemical Company.</li> </ol>	
equilibrate for a temperature. Att was verified by a measurements and brium from supers saturated solutio a coarse filter i flasks, weighed a	several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<ul> <li>(3) 99 %, anhydrous, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shorth before use.</li> </ul>	
		ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_3^{(5)}: \pm 0.0001.$ $x_1: \pm 2-4$ % (relative error; 2 % for smaller $x_1$ ; 4 % for larger $x_1$ ).	

Components :		ORIGINAL MEASUREMENTS:			
(1) Carbazole; C	(1) Carbazole; C ₁₂ H ₁₀ N; [86-74-8]		Anderson, B.D.		
<pre>(2) 2,2,4-Trimethylpentane; C₈H₁₈; [540-84-1]</pre>		Ph.D. Dissertation, University of Kansas, Lawrence, Kansas, USA (1978).			
<pre>(3) Trichloromethane; CHCl₃; [67-66-3]</pre>					
/ARIABLES:		PREPARED BY:			
T/K = 298, Solvent composition		W.E. Acree,	Tr		
		H.E. ACLES,			
EXPERIMENTAL VALU t = 25.0 °C	ES ^a				
c3 ^(s)	c ₁	c3 ^(s)	c ₁		
0.00000	0.00077	0.7838	0.00130		
0.01030	0.000762	0.9948	0.00141		
0.02132	0.000783	1.4740	0.00187		
0.04185	0.000780	1.9654	0.00244		
0.0698	0.000799	2.5007	0.00324		
0.0996	0.000815	2.9785	0.00395		
0.1548	0.000842	4.0055	0.00582		
0.2037	0.000859	5.9623	0.0115		
0.2523	0.000898	8.3823	0.0214		
0.3014	0.000918	10.2973	0.0337		
0.3949	0.000933	12.396	0.0468		
0.5023	0.00126				
0.5904	0.00118				
	al molar concentration (mol ure; c ₁ is the molar solubil	INFORMATION			
METHOD: APPARATUS	PROCEDURE	SOURCE AND PUT	RITY OF MATERIALS:		
	ture bath, rotator, an ultraviolet/visible r.	Milwaukee tallized	ldrich Chemical Company, a, Wisconsin, USA, was recrys from acetone-heptane.		
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass vials, and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several duplicate measurements. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 292 nm.		<ul><li>(3) Purity not specified, Fisher Scien- tific, Pittsburgh, Pennsylvania, USA</li></ul>			
		ESTIMATED ERRO T/K: precision $c_3^{(s)}$ : 4 sig. $c_1$ : $\pm$ 3 % (respectively be a set of the set of th	DRS: on ± 0.1 (compiler). figs. (compiler). Plative error; compiler).		

(1) Carbazole: C		ORIGINAL MEASUREMENTS:			
(1) Carbazole; C ₁₂ H ₉ N; [86-74-8]		Acree, W.E., Jr.; McCargar, J.W.			
(2) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]		J. Pharm. Sci. <u>1987</u> , 76, 575-579.			
(3) 1-Chlorohexa [544-10-5]	ne; C ₆ H ₁₃ Cl;				
VARIABLES:		PREPARED BY:			
T/K = 298, Solve	nt composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar			
EXPERIMENTAL VALU t = 25.0 °C	ES ⁸				
*2 ^(s)	<b>x</b> 2	<b>x</b> 1			
0.0000	0.0000	0.00255			
0.0853	0.0850	0.00335			
0.1727	0.1720	0.00396			
0.2722	0.2709	0.00461			
0.3475	0.3457	0.00509			
0.4481	0.4458	0.00510			
0.5491	0.5462	0.00526			
0.6531	0.6496	0.00533			
0.7594	0.7554	0.00532			
0.8725	0.8679	0.00530			
1.0000	0.9950	0.00501			
	AUXILIARY	INFORMATION			
METHOD: APPARATUS		INFORMATION SOURCE AND PURITY OF MATERIALS:			
Constant tempera thermometer, and spectrophotomete	/PROCEDURE ture bath, calorimetric an ultraviolet/visible r.				
Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	/PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-			

(1) Carbaroles C		ORIGINAL MEASUREMENTS:		
(1) Carbazole; C ₁₂ H ₉ N; [86-74-8]		McCargar, J.W.; Acree, W.E., Jr.		
(2) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]		J. Solution Chem. <u>1989</u> , 18, 151-158.		
(3) 1-Chlorooctane; C _g H ₁₇ Cl;				
[111-85-3]	•			
VARIABLES:		PREPARED BY:		
T/K = 298, Solve	ent composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar		
EXPERIMENTAL VALU	es ⁸			
x2 ^(s)	*2	<b>x</b> 1		
0.0000	0.0000	0.00242		
0.1102	0.1099	0.00317		
0.2004	0.1996	0.00385		
0.3017	0.3004	0.00438		
0.3994	0.3975	0.00479		
0.5056	0.5030	0.00518		
0.6027	0.5995	0.00532		
0.6938	0.6901	0.00536		
0.7907	0.7865	0.00537		
0.8950	0.8903	0.00527		
1.0000	0.9950	0.00501		
the ternary				
Lie Lernary		INFORMATION		
the ternary	AUXILIARY	INFORMATION SOURCE AND PURITY OF MATERIALS:		
METHOD: APPARATUS Constant tempera	AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible			
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by	AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) 99 %, Aldrich Chemical Comapny, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company was stored over molecular sieves and distilled shortly before use.</li> </ul>		
METHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	AUXILIARY AUXILIARY ture bath, calorimetric an ultraviolet/visible r. dixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol.	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) 99 %, Aldrich Chemical Comapny, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>(2) Gold Label, 99+ %, Aldrich Chemical Company was stored over molecular sieves and distilled shortly before</li> </ul>		

(1) Carbazole: C		ORIGINAL MEASUREMENTS:		
(1) Carbazole; C ₁₂ H ₉ N; [86-74-8]		McCargar, J.W.; Acree, W.E., Jr.		
<pre>(2) 1,1-Oxybisbutane; C₈H₁₈O; [142-96-1] (3) 1-Chlorotetradecane; C₁₄H₂₉Cl; [2425-54-9]</pre>		J. Solution Chem. <u>1989</u> , 18, 151-158.		
VARIABLES:		PREPARED BY:		
T/K = 298, Solvent	composition	W.E. Acree, Jr., P.R. Naidu and J.W. McCargar		
EXPERIMENTAL VALUES t = 25.0 °C	3 ^a			
x2 ^(s)	*2	×1		
0.0000	0.0000	0.00240		
0.1296	0.1292	0.00306		
0.2272	0.2264	0.00356		
0.3220	0.3207	0.00418		
0.4069	0.4050	0.00457		
0.5140	0.5115	0.00486		
0.6135	0.6103	0.00523		
0.7079	0.7043	0.00512		
0.8072	0.8031	0.00513		
0.8973	0.8928	0.00505		
1.0000	0.9950	0.00501		
	AUXILIAR	( INFORMATION		
METHOD: APPARATUS/F		SOURCE AND PURITY OF MATERIALS:		
	PROCEDURE are bath, calorimetric an ultraviolet/visible			
Constant temperatu thermometer, and a spectrophotometer. Binary solvent mix- weight. Excess sol in amber glass bot equilibrate for se temperature. Attas was verified by se measurements and t brium from superse saturated solution a coarse filter in flasks, weighed an	PROCEDURE are bath, calorimetric an ultraviolet/visible ctures were prepared by ute and solvent placed to everal days at constant ainment of equilibrium averal repetitive by approaching equili- aturation. Aliquots of ns transferred through to tared volumetric ad diluted with tetra- ncentrations determined	SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-		

(1) Carbonalas C		ORIGINAL MEASUREMENTS:
(1) Carbazole; C ₁₂ H ₉ N; [86-74-8]		McCargar, J.W.; Acree, W.E., Jr.
(2) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]		J. Solution Chem. <u>1989</u> , 18, 151-158.
(3) Chlorocyclof [542-18-7]	nexane; C ₆ H ₁₁ Cl;	
VARIABLES: T/K = 298, Solvent composition		PREPARED BY:
		W.E. Acree, Jr., P.R. Naidu and J.W. McCargar
t = 25.0 °C	æs ^a	· · · · · · · · · · · · · · · · · · ·
x2 ^(s)	x ₂	×1
0.0000	0.0000	0.00291
0.0799	0.0796	0.00385
0.1903	0.1894	0.00489
0.2947	0.2931	0.00543
0.4116	0.4091	0.00596
0.5138	0.5108	0.00591
0.6156	0.6119	0.00598
0.7023	0.6982	0.00585
0.7935	0.7890	0.00571
0.8895	0.8847	0.00538
1.0000	0.9950	0.00501
	AUXILIARY	INFORMATION
ETHOD: APPARATUS		INFORMATION SOURCE AND PURITY OF MATERIALS:
Constant tempera	S/PROCEDURE Ature bath, calorimetric an ultraviolet/visible	
Constant tempera thermometer, and spectrophotometer Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed	B/PROCEDURE Ature bath, calorimetric an ultraviolet/visible er. hixtures were prepared by solute and solvent placed bottles and allowed to several days at constant tainment of equilibrium several repetitive a by approaching equili- isaturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. letermined spectrophoto-	SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal

		ORIGINAL MEASUREMENTS:			
	1) Carbazole; C ₁₂ H ₁₀ N; [86-74-8]		Anderson, B.D.		
(2) 2,2,4-Trimethylpentane; C ₈ H ₁₈ ; [540-84-1]		Ph.D. Dissertation, University of Kansas, Lawrence, Kansas, USA (1978).			
(3) 1-Butanol; C ₄ H ₁₀ O; [71-36-3]					
VARIABLES:	ARIABLES:		PREPARED BY:		
T/K = 298, Solvent composition		W.E. Acree, Jr.			
EXPERIMENTAL VALUE	ES ^a				
c _z ^(s)	c,	C ₃ ^(S)	c,		
0.00000	0.00077	0.6219	0.00342		
0,00606	0.000767	0.8034	0.00442		
0.00902	0.000781	1.0010	0.00543		
0.01868	0.000808	1.0031	0.00542		
0.03030	0.000845	1.5196	0.00831		
0.04519	0.000939	1.9594	0.0104		
0.07571	0.00110	3.0962	0.0162		
0.1119	0.00128	4.0244	0.0205		
0.1564	0.00146	6.0554	0.0297		
0.2031	0.00166	8.0068	0.0375		
0.3031	0.00210	10.874	0.0493		
0.3958	0.00262		•••••		
0.3990	0.00267				
0.6001	0.00366				
a C3 ^(S) : initi solvent mixt	al molar concentration (mol ure; c ₁ is the molar solubil	. dm ⁻³ ) of the bi ity (mol dm ⁻³ ) o	Inary of the solute.		
	AUXILIARY	INFORMATION			
METHOD: APPARATUS	/procedure	SOURCE AND PUR	RITY OF MATERIALS:		
	ture bath, rotator, an ultraviolet/visible r.	<ul> <li>(1) 99+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was recrys tallized from acetone-heptane.</li> </ul>			
weight. Excess so	ixtures were prepared by olute and solvent placed and allowed to equilibrate	(2) 99 %, Phi Oklahoma,	illips Petroleum Bartlesville, , USA.		
for several days Attainment of equiseveral duplicate	at constant temperature. uilibrium was verified by e measurements. Aliquots	(3) puriss, 99.5 %, Fluka Chemical Corporation, Ronkonkoma, New York, USA.			
a coarse filter : flasks, weighed a	utions transferred through into tared volumetric and diluted with methanol. etermined spectrophoto- 2 nm.		ts 2 and 3 were stored over r sieves to remove trace		
		ESTIMATED ERR	DRS:		
	,	$T/K: \text{ precisions} c_3^{(s)}: \text{ to } 4 \text{ since } c_1: \pm 3 \text{ so } (red)$	on ± 0.1 (compiler). ig. figs. (compiler). lative error; compiler).		

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COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Carbazole; C ₁₂ H ₁₀ N; [86-74-8]	Anderson, B.D.
(2) 2,2,4-Trimethylpentane; C ₈ H ₁₈ ; [540-84-1]	Ph.D. Dissertation, University of Kansas, Lawrence, Kansas, USA (1978).
(3) 1-Octanol; C ₈ H ₁₈ O; [111-87-5]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.

#### $t = 25.0 \, ^{\circ}C$ $c_{\tau}^{(s)}$ c,(s) $\sigma_1$ C1 0.00000 0.00077 0.03897 0.000992 0.00524 0.000792 0.00111 0.05931 0.01020 0.000828 0.00123 0.08065 0.01085 0.000786 0.00153 0.1226 0.2120 0.01206 0.000810 0.00209 0.000812 0.01360 0.4360 0.00336 0.01425 0.000840 0.00490 0.6914 0.000839 0.01517 0.7780 0.00587 0.01635 0.000840 1.033 0.00704 0.01762 0.000822 1.970 0.0145 0.01847 0.000874 0.0225 2.958 0.02070 0.000894 3.941 0.0315 0.02248 0.000857 4.997 0.0404 0.02516 0.000874 6.313 0.0515 0.02778 0.00101

^a  $c_3^{(s)}$ : initial molar concentration (mol dm⁻³) of the binary solvent mixture;  $c_1$  is the molar solubility (mol dm⁻³) of the solute.

### AUXILIARY INFORMATION

## Constant temperature bath, rotator, thermometer, and an ultraviolet/visible spectrophotometer.

METHOD: APPARATUS/PROCEDURE

Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass vials, and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several duplicate measurements. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-metrically at 292 nm.

### SOURCE AND PURITY OF MATERIALS:

- (1) 99+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was recrystallized from acetone-heptane.
- (2) 99 %, Phillips Petroleum Bartlesville, Oklahoma, USA.
- (3) 99+ %, Aldrich Chemical Company.

Components 2 and 3 were stored over molecular sieves to remove trace water.

ESTIMATED ERRORS:

T/K: precision  $\pm$  0.1 (compiler).  $c_3^{($)}$ : 4 sig. figs. (compiler).  $c_1$ :  $\pm$  3 % (relative error; compiler).

EXPERIMENTAL VALUES⁸

Components :		ORIGINAL MEASUREMENTS:		
(1) Carbazole; C ₁₂ H ₁	₀ N; [86-74-8]	Smutek, M.; Fris, M.; Fohl, J.		
<pre>(2) Trichloromethane; CHCl₃; [67-66-3] (3) Benzene; C₆H₆; [71-43-2]</pre>		Collection Czech. Chem. Commun., <u>1967</u> , 32, 931-943.		
VARIABLES:		PREPARED BY:		
T/K = 298, Solvent	Composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne		
EXPERIMENTAL VALUES ⁸ t = 25.0 °C				
x2 ^{(s),b}	x ₂ x	1		
0.000	-	.00478		
0.246	0.245 0	.00411		
0.396	0.394 0	.00396		
0.567	0.565 0	.00398		
1.000	0.995 0	.00412		
	AUXILIA	RY INFORMATION		
METHOD: APPARATUS/PRO		RY INFORMATION SOURCE AND FURITY OF MATERIALS:		
weight. Excess solut in closed glass cont to equilibrate for a constant temperature ated solutions were	DCEDURE a bath, thermometer, ance. ares were prepared by the and solvent placed ainers and allowed several hours at a. Aliquots of satur- transferred into a weighed. Solubili- l from the weight of hich remained after			

COMPONENTS :			ORIGINAL MEASUREMENTS:			
(1) Carbazole; C ₁₂ H ₁₀ N; [86-74-8]			Smutek, M.; Fris, M.; Fohl, J.			
<pre>(2) Tetrachloromethane; CCl₄;   [56-23-5]</pre>			Collection Czech. Chem. Commun. <u>1967</u> , 32, 931-943. PREPARED BY:			
(3) Benzene; C ₆ H ₆ ; [71-43-2]						
VARIABLES: T/K = 293 and 298 Solvent Composition		PREPARED 1				
		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne				
EXPERIMENTAL t = 20.0 °C	VALUES ^a	t	= 25 °C			
x2 ^{(s),b}	×2	<i>x</i> 1	x2 ^{(s),b}	*2	×1	
0.000	0.000	0.00352	0.000	0.000 .	0.00412	
0.145	0.145	0.00327	0.203	0.202	0.00328	
0.203	0.202	0.00278	0.337	0.336	0.00286	
0.336	0.335	0.00257	0.504	0.503	0.00242	
0.504	0.503	0.00203	1.000	0.999	0.000899	
1.000	0.999	0.000659				
	ed by compile	9F.				
	ed by compile	9F.				
	ed by compile		Y INFORMATIO	N		
(ETHOD: APPAR		AUXILIAR	T	N D PURITY OF 1	MATERIALS:	
and a precis Binary solve weight. Exce in closed gl to equilibra constant tem ated solutio tared contai ties were ca the solid re	ATUS/PROCEDUI perature bath ion balance. nt mixtures w ss solute and ass containen te for severa perature. Ali ns were trans ners and weig lculated from	AUXILIAR RE h, thermometer, were prepared by d solvent placed rs and allowed al hours at iquots of satur- sferred into ghed. Solubili- n the weight of remained after	SOURCE AND (1) coal seve; pyric a fin (2) 99 % puri: (3) 99 %	D PURITY OF I tar extract ral times fro dine, and the nal purity of , Commercial fication mether , Commercial	, was recrystallized om toluene and en sublimed to give	

COMPONENTS :			ORIGINAL N	ORIGINAL MEASUREMENTS: Smutek, M.; Fris, M.; Fohl, J. Collection Czech. Chem. Commun. <u>1967</u> ,		
(1) Carbazole; C ₁₂ H ₁₀ N; [86-74-8]		Smutek, M				
(2) Tetrachloromethane; CCl ₄ ; [56-23-5]			Collectic 32, 931-9			
(3) Methylbenzene; C ₇ H ₈ ; [108-88-3]		52, 531				
WARIABLES:	12 and 222			PREPARED BY: W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne		
T/K = 293, 3 Solvent	Composition					
EXPERIMENTAL $t = 20.0$ °C	VALUES ^a			<u> </u>		
x2 ^{(s),b}	x2	×1	x2 ^{(s),b}	×,	<i>x</i> 1	
0.000	0.000	0.00374	0.642	0.640	0.00292	
0.166	0.166	0.00293	0.844	0.842	0.00213	
0.375	0.374	0.00232	1.000	0.998	0.00165	
0.473	0.472	0.00205				
0.642	0.641	0.00152				
0.844	0.843	0.00107	t = 60 °C			
1.000 0.999	0.000659	0.000	0.000	0.0111		
			0.084	0.083	0.0102	
			0.166	0.164	0.00941	
t = 40 °C			0.375	0.372	0.00800	
0.000	0.000	0.00666	0.642	0.638	0.00585	
0.083	0.083	0.00590	0.844	0.840	0.00445	
0.166	0.165	0.00530	1.000	0.996	0.00377	
0.375	0.373	0.00418				
0.473	0.471	0.00393				
fraction	initial mole solubility ( ary solution	fraction of binance $f$ the solute; $x$	ary solvent mix 2: mole fractic	ture; x ₁ : mo on of compone	le ent 2 in	
^b comput	ed by compile	er.				
<u></u>		AUXILI	ARY INFORMATION	4	<u></u>	
ETHOD: APPAR	ATUS/PROCEDU	RE	SOURCE ANI	D PURITY OF 1	ATERIALS:	
Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after the solvent had evaporated.		(2) 99 %, pyric a fir pyric a fir 99 %, 99 %,	<ul> <li>(1) coal tar extract, was recrystallized several times from toluene and pyridine, and then sublimed to give a final purity of 98.3 %.</li> <li>(2) 99 %, Commercial sample, source and purification method was not specified</li> <li>(3) 99 %, Commercial sample, source and purification method was not specified</li> </ul>			
			x ₂ : ± 0.0	cision ± 0.0		

COMPONENTS:			
COMPONENTS: (1) Carbazole; C ₁₂ H ₁₀ N; [86-74-8] (2) Tetrachloromethane; CCl ₄ ; [56-23-5] (3) 1,4-Dimethylbenzene; C ₈ H ₁₀ ; [106-42-3]		ORIGINAL MEASUREMENTS: Smutek, M.; Fris, M.; Fohl, J. Collection Czech. Chem. Commun. <u>1967</u> , 32, 931-943.	
VARIABLES: T/K = 298, Solvent Composition		PREPARED BY: W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne	
EXPERIMENTAL VALUES ⁴ t = 25.0 °C $x_2^{(s),b}$ 0.000 0.256 0.408 0.580 1.000 ^a $x_2^{(s)}$ : initial fraction solubit the ternary sol ^b computed by c	$x_2$ $x_1$ 0.000       0.0         0.255       0.0         0.407       0.0         0.579       0.0         0.999       0.0         mole fraction of binary         tution.	00483 00396 00315 00242 000772 solvent mixture; x ₁ : mole mole fraction of component 2 in	

omponents:		ORIGINAL MEASUREMENTS:				
(1) Carbazol	1) Carbazole; C ₁₂ H ₁₀ N; [86-74-8]		Smutek, M.; Fris, M.; Fohl, J. Collection Czech. Chem. Commun. <u>1967</u> , 32, 931-943.			
(2) Pyridine	2) Pyridine; C ₅ H ₅ N; [110-86-1]					
(3) Methylbenzene; C ₇ H ₈ ; [108-88-3]		32, 931-943.				
ARIABLES:			PREPARED BY:			
T/K = 293, 313 and 333 Solvent Composition		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne				
t = 20.0 °C	VALUES ^a		- ⊧ 40 °c		······································	
x ₂ ^{(s),b}	×2	x ₁	x ₂ ^{(s),b}	<b>x</b> 2	×1	
0.000	0.000	0.00375	0.000	0.000	0.00666	
0.057	0.057	0.00737	0.115	0.113	0.0163	
0.077	0.076	0.00854	0.280	0.269	0.0385	
0.114	0.113	0.0120	0.538	0.503	0.0648	
0.170	0.167	0.0167	0.778	0.708	0.0895	
0.226	0.221	0.0208	1.000	0.890	0.110	
0.280	0.272	0.0290	1.000			
0.538	0.510	0.0513				
0.777	t		≈ 60 °C			
1.000	0.910	0.0895	0.000	0.000	0.0111	
			0.115	0.112	0.0236	
			0.279	0.265	0.0516	
			0.538	0.494	0.0824	
			0.777	0.690	0.112	
			1.000	0.862	0.138	
the terr	a solubility ary solution ed by compile		mole fractio	on of compone	nt 2 in	
		AUXILIARY	INFORMATION	8		
ETHOD: APPAP	LATUS/PROCEDU	RE	SOURCE ANI	D PURITY OF	ATERIALS:	
Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by reight. Excess solute and solvent placed on closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ited solutions were transferred into ared containers and weighed. Solubili- ies were calculated from the weight of the solid residue which remained after the solvent had evaporated.		<ul> <li>(1) coal tar extract, was recrystallize several times from toluene and pyridine, and then sublimed to give a final purity of 98.3 %.</li> <li>(2) 99 %, Commercial sample, source and purification method was not specifi</li> <li>(3) 99 %, Commercial sample, source and purification method was not specifi</li> </ul>				
the solid re			ESTIMATED ERRORS: $T/K$ : precision $\pm$ 0.05. $x_2$ : $\pm$ 0.001 (compiler). $x_3$ : $\pm$ 3 % (relative error; compiler).			

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COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Carbazole; C ₁₂ H ₁₀ N; [86-74-8]	Smutek, M.; Fris, M.; Fohl, J.
(2) 2-Propanone; C ₃ H ₆ O; [67-64-1]	Collection Czech. Chem. Commun. <u>1967</u> , 32, 931-943.
(3) Pyridine; C ₅ H ₅ N; [110-86-1]	52, 551-545.
VARIABLES:	PREPARED BY:
T/K = 293, Solvent Composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALUES ⁸ t = 20.0 °C	+
x2 ^{(s),b} x2 x1	
0.000 0.000 0.0	924
0.313 0.290 0.0	732
0.576 0.545 0.0	545
0.803 0.772 0.0	391
1.000 0.976 0.0	239
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after the solvent had evaporated.	<ul> <li>(1) coal tar extract, was recrystallized several times from toluene and pyridine, and then sublimed to give a final purity of 98.3 %.</li> <li>(2) 99 %, Commercial sample, source and purification method was not specified.</li> <li>(3) 99 %, Commercial sample, source and purification method was not specified.</li> <li>ESTIMATED ERRORS: T/K: precision ± 0.05.</li> </ul>
	$x_2: \pm 0.001$ (compiler). $x_1: \pm 3$ % (relative error; compiler).

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COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Carbazole; C ₁₂ H ₁₀ N; [86-74-8]	Smutek, M.; Fris, M.; Fohl, J.
(2) 2-Propanone; C ₃ H ₆ O; [67-64-1]	Collection Czech. Chem. Commun. <u>1967</u> , 32, 931-943.
(3) Methylbenzene; C ₇ H ₈ ; [108-88-3]	52, 551-545.
VARIABLES:	PREPARED BY:
T/K = 293, Solvent Composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALUES ⁸ t = 20.0 °C	
x ₂ ^{(s),b} x ₂	×1
0.000 0.000	0.00374
0.148 0.147	0.00925
0.346 0.340	0.0160
0.613 0.599	0.0235
0.826 0.805	0.0258
0.934 0.910	0.0254
1.000 0.976	0.0239
AUXI	LIARY INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer and a precision balance. Binary solvent mixtures were prepared i weight. Excess solute and solvent plac in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satu ated solutions were transferred into tared containers and weighed. Solubil ties were calculated from the weight o the solid residue which remained after the solvent had evaporated.	<pre>several times from toluene and pyridine, and then sublimed to give a final purity of 98.3 %. (2) 99 %, Commercial sample, source and purification method was not specified. (3) 99 %, Commercial sample, source and f purification method was not specified. ESTIMATED ERRORS:</pre>
	T/K: precision $\pm$ 0.05. $x_2$ : $\pm$ 0.001 (compiler). $x_1$ : $\pm$ 3 % (relative error; compiler).

186 ORIGINAL MEASUREMENTS: COMPONENTS: Smutek, M.; Fris, M.; Fohl, J. (1) Carbazole; C₁₂H₁₀N; [86-74-8] Collection Czech. Chem. Commun. 1967, (2) Methanol; CH4O; [67-56-1] 32, 931-943. (3) 2-Propanone; C₃H₆O; [67-64-1] PREPARED BY: VARTABLES: W.E. Acree, Jr., P.R. Naidu and A.I. T/K = 293, Solvent Composition Zvaigzne EXPERIMENTAL VALUES^a t = 20.0 °Cx,(s),b x₁ ×3 0.000 0.000 0.00183 0.057 0.057 0.00256 0.00382 0.221 0.220 0.269 0.267 0.00704 0.453 0.448 0.0120 0.0189 0.688 0.675 0.832 0.814 0.0216 1.000 0.976 0.0239 ^a  $x_{\tau}^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_{\tau}$ : mole fraction solubility of the solute;  $x_3$ : mole fraction of component 3 in the ternary solution. ^b computed by compiler. AUXILIARY INFORMATION SOURCE AND PURITY OF MATERIALS: METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, (1) coal tar extract, was recrystallized several times from toluene and pyridine, and then sublimed to give and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed a final purity of 98.3 %. in closed glass containers and allowed to equilibrate for several hours at (2) 99 %, Commercial sample, source and purification method was not specified. constant temperature. Aliquots of saturated solutions were transferred into tared containers and weighed. Solubili-ties were calculated from the weight of (3) 99 %, Commercial sample, source and purification method was not specified. the solid residue which remained after the solvent had evaporated. ESTIMATED ERRORS: T/K: precision  $\pm$  0.05. x₃:  $\pm$  0.001 (compiler). x₁:  $\pm$  3 % (relative error; compiler).

			ORIGINAL MEASUREMENTS:		
(1) Carbazole; C ₁	2 ^H 10 ^N ; [86-74-8]		Smutek, M.; Fris, M.; Fohl, J.		
(2) Methanol; CH ₄	0; [67-56-1]		Collection Czech. Chem. Commun. <u>1967</u> ,		
(3) Methylbenzene; C ₇ H ₈ ; [108-88-3]			32, 931-943.		
VARIABLES:	<u>.</u>		PREPARED BY:		
<i>T/K</i> = 293, Solver	t Composition		W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne		
EXPERIMENTAL VALUE t = 20.0 °C	:S ^a				
x ₃ (s),b	Xz	x1			
0.000	0.000	0.00	0183		
0.033	0.033	0.00	0227		
0.104	0.104	0.00	0319		
0.258	0.257	0.00	0483		
0.510	0.507	0.00	0660		
0.582	0.578	0.00	0689		
0.759	0.754	0.00	0648		
0.868	0.863	0.00	0574		
1.000	0.996	0.00	)374		
the ternary s	solution.	1te; x ₃ : m	solvent mixture; x ₁ : mole wole fraction of component 3 in		
	solution.	ite; x ₃ : m	ole fraction of component 3 in		
	compiler.	ite; x ₃ : m	INFORMATION		
b computed by	compiler.	ite; x ₃ : m	NFORMATION		
b computed by METHOD: APPARATUS/ Constant temperat and a precision b Binary solvent mi weight. Excess so in closed glass o to equilibrate fo constant temperat ated solutions we tared containers ties were calcula	PROCEDURE Sure bath, thermome valance. Extures were prepar- plute and solvent prontainers and allo or several hours at sure. Aliquots of a pre transferred int and weighed. Solu- tred from the weigh which remained at	AUXILIARY eter, red by placed owed t satur- co bili- t of	ole fraction of component 3 in		

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COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Carbazole; C	12 ^H 10 ^N ; [86-74-8]	Smutek, M.; Fris, M.; Fohl, J.
(2) Ethanol; C ₂ H ₆	0; [64-17-5]	Collection Czech. Chem. Commun. <u>1967</u> , 32, 931-943.
(3) Methylbenzene	B; C ₇ H ₈ ; [108-88-3]	
VARIABLES:		PREPARED BY:
T/K = 293, Solver	at Composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALUE $t = 20.0 ^{\circ}C$	ES ^a	
x ₃ (s),b	<i>x</i> ₃ <i>x</i> ₁	
0.000	0.000 0.0	00332
0.052	0.052 0.0	
0.133	0.132 0.0	00521
0.332	0.330 0.0	00660
0.429	0.426 0.0	00719
0.600	0.595 0.0	00769
0.818	0.813 0.0	00647
1.000	0.996 0.0	00374
	AUXILIAR	INFORMATION
	·	
METHOD: APPARATUS/		SOURCE AND PURITY OF MATERIALS:
and a precision b Binary solvent mi weight. Excess so in closed glass c to equilibrate fo constant temperat ated solutions we tared containers ties were calcula	Extures were prepared by plute and solvent placed containers and allowed or several hours at ture. Aliquots of satur- are transferred into and weighed. Solubili- tted from the weight of a which remained after	<ul> <li>(1) coal tar extract, was recrystallized several times from toluene and pyridine, and then sublimed to give a final purity of 98.3 %.</li> <li>(2) 99 %, Commercial sample, source and purification method was not specified.</li> <li>(3) 99 %, Commercial sample, source and purification method was not specified.</li> </ul>
		ESTIMATED ERRORS: $T/K$ : precision $\pm$ 0.05. $x_3$ : $\pm$ 0.001 (compiler). $x_1$ : $\pm$ 3 % (relative error; compiler).

COMP	ONENTS:			ORIGINAL N	<b>EASUREMENTS</b>	:		
(1)	Carbazole	; C ₁₂ H ₁₀ N; [8	36-74-8]	Smutek, M	4.; Fris, M.	; Fohl, J.		
(2)	2-Propano	51; C ₃ H ₈ O; [6	7-63-0]			em. Commun. <u>1967</u> ,		
(3)	Methylber	nzene; C ₇ H ₈ ;	[108-88-3]	32, 931-943.				
VARIABLES:				PREPARED BY:				
T/K		13 and 333 Composition		W.E. Acre Zvaigzne	ee, Jr., P.R	. Naidu and A.I.		
	RIMENTAL V 20.0 °C	ALUES ^a						
	x3 ^{(s),b}	*3	×1	x3 ^{(s),b}	×3	×1		
	0.000	0.000	0.00277	0.662	0.653	0.0131		
	0.067	0.067	0.00374	0.854	0.845	0.0106		
	0.179	0.178	0.00552	1.000	0.993	0.00666		
	0.395	0.392	0.00795					
	0.495	0.491	0.00809	= 60 °C				
	0.662	0.657	0.00762	= 60 °C				
	1.000	0.996	0.00374	0.000	0.000	0.00912		
				0.180	0.177	0.0148		
<b>*</b>	40 °C			0.219	0.215	0.0161		
2 =	40 °C			0.395	0.387	0.0195		
	0.000	0.000	0.00523	0.662	0.649	0.0202		
	0.179	0.177	0.00902	1.000	0.989	0.0111		
	0.302	0.299	0.0107					
	0.395	0.390	0.0123					
	0.495	0.489	0.0129					
	fraction the terna	solubility of ary solution.		y solvent mix mole fractio	ture; x ₁ : mo n of compone	le ent 3 in		
	° compute	d by compile	er.					
	· · · · · · · · · · · · · · · · · · ·		AUXILIAR	Y INFORMATION	1			
METHO	DD: APPARA	TUS/PROCEDU	RE	SOURCE AND	PURITY OF 1	ATERIALS:		
and Bina weig in c to e cons atec tare ties the	a precisi ary solver pht. Excess closed glas equilibrat stant temp i solution a were cal solid res	on balance. It mixtures of a solute and as contained erature. Ali as were trans ers and weig culated from	Lquots of satur- sferred into ghed. Solubili- a the weight of remained after	<ul> <li>(1) coal tar extract, was recrystallized several times from toluene and pyridine, and then sublimed to give a final purity of 98.3 %.</li> <li>(2) 99 %, Commercial sample, source and purification method was not specified</li> <li>(3) 99 %, Commercial sample, source and purification method was not specified</li> </ul>				
				FETTMATT	ERRORS :			
					ision ± 0.0			

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Carbazole; C ₁₂ H ₁₀ N; [86-74-8]	Smutek, M.; Fris, M.; Fohl, J.
(2) 2-Propanone; C ₃ H ₆ O; [67-64-1]	Collection Czech. Chem. Commun. <u>1967</u> , 32, 931-943.
(3) Carbon disulfide; CS ₂ ; [75-15-0]	52, 551-545.
VARIABLES:	PREPARED BY:
T/K = 293, Solvent Composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALUES ⁸ t = 20.0 °C	
x2 ^{(s),b} x2 x1	
0.000 0.000 0.0	0149
0.304 0.296 0.0	269
0.567 0.546 0.0	367
0.686 0.661 0.0	370
0.798 0.770 0.0	345
1.000 0.976 0.0	239
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after the solvent had evaporated.	<ul> <li>(1) coal tar extract, was recrystallized several times from toluene and pyridine, and then sublimed to give a final purity of 98.3 %.</li> <li>(2) 99 %, Commercial sample, source and purification method was not specified.</li> <li>(3) 99 %, Commercial sample, source and purification method was not specified.</li> </ul>
	ESTIMATED ERRORS: $T/K$ : precision $\pm$ 0.05. $x_2$ : $\pm$ 0.001 (compiler). $x_1$ : $\pm$ 3 % (relative error; compiler).

I. Alkane + Alkane (including cycloalkanes)

None

II. Alkane + Aromatic Hydrocarbon

None

III. Alkane + Ester

None

IV. Alkane + Ether

None

V. <u>Alkane + Chloroalkane</u>

None

VI. Ether + Chloroalkane

None

VII. <u>Miscellaneous</u>

benzene + pyridine cyclohexane + pyridine benzene + thiophene cyclohexane + thiophene thiophene + pyridine 1,2,3,4-tetrahydronaphthalene + decahydronaphthalene

COMPONENTS:			ORIGINAL M	EASUREMENTS:			
(1) Dibenzo [132-64	furan; C ₁₂ H ₈ O; -9]		Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E.				
(2) Benzene	; C ₆ H ₆ ; [71-43-	-2]	J. Solution Chem. <u>1988</u> , 16, 519-534.				
(3) Pyridin	3) Pyridine; C ₅ H ₅ N; [110-86-1]						
VARIABLES:	<u> </u>		PREPARED I	J¥ :	<u></u>		
Temperature	, Solvent comp	osition	W.E. Acre	e, Jr.			
EXPERIMENTAL	1731 11PC ⁸				······		
T/K	x ₃ ⁽⁸⁾	v	T/K	x3 ^(s)	<b>x</b> 1		
321.9	••••••••••••••••••••••••••••••••••••••	*1 0.4797	323.7	- <u>3</u> 1.0000	1 0.5083		
323.5	0.0000	0.5068	326.2	1.0000 .			
329.4	0.0000	0.5844	331.2				
	0.0000	0.5844	336.3	1.0000	0.6812		
332.0			340.8	1.0000	0.7582		
338.7	0.0000	0.7224	340.8	1.0000	0.7302		
312.3	0.3000	0.4004					
322.2	0.3000	0.5093					
329.2	0.3000	0.5951					
337.1	0.3000	0.7031					
343.4 ^a x ₃ (s): solubil:		0.8079 fraction of binary ute.	solvent mix	ture; x ₁ : mo]	le fraction		
a x ₁ (5)1	initial mole :	fraction of binary	Bolvent mix	ture; x ₁ : mo]	le fraction		
a x ₁ (s)1	initial mole :	fraction of binary ute.	BOlvent mix		le fraction		
a _{X3} (5); Bolubil:	initial mole s	fraction of binary ute. AUXILIARY	INFORMATION				
<pre>a x3(s); solubil: @ETHOD: APPAJ Constant ter thermometer</pre>	initial mole s ity of the sol ATUS/PROCEDUR mperature bath	fraction of binary ute. AUXILIARY E and a precision	SOURCE AND (1) 99 %, Milwa	PURITY OF M Aldrich Che	ATERIALS: mical Company, sin, USA, recrystal-		
a _{X3} (5); solubil: METHOD: APPAI Constant ter thermometer. Solubilities dynamic meth trations wer	initial mole : ity of the sol and the sol and the sol and the sol and the sol and the solution of the solution and the solution of the solution and the solution of the solution and the solution of the solution of the solution and the solution of the solution of the solution and the solution of the solution of the solution of the solution and the solution of the so	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold	PURITY OF M Aldrich Che ukee, Wiscon from toluen Label, 99.9+	ATERIALS: mical Company, sin, USA, recrystal-		
a _{X3} (5); solubil: solubil: Constant ter thermometer. Solubilities dynamic meth trations wer glass ampule temperature were rotated the bath ter by 0.1 K eve determined h ature at whis solute disag	initial mole : ity of the sol ty of the sol arrow of the sol arrow of the	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che ukee, Wiscon from toluen Label, 99.9+ ny, was used Label, 99.9+	ATERIALS: mical Company, sin, USA, recrystal- e. %, Aldrich Chemical as received.		
a _{X3} (5); solubil: solubil: Constant ter thermometer. Solubilities dynamic meth trations wer glass ampul- trations were glass ampul- temperature were rotated the bath ter by 0.1 K eve determined h ature at whi solute disar ments were given	initial mole : ity of the sol ty of the sol arrow of the sol arrow of the	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che ukee, Wiscon from toluen Label, 99.9+ ny, was used Label, 99.9+ ny, was used	ATERIALS: mical Company, sin, USA, recrystal- e. *, Aldrich Chemical as received. *, Aldrich Chemical		

Want C 20-	(132-64-9)		EASUREMENTS:		
		Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E. J. Solution Chem. <u>1988</u> , 16, 519-534.			
050507 (110					
		PREPARED B	37:		
Solvent comp	osition	W.E. Acre	e, Jr.		
ALUES ^a		Į			
x3 ^(s)	<i>*</i> 1	T/K	x3 ^(s)	<i>x</i> 1	
0.0000	0.4226	323.7	1.0000	0.5083	
0.0000	0.4805	326.2	1.0000	0.5446	
0.0000	0.5436	331.2	1.0000	0.6161	
0.0000	0.6300	336.3	1.0000	0.6812	
0.0000	0.6700	340.8	1.0000	0.7582	
0.0000	0.8120				
0.3000	0.3153				
0.3000	0.4027				
0.3000	0.4925				
0.3000	0.6060				
0.3000	0.6567				
0.3000	0.8465				
nitial mole : y of the sol	fraction of binary ute.	solvent mix	ture; x ₁ : mol	e fraction	
nitial mole : y of the sol	fraction of binary ute.	solvent mix	ture; x ₁ : mol	e fraction	
nitial mole : y of the sol	ute.	solvent mix		e fraction	
nitial mole : y of the sol	AUXILIARY	INFORMATION			
y of the Bol	AUXILIARY	INFORMATION SOURCE AND (1) 99 %, Milwa	PURITY OF M Aldrich Che	ATERIALS: mical Company, sin, USA, recrystal	
TUS/PROCEDUR Perature bath were measure	AUXILIARY E and a precision	INFORMATION SOURCE AND (1) 99 %, Milwa lized	PURITY OF M Aldrich Che uukee, Wiscon I from toluen	ATERIALS: mical Company, sin, USA, recrystal	
TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t	AUXILIARY E and a precision d using a of known concen-	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold	PURITY OF M Aldrich Che ukee, Wiscon from toluen Label, 99.9+	ATERIALS: mical Company, sin, USA, recrystal e.	
TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s and placed o equilibrat	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che uukee, Wiscon from toluen Label, 99.9+ ny, was used Label, 99.9+	ATERIALS: mical Company, sin, USA, recrystal e. %, Aldrich Chemica as received.	
TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s and placed o equilibrat at a speed o erature was	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che uukee, Wiscon from toluen Label, 99.9+ ny, was used	ATERIALS: mical Company, sin, USA, recrystal e. %, Aldrich Chemica as received.	
TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s and placed o equilibrat at a speed o erature was y 1200 secon visually no	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che uukee, Wiscon from toluen Label, 99.9+ ny, was used Label, 99.9+	ATERIALS: mical Company, sin, USA, recrystal e. %, Aldrich Chemica as received.	
TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s ealed in t s and placed o equilibrat at a speed o erature was y 1200 secon visually no h the last t	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che uukee, Wiscon from toluen Label, 99.9+ ny, was used Label, 99.9+	ATERIALS: mical Company, sin, USA, recrystal e. %, Aldrich Chemica as received.	
TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s sealed in t s and placed o equilibrat at a speed c erature was y 1200 secon visually no h the last t eared. At le	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che uukee, Wiscon from toluen Label, 99.9+ ny, was used Label, 99.9+	ATERIALS: mical Company, sin, USA, recrystal e. %, Aldrich Chemica	
TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s sealed in t s and placed o equilibrat at a speed c erature was y 1200 secon visually no h the last t eared. At le	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold Compa	PURITY OF M Aldrich Che uukee, Wiscon from toluen Label, 99.9+ ny, was used Label, 99.9+ ny was used	ATERIALS: mical Company, sin, USA, recrystal e. %, Aldrich Chemica as received.	
TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s sealed in t s and placed o equilibrat at a speed c erature was y 1200 secon visually no h the last t eared. At le	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold Compa	PURITY OF M Aldrich Che ukee, Wiscon from toluen Label, 99.9+ ny, was used Label, 99.9+ ny was used ERRORS:	ATERIALS: mical Company, sin, USA, recrystal e. %, Aldrich Chemica as received.	
TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s sealed in t s and placed o equilibrat at a speed c erature was y 1200 secon visually no h the last t eared. At le	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold Compa (3) Gold Compa	PURITY OF M Aldrich Che ukee, Wiscon from toluen Label, 99.9+ ny, was used Label, 99.9+ ny was used ERRORS:	ATERIALS: mical Company, sin, USA, recrystal e. %, Aldrich Chemica as received.	
TUS/PROCEDUR erature bath were measure d. Mixtures sealed in t s sealed in t s and placed o equilibrat at a speed c erature was y 1200 secon visually no h the last t eared. At le	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa lized (2) Gold Compa (3) Gold Compa	PURITY OF M Aldrich Che ukee, Wiscon from toluen Label, 99.9+ ny, was used Label, 99.9+ ny was used ERRORS:	ATERIALS: mical Company, sin, USA, recrystal e. %, Aldrich Chemica as received.	
	Ane; C ₆ H ₁₂ ; [1 C ₅ H ₅ N; [110- Solvent comp ALUES ⁸ X ₃ ^(s) 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.3000 0.3000 0.3000	$x_3^{(s)}$ $x_1$ 0.00000.42260.00000.48050.00000.54360.00000.63000.00000.67000.00000.81200.30000.31530.30000.40270.30000.49250.30000.6567	aran; $C_{12}H_80$ ; $[132-64-9]$ Coon, J.E         ane; $C_6H_{12}$ ; $[110-82-7]$ J. Soluti $C_5H_5N$ ; $[110-86-1]$ PREPARED E         Solvent composition       W.E. Acres         YALUES ^a Y/K $x_3^{(s)}$ x1 $0.0000$ 0.4226 $0.0000$ 0.4805 $0.0000$ 0.6300 $0.0000$ 0.6300 $0.0000$ 0.6300 $0.0000$ 0.6100 $0.0000$ 0.6100 $0.3000$ 0.4027 $0.3000$ 0.4925 $0.3000$ 0.6060 $0.3000$ 0.6567	aran; $C_{12}H_8O; [132-64-9]$ Coon, J.E.; Sediawan, J.E.; McLaughlin, E.         ane; $C_6H_{12}; [110-82-7]$ J. Solution Chem. 19 $C_5H_5N; [110-86-1]$ PREPARED BY:         Solvent composition       W.E. Acree, Jr.         YALUES ^a $X_3^{(s)}$ x1 $V_{3000}$ 0.4226       323.7       1.0000         0.0000       0.4805       326.2       1.0000         0.0000       0.5436       331.2       1.0000         0.0000       0.6300       336.3       1.0000         0.0000       0.6300       340.8       1.0000         0.3000       0.4925       0.3000       0.4925         0.3000       0.6060       0.3000       0.6567	

Component	?S:		ORIGINAL N				
(1) Dibe (132	enzofuran; C ₁₂ H ₈ O 2-64-9]	;		Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E.			
(2) Benz	ene; C ₆ H ₆ ; [71-4	3-2]	J. Solution Chem. <u>1988</u> , 16, 519-534.				
	3) Thiophene; C ₄ H ₄ S; [110-02-1]						
		<u></u>	PREPARED I				
	ure, Solvent con	position	W.E. Acre				
EXPERIMEN	TAL VALUES ⁸						
T/K	x3 ^(s)	<b>*</b> 1	T/K	x3 ^(s)	* ₁		
321.	9 0.0000	0.4797	314.2	1.0000	0.4220		
323.	5 0.0000	0.5068	319.2	1.0000 '	0.4757		
329.	4 0.0000	0.5844	322.3	1.0000	0.5083		
332.	0 0.0000	0.6222	332.8	1.0000	0.6347		
338.	7 0.0000	0.7224	337.0	1.0000	0.6960		
303.	3 0.3000	0.3069	341.1	1.0000	0.7585		
312.	7 0.3000	0.3919					
324.	2 0.3000	0.5179					
329.	6 0.3000	0.5910					
339.		0.7356					
344. ª x ₃ (	8 0.3000 5 0.3000	0.7356 0.8130 fraction of binary	solvent mix	ture; x ₁ : mol	e fraction		
344. ª x ₃ (	8 0.3000 5 0.3000 ^(s) : initial mole	0.7356 0.8130 fraction of binary	solvent mix	ture; x ₁ : mol	e fraction		
344. ª x ₃ (	8 0.3000 5 0.3000 ^(s) : initial mole	0.7356 0.8130 fraction of binary plute.	solvent mix		e fraction		
344. ª x3 solu	8 0.3000 5 0.3000 ^(s) : initial mole	0.7356 0.8130 fraction of binary plute. AUXILIAR	INFORMATION				
344. ^a x ₃ solu solu	8 0.3000 5 0.3000 (s); initial mole bility of the so PPARATUS/PROCEDU temperature bat	0.7356 0.8130 fraction of binary plute. AUXILIAR	SOURCE AND (1) 99 %, Milwa	PURITY OF M Aldrich Che	ATERIALS: mical Company, sin, USA, recrystal-		
344. ^a x ₃ solu (ETHOD: A Constant thermome Solubili dynamic	8 0.3000 5 0.3000 (s); initial mole bility of the so PPARATUS/PROCEDU temperature bat ter. ties were measur method. Mixtures	0.7356 0.8130 fraction of binary plute. AUXILIAR TRE th and a precision red using a s of known concen-	SOURCE AND (1) 99 %, Milwa lized (2) Gold	PURITY OF M Aldrich Che aukee, Wiscon from toluen Label, 99.9+	ATERIALS: mical Company, sin, USA, recrystal- e. %, Aldrich Chemical		
344. ^a x ₃ solu (ETHOD: A Constant thermome Solubili dynamic trations glass am	8 0.3000 5 0.3000 (s); initial mole bility of the so (s) PPARATUS/PROCEDI temperature bat ter. ties were measure method. Mixtures were sealed in poules and place	0.7356 0.8130 fraction of binary plute. AUXILIAR RE th and a precision red using a s of known concen- thick-walled d in a constant	(1) 99 %, Milwa lized (2) Gold Compa	PURITY OF M Aldrich Che aukee, Wiscon 1 from toluen Label, 99.9+ any was used	ATERIALS: mical Company, sin, USA, recrystal- e. %, Aldrich Chemical as received.		
344. ^a x ₃ solu <b>ETHOD: A</b> <b>Constant</b> thermome Solubili dynamic trations glass am temperat were rot the bath	8 0.3000 5 0.3000 (s); initial mole bility of the so (s) PPARATUS/PROCEDU temperature bat ter. ties were measur method. Mixtures were sealed in poules and place ure to equilibra ated at a speed	0.7356 0.8130 fraction of binary plute. AUXILIAR RE th and a precision red using a s of known concen- thick-walled ed in a constant ite. Samples were of 0.25 rps while s slowly increased	SOURCE ANI (1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che aukee, Wiscon 1 from toluen Label, 99.9+ any was used Label, 99.9+	ATERIALS: mical Company, sin, USA, recrystal- e. %, Aldrich Chemical as received.		
344. a x3 solu <b>AETHOD: A</b> <b>Constant</b> thermome Solubili dynamic trations glass am temperat were rot the bath by 0.1 K determin ature at solute d	8 0.3000 5 0.3000 5 0.3000 (s); initial mole bility of the so bility of the so performation of the so PPARATUS/PROCEDIA temperature bat ter. ties were measure method. Mixtures were sealed in poules and place ure to equilibra ated at a speed temperature was every 1200 secc ed by visually r which the last isappeared. At J re performed for	0.7356 0.8130 fraction of binary plute. AUXILIAR RE th and a precision red using a s of known concen- thick-walled ed in a constant tte. Samples were of 0.25 rps while s slowly increased onds. Solubility noting the temper- trace of solid east two measure-	SOURCE ANI (1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che aukee, Wiscon 1 from toluen Label, 99.9+ any was used Label, 99.9+	ATERIALS: mical Company, sin, USA, recrystal- e. %, Aldrich Chemical as received. %, Aldrich Chemical		
344. ^a x ₃ solu <b>GETHOD:</b> A Constant thermome Solubili dynamic trations glass am temperat were rot the bath by 0.1 K determin ature at solute d	8 0.3000 5 0.3000 5 0.3000 (s); initial mole bility of the so bility of the so performation of the so PPARATUS/PROCEDIA temperature bat ter. ties were measure method. Mixtures were sealed in poules and place ure to equilibra ated at a speed temperature was every 1200 secc ed by visually r which the last isappeared. At J re performed for	0.7356 0.8130 fraction of binary plute. AUXILIAR RE th and a precision red using a s of known concen- thick-walled ed in a constant tte. Samples were of 0.25 rps while s slowly increased onds. Solubility noting the temper- trace of solid east two measure-	SOURCE ANI (1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che aukee, Wiscon I from toluen Label, 99.9+ my was used Label, 99.9+ my was used	ATERIALS: mical Company, sin, USA, recrystal- e. %, Aldrich Chemical as received. %, Aldrich Chemical		

	,	J.E.; McI	Laughlin, E. ion Chem. <u>19</u> SY: 28, Jr. x ₃ ^(s) 1.0000	W.B.; Auwaerter, <u>88</u> , <i>16</i> , 519-534. <u>x</u> 1
s ^a (s) .0000 .0000 .0000 .0000	x ₁ 0.4226 0.5436	J. Solut: PREPARED E W.E. Acre T/K 314.2 319.3	ion Chem. <u>19</u> 3Y: 28, Jr. x ₃ ^(s) 1.0000	×1
ent compo 5 ⁸ (s) .0000 .0000 .0000 .0000	x ₁ 0.4226 0.4805 0.5436	<b>PREPARED E</b> W.E. Acre <i>T/K</i> 314.2 319.3	3Y: 28, Jr. x ₃ ^(s) 1.0000	×1
s ^a (s) .0000 .0000 .0000 .0000	x ₁ 0.4226 0.4805 0.5436	W.E. Acre T/K 314.2 319.3	28, Jr. x ₃ ^(s) 1.0000	• ,
s ^a (s) .0000 .0000 .0000 .0000	x ₁ 0.4226 0.4805 0.5436	T/K 314.2 319.3	x3 ^(s) 1.0000	• ,
ς(s) . 0000 . 0000 . 0000 . 0000	0.4226 0.4805 0.5436	314.2 319.3	1.0000	• ,
.0000 .0000 .0000 .0000	0.4226 0.4805 0.5436	314.2 319.3	1.0000	• ,
.0000 .0000 .0000 .0000	0.4805	319.3	-	
.0000 .0000 .0000	0.5436			0.4220
.0000		377 3	1.0000	0.4757
.0000	0.6300	322.3	1.0000	0.5083
		332.8	1.0000	0.6347
.0000	0.6700	337.0	1.0000	0.6960
	0.8120	341.1	1.0000	0.7585
. 3000	0.3633			
. 3000	0.4837			
.3000	0.5402			
. 3000	0.6170			
. 3000	0.7436			
. 3000	0.8629			
- <del>11-11</del>				
	AUXILIARY	INFORMATION	1	
PROCEDURI	E	SOURCE AND	PURITY OF M	ATERIALS:
ure bath	and a precision			
led in th	hick-walled			
ilibrate speed of the was a DO second tally not a last the d. At lea	e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-			
		ESTIMATED	ERRORS :	
		$\begin{array}{c} T/K: \pm 0, \\ x_3^{(s)}: \pm 0, \\ x_1: \pm 0.0 \end{array}$	.1. ).0001. )003.	
	PROCEDUR ure bath measured ixtures of led in ti d placed uilibrat speed of ure was 00 second ually no e last ti d. At lea	.3000 0.7436 .3000 0.8629 al mole fraction of binary the solute.	.3000 0.7436 .3000 0.8629 al mole fraction of binary solvent mix the solute. AUXILIARY INFORMATION PROCEDURE ure bath and a precision measured using a ixtures of known concen- led in thick-walled d placed in a constant uilibrate. Samples were speed of 0.25 rps while ure was slowly increased 00 seconds. Solubility ually noting the temper- e last trace of solid d. At least two measure- med for each mixture ESTIMATED T/K: + 0.	.3000 0.7436 .3000 0.8629 al mole fraction of binary solvent mixture; x ₁ : mol the solute. AUXILIARY INFORMATION PROCEDURE ure bath and a precision measured using a ixtures of known concen- led in thick-walled d placed in a constant uilibrate. Samples were speed of 0.25 rps while ure was slowly increased 00 seconds. Solubility ually noting the temper- e last trace of solid d. At least two measure-

oora	<b>MPONENTS:</b> 1) Dibenzofuran; C ₁₂ H ₈ O;			ORIGINAL M	ORIGINAL MEASUREMENTS:			
(1)	Dibenzofu [132-64-9	1ran; C ₁₂ H ₈ O;			.; Sediawan, Laughlin, E.	W.B.; Auwaerter,		
(2)	Thiophene	; C ₄ H ₄ S; [110	)-02-1]	J. Solution Chem. <u>1988</u> , 16, 519-534.				
(3)	Pyridine;	C ₅ H ₅ N; [110-	-86-1]					
VARI	RIABLES:			PREPARED I				
Tem	perature,	Solvent comp	osition	W.E. Acre	ee, Jr.			
EIPE	RIMENTAL V	VALUES ⁸		·!		·····		
	T/K	x3 ^(s)	<i>x</i> 1	T/K	x3 ^(s)	<b>x</b> 1		
	314.2	0.0000	0.4220	338.0	0.3000	0.7151		
	319.3	0.0000	0.4757	344.0	0.3000	0.8111		
	322.3	0.0000	0.5083					
	332.8	0.0000	0.6347	323.7	1.0000	0.5083		
	337.0	0.0000	0.6960	326.2	1.0000	0.5446		
	341.1	0.0000	0.7585	331.2	1.0000	0.6161		
				336.3		0.6812		
	299.9	0.3000	0.2758	340.8	1.0000	0.7582		
	312.6	0.3000	0.4083					
	321.1	0.3000	0.4925					
	a _{Xz} (s); i	0.3000 nitial mole : y of the sol	fraction of binary	solvent mix	ture; x _i : mo]	e fraction		
	a _{Xz} (s); i	nitial mole :	fraction of binary	solvent mix	ture; x ₁ ; mo]	e fraction		
	a _{Xz} (s); i	nitial mole :	fraction of binary ute.	solvent mix		e fraction		
METH.	a _{X3} (s): i solubilit	nitial mole :	fraction of binary ute. AUXILIARY	INFORMATION				
Con the	a _{X3} (s); <u>i</u> solubilit oD: APPARA stant temp rmometer.	nitial mole : y of the sol TUS/PROCEDUR Perature bath	AUXILIARY and a precision	SOURCE AND (1) 99 %, Milwa	PURITY OF M Aldrich Che	ATERIALS: mical Company, sin, USA, was		
Con the Sol dyn	a _{X3} (s): <u>i</u> solubilit oD: APPARA stant temp rmometer. ubilities amic metho	nitial mole : y of the sol TUS/PROCEDUR Derature bath were measure od. Mixtures	AUXILIARY and a precision d using a of known concen-	INFORMATION SOURCE AND (1) 99 %, Milwa recry (2) Gold	PURITY OF M Aldrich Che ukee, Wiscon stallized fr Label, 99.9+	ATERIALS: mical Company, Bin, USA, was om toluene. %, Aldrich Chemical		
Con the Sol dyn tra gla	a _{X3} (s); <u>i</u> solubilit solubilit <b>OD: APPARA</b> stant temp rmometer. ubilities amic metho tions were ss ampoule	nitial mole : y of the sol TUS/PROCEDUR perature bath were measure d. Mixtures sealed in t s and placed	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant	INFORMATION SOURCE AND (1) 99 %, Milwa recry (2) Gold Compa	Aldrich Che Nukee, Wiscon Stallized fr Label, 99.9+	ATERIALS: mical Company, sin, USA, was om toluene. %, Aldrich Chemical as received.		
Con the Sol dyn tra gla tem wer the by det atu: sol men	a _{X3} (s); <u>i</u> solubilit solubilit oD: APPARA stant temp rmometer. ubilities amic methor tions were ss ampoule perature t so rotated bath temp 0.1 K ever ermined by re at whic ute disapp	nitial mole : y of the sol TUS/PROCEDUR Derature bath were measure d. Mixtures is sealed in t is and placed to equilibrat at a speed o perature was y 1200 secon visually no h the last t	AUXILIARY AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa recry (2) Gold Compa (3) Gold	Aldrich Che ukee, Wiscon ystallized fr Label, 99.9+ my, was used Label, 99.9+	ATERIALS: mical Company, Bin, USA, was om toluene. %, Aldrich Chemical		
Con the Sol dyn tra gla tem wer the by det atu: sol men	a _{X3} (s); <u>i</u> solubilit solubilit oD: APPARA stant temp rmometer. ubilities amic metho tions were sa ampoule perature t e rotated bath temp 0.1 K ever ermined by re at whic ute disapp ts were pe	ATUS/PROCEDUR Derature bath were measure of Mixtures a sealed in t as and placed o equilibrat at a speed o verature was y 1200 secon visually no th the last t weared. At le	AUXILIARY AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa recry (2) Gold Compa (3) Gold	Aldrich Che ukee, Wiscon /stallized fr Label, 99.9+ my, was used Label, 99.9+ my, was used	ATERIALS: mical Company, sin, USA, was om toluene. *, Aldrich Chemical as received. *, Aldrich Chemical		

(1) Dibenzof [132-64-			OKIGIAAD MEA	SUREMENTS :	
(	uran; C ₁₂ H ₈ O; 9]		Coon, J.E.; E.	Auwaerter,	J.E.; McLaughlin,
	Tetrahydronag 119-64-2]	ohthalene;	Fluid Phase	Equilibr.	<u>1989</u> , 44, 305-345.
(3) Decahydr [91-17-8	onaphthalene; ]	C ₁₀ H ₁₈ ;			
VARIABLES:	<u> </u>		PREPARED BY:		
Temperature,	Solvent comp	osition	W.E. Acree,	Jr.	
EXPERIMENTAL	VALUES ^a			<u> </u>	
T/K	x3 ^(s)	×1	T/K	x3 ^(s)	<b>x</b> 1
318.9	0.0000	0.4521	328.6	0.5000	0.5496
322.6	0.0000	0.4907	343.5	0.5000	0.7999
326.6	0.0000	0.5494			
337.9	0.0000	0.6990	326.4	1.0000	0.4245
339.5	0.0000	0.7330	328.2	1.0000	0.4646
			331.5	1.0000	0.5110
308.7	0.5000	0.1693	333.5	1.0000	0.5752
317.5	0.5000	0.2412	337.2	1.0000	0.6447
325.7	0.5000	0.3278			
		AUXILIARY	INFORMATION		
	ATUS/PROCEDUR		SOURCE AND P		FERIALS:

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# DIBENZOTHIOPHENE SOLUBILITIES IN BINARY SOLVENT MIXTURES I. Alkane + Alkane (including cycloalkanes) None II. Alkane + Aromatic Hydrocarbon None III. Alkane + Ester None IV. <u>Alkane + Ether</u> None v. Alkane + Chloroalkane None vī. Ether + Chloroalkane None VII. <u>Miscellaneous</u> benzene + pyridine cyclohexane + pyridine benzene + thiophene cyclohexane + thiophene thiophene + pyridine 1,2,3,4-tetrahydronaphthalene + decahydronaphthalene

COMPONENTS: (1) Dibenzothiophene; C ₁₂ H ₈ S;			ORIGINAL MEASUREMENTS:			
(1) Dibenzot {132-65-		H ₈ S;	Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E.			
(2) Benzene;	C ₆ H ₆ ; [71-43	-2]	J. Solution Chem. <u>1988</u> , 16, 519-534.			
(3) Pyridine	; C ₅ H ₅ N; [110-	-86-1]				
VARIABLES:			PREPARED E	371		
/ARIABLES: Temperature, Solvent composition			W.E. Acree, Jr.			
	<b>•</b>					
EXPERIMENTAL	VALUES"		m ly	x3 ^(\$)	v	
T/K	-	×1	T/K	x ₃ .07	*1 0.2143	
309.9	0.0000	0.1896	306.5			
315.3	0.0000	0.2246	313.0	1.0000	0.2552	
327.8	0.0000	0.3347	322.8	1.0000	0.3313	
337.2	0.0000	0.4362	327.4	1.0000	0.3784	
342.3	0.0000	0.5144	334.7	1.0000	0.4498	
			335.2	1.0000	0.4652	
308.8	0.3000	0.2060				
319.8	0.3000	0.2856				
332.0	0.3000	0.4012				
340.6	0.3000	0.5024				
348.0 355.9 • _{X3} (s): solubili	0.3000 0.3000 initial mole ty of the sol	0.5964 0.7237 fraction of binary ute.	solvent mix	ture; x ₁ : mol	le fraction	
355.9 • _{X.} (*):	0.3000	0.7237 fraction of binary	solvent mix	ture; x ₁ : mo]	le fraction	
355.9 • _{X1} (s):	0.3000	0.7237 fraction of binary ute.	solvent mix		le fraction	
355.9 • _{X3} (s); solubili	0.3000	0.7237 fraction of binary ute. AUXILIARS	( INFORMATION			
355.9 • _{X3} (:); solubili <b>METHOD: APPAR</b> Constant ten thermometer.	0.3000 initial mole ty of the sol ty of the sol	0.7237 fraction of binary ute. AUXILIARY	SOURCE AND (1) 99 %, Milwa	PURITY OF M Aldrich Che	MATERIALS: emical Company, ssin, USA, recrystal	
355.9 • x3 ^(s) ; solubili METHOD: APPAR Constant ten thermometer. Solubilities dynamic meth	0.3000 initial mole ty of the sol ATUS/PROCEDUR operature bath were measure od. Mixtures	0.7237 fraction of binary ute. AUXILIARS E a and a precision of using a of known concen-	SOURCE ANI (1) 99 %, Milwa lizeo (2) Gold	PURITY OF M Aldrich Che ukee, Wiscon I from toluen Label, 99.9+	MATERIALS: emical Company, msin, USA, recrystal e. • %, Aldrich Chemica	
355.9 • _{X3} (s); solubili <b>GETHOD: APPAR</b> Constant ten thermometer. Solubilities dynamic meth trations wer glass ampoul	0.3000 initial mole ty of the sol ty of the sol apperature bath were measure od. Mixtures e sealed in t es and placed	0.7237 fraction of binary ute. AUXILIARY E a and a precision d using a of known concen- hick-walled in a constant	(1) 99 %, Milwa lized (2) Gold Compa	PURITY OF M Aldrich Che uukee, Wiscon I from toluen Label, 99.9+ uny was used	MATERIALS: emical Company, nsin, USA, recrystal e. • %, Aldrich Chemica as received.	
355.9 • x ₃ (s); solubili solubili <b>GETHOD: APPAR</b> Constant ten thermometer. Solubilities dynamic meth trations wer glass ampoul temperature were rotated the bath tem by 0.1 K eve determined b ature at whi solute disag	0.3000 initial mole ty of the sol ty of the sol and the sol ty of the sol ty of the so	0.7237 fraction of binary ute. AUXILIARS AUXILIARS E a and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased dds. Solubility ting the temper- race of solid ast two measure-	(1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che Nukee, Wiscom from toluen Label, 99.9+ My was used Label, 99.9+	MATERIALS: emical Company, msin, USA, recrystal e. • %, Aldrich Chemica	
355.9 • x3(s); solubili solubili GETHOD: APPAR Constant ten thermometer. Solubilities dynamic meth trations wer glass ampoul temperature were rotated the bath ten by 0.1 K eve determined b ature at whi solute disap ments were pr	0.3000 initial mole ty of the sol ty of the sol and the sol ty of the sol ty of the so	0.7237 fraction of binary ute. AUXILIARS AUXILIARS E a and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased dds. Solubility ting the temper- race of solid ast two measure-	(1) 99 %, Milwa lized (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che uukee, Wiscon I from toluen Label, 99.9+ uny was used Label, 99.9+ uny was used	ATERIALS: emical Company, sin, USA, recrystal e. • %, Aldrich Chemica as received. • %, Aldrich Chemica	

	ONENTS:			ORIGINAL MEASUREMENTS:			
(1)	Dibenzoth [132-65-0	niophene; C ₁₂ H )}	i ₈ s;	Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E.			
(2)	Cyclohexa	ne; C ₆ H ₁₂ ; [1	10-82-7]	J. Solution Chem. <u>1988</u> , 16, 519-534.			
(3)	Pyridine;	C ₅ H ₅ N; [110-	-86-1]				
/ARIABLES:			PREPARED BY:				
Tem	Temperature, Solvent composition			W.E. Acree, Jr.			
EXPE	RIMENTAL V	/ALUES ⁸		<b>.</b>		·····	
	т/к	x3 ^(s)	×1	T/K	x3 ^(s)	×1	
	320.6	0.0000	0.0871	352.0	0.3000	0.6329	
	326.6	0.0000	0.1129	357.7	0.3000 '	0.7336	
	328.2	0.0000	0.1294				
	335.8	0.0000	0.1999	306.5	1.0000	0.2143	
	343.0	0.0000	0.3154	313.0	1.0000	0.2552	
	343.3	0.0000	0.3346	322.8	1.0000	0.3313	
				327.4	1.0000	0.3784	
	319.8	0.3000	0.2141	334.7	1.0000	0,4498	
	330.5	0.3000	0.3174	335.2	1.0000	0,4652	
	339.2	0.3000	0.4231				
	^a x _z ^(\$) : i	0.3000 nitial mole : y of the sol	0.5150 fraction of binary ute.	solvent mix	ture; x ₁ ; mol	e fraction	
	^a x _z ^(\$) : i	nitial mole :	fraction of binary	solvent mix	ture; x ₁ : mo]	le fraction	
	^a x _z ^(\$) : i	nitial mole :	fraction of binary ute.	solvent mix INFORMATION		le fraction	
	a _{X3} (s): <u>i</u> solubilit	nitial mole :	fraction of binary ute. AUXILIARY	INFORMATION			
Con the	<pre>* x₃(\$): i solubilit OD: APPARA stant temp rmometer.</pre>	nitial mole i y of the sol	fraction of binary ute. AUXILIARY E and a precision	INFORMATION SOURCE AND (1) 99 %, Milwa	PURITY OF M Aldrich Che	ATERIALS: mical Company, sin, USA, was	
Con the Solution	<pre>a x₅(s): i solubilit oD: APPARA stant temp rmometer. ubilities amic method</pre>	nitial mole : cy of the sol TUS/PROCEDUR perature bath were measure od. Mixtures	AUXILIARY and a precision d using a of known concen-	INFORMATION SOURCE AND (1) 99 %, Milwa recry (2) Gold	PURITY OF M Aldrich Che ukee, Wiscon stallized fr Label, 99.9+	ATERIALS: mical Company, sin, USA, was om toluene. %, Aldrich Chemical	
Con the Solution training	<pre>* x₅(\$): i solubilit solubilit output stant temp rmometer. ubilities amic metho tions were ss ampoule</pre>	nitial mole : y of the sol TUS/PROCEDUR were measure d. Mixtures s sealed in t s and placed	AUXILIARY and a precision d using a of known concen- hick-walled in a constant	INFORMATION SOURCE AND (1) 99 %, Milwa recry (2) Gold Compa	PURITY OF M Aldrich Che ukee, Wiscon stallized fr Label, 99.9+ ny, was used	ATERIALS: mical Company, sin, USA, was om toluene. %, Aldrich Chemical as received.	
Con the Solidyn tra gla: tem were the by dete atu: solid ment	<pre>* x₃(s): i solubilit solubilit oD: APPARA stant temp rmometer. ubilities amic metho tions were ss ampoule perature t e rotated bath temp 0.1 K ever ermined by re at whic ute disapp</pre>	nitial mole i y of the sol TUS/PROCEDUR berature bath were measure od. Mixtures s sealed in t is and placed io equilibrat at a speed o berature was y 1200 secon- visually no- th the last t	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa recry (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che ukee, Wiscon stallized fr Label, 99.9+ ny, was used Label, 99.9+	ATERIALS: mical Company, sin, USA, was om toluene. %, Aldrich Chemical	
Con the Solidyn tra gla: tem were the by dete atu: solid ment	<pre>* x₃(s): i solubilit solubilit oD: APPARA stant temp rmometer. ubilities amic metho tions were ss ampoule perature t e rotated bath temp 0.1 K ever ermined by re at whic ute disapp ts were pe</pre>	nitial mole : y of the sol TUS/PROCEDUR Derature bath were measure d. Mixtures e sealed in t is and placed to equilibrat at a speed o verature was y 1200 secon visually no th the last t	AUXILIARY AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 %, Milwa recry (2) Gold Compa (3) Gold	PURITY OF M Aldrich Che ukee, Wiscon stallized fr Label, 99.9+ ny, was used Label, 99.9+ ny, was used	ATERIALS: mical Company, sin, USA, was om toluene. %, Aldrich Chemical as received. %, Aldrich Chemical	

COMPONENT	(PONENTS: 1) Dibenzothiophene; C ₁₂ H ₈ S;			ORIGINAL MEASUREMENTS:			
(1) Diber [132-	nzothiophene; C ₁₂ -65-0]	H ₈ S;	Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E.				
(2) Benze	) Benzene; C ₆ H ₆ ; [71-43-2]			J. Solution Chem. <u>1988</u> , 16, 519-534.			
(3) Thiop	ohene; C ₄ H ₄ S; [11	0-02-1]					
APTABLES	·····		PREPARED	B¥:			
<b>ARIABLES:</b> Temperature, Solvent composition			PREPARED BY: W.E. Acree, Jr.				
	CAL VALUES ⁸						
T/K	(1)	x ₁	T/K	x3 ^(s)	<b>x</b> 1		
309.9	-	1 0.1896	349.1	- <u>3</u> 0.3000	0.6080		
315.3		0.2246	355.4	0.3000	0.7103		
327.8		0.3347					
337.2		0.4362	309.3	1.0000	0.2379		
342.3	-	0.5144	315.2	1.0000	0.2776		
54213	,		322.7	1.0000	0.3361		
200	0 3000	0.2009			0.3743		
308.7		0.2008	327.0	1.0000	0.3743		
323.2	-	0.3100	328.1	1.0000			
333.1	0.3000	0.4051	337.0	1.0000	0.4950		
a xz ^{(s}	) 0.3000 (): initial mole bility of the sol	0.5025 fraction of binary ute.	solvent mix	ture; x ₁ : mo)	e fraction		
a _{X1} (s	): initial mole	fraction of binary	BOlvent mix	ture; x ₁ : mo)	e fraction		
a _{X1} (s	): initial mole	fraction of binary ute.	solvent mix		e fraction		
a _{X3} (; solut	): initial mole	fraction of binary ute. AUXILIARY	INFORMATIO				
a x3(s solut ETHOD: AN Constant thermomet	PPARATUS/PROCEDUF temperature bath	fraction of binary ute. AUXILIARY E a and a precision	INFORMATION SOURCE AND (1) 99 % Milwi	N D PURITY OF M , Aldrich Che	ATERIALS: mical Company, sin, USA, was		
a x3(s solub ETHOD: AN Constant thermomet Solubilit dynamic m trations glass amp	PPARATUS/PROCEDUR temperature bath er. cles were measure were sealed in t boules and placed	AUXILIARY AUXILIARY E a and a precision d using a of known concen- hick-walled in a constant	INFORMATION SOURCE AND (1) 99 & Milwa recry (2) Gold Compa	N D PURITY OF M , Aldrich Che aukee, Wiscon ystallized fr Label, 99.9+ any, was used	ATERIALS: mical Company, sin, USA, was om toluene. %, Aldrich Chemical as received.		
ETHOD: AF Constant thermomet Solubilit dynamic m trations glass amp temperatu were rota the bath by 0.1 K determine ature at	PARATUS/PROCEDUR temperature bath ser. ties were measure wethod. Mixtures were sealed in t boules and placed tre to equilibrat ted at a speed of temperature was every 1200 secon which the last t sappeared. At let	AUXILIARY AUXILIARY E a and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased dds. Solubility thing the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 % Milww recr (2) Gold Compu (3) Gold	N D PURITY OF M , Aldrich Che aukee, Wiscon ystallized fr Label, 99.9+ any, was used Label, 99.9+	ATERIALS: mical Company, sin, USA, was om toluene. %, Aldrich Chemical		
ETHOD: AF Constant thermomet Solubilit dynamic m trations glass amp temperatu were rota the bath by 0.1 K determine ature at solute di ments wer	PARATUS/PROCEDUR temperature bath ser. ties were measure wethod. Mixtures were sealed in t boules and placed tre to equilibrat ted at a speed of temperature was every 1200 secon which the last t sappeared. At let	AUXILIARY AUXILIARY E a and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased dds. Solubility thing the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99 % Milww recr (2) Gold Compu (3) Gold	N D PURITY OF M , Aldrich Che aukee, Wiscon ystallized fr Label, 99.9+ any, was used Label, 99.9+ any, was used	ATERIALS: mical Company, sin, USA, was om toluene. %, Aldrich Chemical as received. %, Aldrich Chemical		

COMP	onents:			ORIGINAL MEASUREMENTS:			
(1)	Dibenzoth [132-65-0	liophene; C ₁₂ H	H ₈ S;	Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E.			
(2)	•	ne; C ₆ H ₁₂ ; [1	.10-82-7]	J. Solution Chem. <u>1988</u> , 16, 519-534.			
		; C ₄ H ₄ S; [110					
VARI	ABLES:		<u> </u>	PREPARED I	 BY:		
VARIABLES: Temperature, Solvent composition			W.E. Acree, Jr.				
EXPE	RIMENTAL V	ALUES ⁸					
	<i>т/</i> к	x3 ⁽⁵⁾	<i>x</i> 1	T/K	x3 ^(S)	<i>x</i> 1	
	320.6	0.0000	0.0871	348.5	0.3000	0.5381	
	326.6	0.0000	0.1129	355.1	0.3000	0.6704	
	328.2	0.0000	0.1294				
	335.8	0.0000	0.1999	309.3	1.0000	0.2379	
	343.0	0.0000	0.3154	315.2	1.0000	0.2776	
	343.3	0.0000	0.3346	315.2	1.0000	0.3361	
	343.3	0.0000	0.3346				
				327.0		0.3743	
	322.3	0.3000	0.1617	328.1	1.0000	0.3872	
	333.6	0,3000	0.2737	337.0	1.0000	0.4950	
	339.3	0.3000	0.3647				
			AUXILIARY	INFORMATION	ł		
œth(	OD: APPARA	TUS/PROCEDUR	E	SOURCE AND	D PURITY OF M	Aterials:	
then Solu dyna trat glas temp were the by ( dete atus solu ment	rmometer. ubilities amic metho tions were ss ampoule perature t b rotated bath temp 0.1 K ever armined by re at whic ute disapp	were measure d. Mixtures sealed in t is and placed o equilibrat at a speed o verature was y 1200 secon visually no h the last t	of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	Milwa recry (2) Gold Compa (3) Gold	Aukee, Wiscon /stallized fr Label, 99.9+ Any, was used Label, 99.9+ Any, was used	mical Company, sin, USA, was om toluene. %, Aldrich Chemical as received. %, Aldrich Chemical as received.	

COMPONENTS: (1) Dibenzothiophene; C. ₂ H.S;			ORIGINAL MEASUREMENTS:			
(1) Dibenzothiophene; C ₁₂ H ₈ S; [132-65-0]			Coon, J.E.; Sediawan, W.B.; Auwaerter, J.E.; McLaughlin, E.			
(2) Thiophen	e; $C_4H_4S$ ; [110	)-02-1]	J. Solut:	ion Chem. <u>19</u>	<u>88</u> , <i>16</i> , 519-534.	
(3) Pyridine	; C ₅ H ₅ N; [110-	•86-1]				
ARIABLES:		<u> </u>	PREPARED I	B¥ :	<u></u>	
Temperature,	Solvent comp	osition	W.E. Acree, Jr.			
XPERIMENTAL	VALUES ^a		. <b>I</b>			
T/K	x3 ^(s)	× ₁	T/K	x3 ⁽⁸⁾	<b>*</b> 1	
309.3	0.0000	0.2379	345.8	0.3000	0.5871	
315.2	0.0000	0.2776	353.1	0.3000	0.7012	
322.7	0.0000	0.3361				
327.0	0.0000	0.3743	306.5	1.0000	0.2143	
328.1	0.0000	0.3872	313.0	1.0000	0.2552	
337.0	0.0000	0.4950	322.8	1.0000	0.3313	
			327.4	1.0000	0.3784	
304.9	0.3000	0.2096	334.7	1.0000	0.4498	
316.8	0.3000	0.2906	335.2	1.0000	0.4652	
329.5	0.3000	0.3994				
339.0	0.3000	0.5071				
		AUXILIARY	INFORMATION	r	4-44-44 4	
ETHOD: APPAR	ATUS/PROCEDUR		[	D PURITY OF M	ATERIALS:	
Constant temp thermometer. Solubilities	perature bath	E and a precision d using a	SOURCE AND (1) 99 %, Milwa	PURITY OF M Aldrich Che	mical Company, sin, USA, was	
Constant tem thermometer. Solubilities dynamic methe trations werr glass ampould temperature i were rotated the bath tem by 0.1 K even determined by ature at which solute disapp	perature bath were measured od. Mixtures of e sealed in ti es and placed to equilibrat at a speed of perature was a ry 1200 second y visually not ch the last to peared. At les erformed for d	E and a precision of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	(1) 99 %, Milwa recry (2) Gold Compa (3) Gold	D PURITY OF M Aldrich Che uukee, Wiscon /stallized fr Label, 99.9+ my was used Label, 99.9+	mical Company, sin, USA, was	
Constant temp thermometer. Solubilities dynamic methe trations were glass ampould temperature i were rotated the bath temp by 0.1 K even determined by ature at which solute disapp ments were po	perature bath were measured od. Mixtures of e sealed in ti es and placed to equilibrat at a speed of perature was a ry 1200 second y visually not ch the last to peared. At les erformed for d	E and a precision of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	(1) 99 %, Milwa recry (2) Gold Compa (3) Gold	D PURITY OF M Aldrich Che ukee, Wiscon /stallized fr Label, 99.9+ my was used Label, 99.9+ my was used	mical Company, sin, USA, was om toluene. %, Aldrich Chemics as received. %, Aldrich Chemics	

			ORIGINAL MEASUREMENTS:				
(1) Dibenzot [132-65-	hiophene; C ₁₂ H 0]	4 ₈ 5;	Coon, J.E.; Auwaerter, J.E.; McLaughlin, E.				
(2) $1, 2, 3, 4 - C_{10}H_{12}$ [	<pre>2) 1,2,3,4-Tetrahydronaphthalene; C₁₀H₁₂; [119-64-2]</pre>			Fluid Phase Equilibr. <u>1989</u> , 44, 305-345.			
<pre>(3) Decahydronaphthalene; C₁₀H₁₈; [91-17-8]</pre>							
ARIABLES:		<u></u>	PREPARED E	3¥:	<u> </u>		
Temperature,	Temperature, Solvent composition			W.E. Acree, Jr.			
EXPERIMENTAL	VALUES ^a						
T/K	x3 ^(s)	<i>x</i> 1	T/K	x3 ^(s)	×1		
308.7	0.0000	0.2163	343.1	0.5000 ·	0.5102		
318.2	0.0000	0.2781	349.2	0.5000	0.6089		
326.6	0.0000	0.3508					
336.3	0.0000	0.4466	311.3	1.0000	0.1056		
337.8	0.0000	0.4692	318.9	1.0000	0.1393		
			325.8	1.0000	0.1859		
303.7	0.5000	0.1402	333.9	1.0000	0.2628		
314.3	0.5000	0.1964					
327.6	0 0000						
22/10	0.5000	0.3077					
337.0 ⁸ x ₃ ^(s) :	0.5000	0.4194 fraction of binary	solvent mix	ture; x ₁ : mol	e fraction		
337.0 ⁸ x ₁ (s):	0.5000 initial mole :	0.4194 fraction of binary	solvent mix	ture; x ₁ : mol	e fraction		
337.0 ⁸ x ₁ (s):	0.5000 initial mole :	0.4194 fraction of binary ute.	BOIVENT MIX		e fraction		
337.0 ^a _{%3} (s); solubili	0.5000 initial mole :	0.4194 fraction of binary ute. AUXILIARY	INFORMATION				
337.0 a _{X3} (s); solubili solubili METHOD: APPAR Constant tem thermometer. Solubilities dynamic meth trations wer glass ampoul temperature were rotated the bath tem by 0.1 K eve determined b ature at whi solute disap	0.5000 initial mole : ty of the sol attronomic for the sol attronomic for the sol perature bath were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t	0.4194 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.5 Milwa recry (2) 99.6+ (3) 99+ & havin and 3 Compo	PURITY OF M %, Aldrich C ukee, Wiscon stallized fr %, Aldrich fr %, Aldrich Ch g an isomer 9.4 % trans. ments 2 and ular sieves	ATERIALS: hemical Company, Bin, USA, was om golution. Chemical Company. emical Company, ratio of 60.6 % cis		

FLUORANTHENE SOLUBILITIES IN BINARY SOLVENT MIXTURES

## I. <u>Alkane + Alkane (including cycloalkanes)</u>

None

II. <u>Alkane + Aromatic Hydrocarbon</u>

None

III. <u>Alkane + Ester</u>

None

IV. Alkane + Ether

None

V. <u>Alkane + Chloroalkane</u>

None

VI. Ether + Chloroalkane

None

VII. <u>Miscellaneous</u>

methylbenzene + 2-propanone methylbenzene + ethanol methylbenzene + pyridine

## 206 ORIGINAL MEASUREMENTS: COMPONENTS: Krezewki, R.; Smutek, M. (1) Fluoranthene; C₁₆H₁₀; [206-44-0] Collection Czech. Chem. Commun. 1967, (2) Methylbenzene; C7H8; [108-88-3] 32, 1258-1259. (3) 2-Propanone; C₃H₆O; [67-64-1] VARIABLES: PREPARED BY: T/K = 293, Solvent composition W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne EXPERIMENTAL VALUES⁸ $t = 20.0 \, ^{\circ}C$ x2^{(s),b} *x*2 ×₁ 0.000 0.000 0.0711 0.150 0.124 0.0911 0.296 0.264 0.109 0.387 0.342 0.116 0.486 0.428 0.120 0.715 0.628 0.122 1.000 0.895 0.105 ^a $x_2^{(s)}$ : initial mole fraction of binary solvent mixture; $x_1$ : mole fraction solubility of the solute; $x_2$ : mole fraction of component 2 in the ternary solution. ^b computed by compiler.

#### AUXILIARY INFORMATION

## SOURCE AND PURITY OF MATERIALS: METHOD: APPARATUS/PROCEDURE Purity not specified, coal tar extract, was recrystallized several times from ethanol to give a melting point temperature of 110.0-110.3 °C. Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at (2) 99 %, Urxovy Zavody, Czech., was used as received. constant temperature. Aliquots of saturated solutions were transferred into tared containers and weighed. Solubili-(3) Commerical sample, purity and source not specified, was dehydrated and distilled shortly before use. ties were calculated from the weight of the solid residue which remained after the solvent had evaporated. ESTIMATED ERRORS: T/K: precision $\pm 0.05$ . $x_2$ : $\pm$ 0.001 (compiler). $x_1$ : $\pm$ 3 % (relative error; compiler).

Components:	ORIGINAL MEASUREMENTS:
(1) Fluoranthene; C ₁₆ H ₁₀ ; [206-44-0	] Krezewki, R.; Smutek, M.
<ul> <li>(2) Methylbenzene; C₇H₈; [108-88-3]</li> <li>(3) Ethanol; C₂H₆O; [64-17-5]</li> </ul>	] Collection Czech. Chem. Commun. <u>1967</u> , 32, 1258-1259.
(.,	
VARIABLES:	PREPARED BY:
T/K = 293, Solvent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALUES ⁸ $t = 20.0  ^{\circ}C$	
x2 ^{(s),b} x2	<i>x</i> 1
0.000 0.000	0.00514
0.111 0.110	0.0102
0.250 0.245	0.0209
0.429 0.411	0.0411
0.666 0.619	0.0711
0.818 0.744	0.0905
1.000 0.895	0.105
AUXILI	ARY INFORMATION
AUXILI METHOD: APPARATUS/PROCEDURE	ARY INFORMATION SOURCE AND PURITY OF MATERIALS:
	SOURCE AND PURITY OF MATERIALS: (1) Purity not specified, coal tar extract, was recrystallized several times from ethanol to give a melting placed owed t (2) 99 %, Urxovy Zavody, Czech., was used as received. to ubili- ht of (3) Commercial sample, purity and source not specified, was dehydrated and

(1) Fluoranthene; C ₁₆ H ₁₀ ; [206-44-0]	ORIGINAL MEASUREMENTS:
	Krezewki, R.; Smutek, M.
(2) Methylbenzene; C ₇ H ₈ ; [108-88-3]	Collection Czech. Chem. Commun. 1967,
(3) Pyridine; C ₅ H ₅ N; [110-86-1]	32, 1258-1259.
VARIABLES:	PREPARED BY:
T/K = 293, Solvent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALUES ^a t = 20.0 °C	
x ₂ ^{(s),b} x ₂	×1
0.000 0.000	0.158
0.177 0.149	0.156
0.364 0.309	0.151
0.562 0.482	0.143
0.775 0.676	0.128
1.000 0.895	0.105
AUXIL	
	IARY INFORMATION

## I. <u>Alkane + Alkane (including cycloalkanes)</u>

None

II. Alkane + Aromatic Hydrocarbon

cyclohexane + benzene

III. Alkane + Ester

None

IV. <u>Alkane + Ether</u>

None

V. <u>Alkane + Chloroalkane</u>

None

VI. Ether + Chloroalkane

None

## VII. <u>Miscellaneous</u>

```
benzene + pyridine
cyclohexane + pyridine
benzene + thiophene
cyclohexane + thiophene
thiophene + pyridine
1,2,3,4-tetrahydronaphthalene + decahydronaphthalene
```

(2) Cyclohexane; C _Q H _Q ; [110-82-7]       K.G.; McLaughlin, E.         (3) Benzene; C _Q H _Q ; [71-43-2]       J. Chem. Eng. Data <u>1985</u> , 30, 403         VARIABLES:       PREPARED BY:         Temperature, Solvent composition       W.E. Acree, Jr.         EXPERIMENTAL VALUES ⁶ Y.K. X ₃ ^(*) X ₁ T/K       X ₃ ^(*) X ₁ T/K       X ₃ ^(*) X ₁ 310.95       0.0000       0.0537         321.75       0.0000       0.0664         327.35       0.0000       0.1122         311.65       0.7000       0.1596         331.85       0.0000       0.1122         311.65       0.7000       0.2777         336.45       0.0000       0.1733         39.65       0.7000       0.4635         346.25       0.0000       0.2787         319.65       0.3000       0.1346         307.75       1.0000       0.1665         327.45       0.3000       0.1412         319.65       0.3000       0.1346         307.75       1.0000       0.1665         327.45       0.3000       0.3611         318.65       0.3000       0.3623         346.25       0.3000 <th colspan="3" rowspan="3">J. Chem. Eng. Data <u>1985</u>, 30, 403-409.</th> <th colspan="3">Components :</th>	J. Chem. Eng. Data <u>1985</u> , 30, 403-409.			Components :		
Temperature, Solvent composition         W.E. Acree, Jr.           EXPERIMENTAL VALUES ⁶ 7/K         x ₃ ⁽⁶⁾ x ₁ T/K         x ₃ ⁽⁶⁾ x ₁ 7/K         x ₃ ⁽⁶⁾ x ₁ 310.95         0.0000         0.0537         351.45         0.5000         0.4636           316.25         0.0000         0.0684         359.35         0.5000         0.5730           321.75         0.0000         0.1122         311.65         0.7000         0.1596           331.85         0.0000         0.1384         330.35         0.7000         0.2777           36.45         0.0000         0.2200         346.85         0.7000         0.4353           346.25         0.0000         0.2200         346.85         0.7000         0.4353           346.25         0.0000         0.2787         356.55         0.7000         0.4353           342.15         0.3000         0.1346         307.75         1.0000         0.1950           342.15         0.3000         0.4192         323.05         1.0000         0.2215           350.65         0.3000         0.5471         330.45         1.0000         0.3957           319.				(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7] (3) Benzene; C ₆ H ₆ ; [71-43-2]		
EXPERIMENTAL VALUES*         T/K       x3(*)         310.95       0.0000       0.0537         316.25       0.0000       0.0684         316.25       0.0000       0.0684         321.75       0.0000       0.0871         327.35       0.0000       0.1122         31.65       0.0000       0.1122         31.65       0.0000       0.1384         330.35       0.7000       0.2777         336.45       0.0000       0.1733         341.45       0.0000       0.2200         346.25       0.0000       0.2787         356.55       0.7000       0.5477         319.65       0.3000       0.1346       307.75       1.0000       0.1950         342.15       0.3000       0.1346       307.75       1.0000       0.2215         350.65       0.3000       0.4192       323.05       1.0000       0.2528         359.25       0.3000       0.5471       330.45       1.0000       0.3957         311.95       0.5000       0.558       340.65       1.0000       0.3957         311.95       0.5000       0.3643       354.85       1.0000       0.5477						
$T/K$ $x_3^{(6)}$ $x_1$ $T/K$ $x_3^{(6)}$ $x_1$ 310.95       0.0000       0.0537       351.45       0.5000       0.4636         316.25       0.0000       0.0684       359.35       0.5000       0.5730         321.75       0.0000       0.1122       311.65       0.7000       0.1596         331.85       0.0000       0.1384       330.35       0.7000       0.2777         336.45       0.0000       0.2200       346.85       0.7000       0.4353         341.45       0.0000       0.2200       346.85       0.7000       0.4353         346.25       0.0000       0.2787       356.55       0.7000       0.5477         319.65       0.3000       0.1346       307.75       1.0000       0.1665         327.45       0.3000       0.1809       313.45       1.0000       0.2215         342.15       0.3000       0.4192       323.05       1.0000       0.3525         317.05       0.5000       0.1558       340.65       1.0000       0.3525         317.05       0.5000       0.2548       348.35       1.0000       0.5477 <td col<="" th=""><th></th><th>e, Jr.</th><th>W.E. Acree</th><th colspan="2">Temperature, Solvent composition</th></td>	<th></th> <th>e, Jr.</th> <th>W.E. Acree</th> <th colspan="2">Temperature, Solvent composition</th>		e, Jr.	W.E. Acree	Temperature, Solvent composition	
310.95       0.0000       0.0537       351.45       0.5000       0.4636         316.25       0.0000       0.0684       359.35       0.5000       0.5730         321.75       0.0000       0.1122       311.65       0.7000       0.1596         331.85       0.0000       0.1122       311.65       0.7000       0.2777         336.45       0.0000       0.1733       339.85       0.7000       0.3603         341.45       0.0000       0.2200       346.85       0.7000       0.4353         346.25       0.0000       0.2787       356.55       0.7000       0.4353         346.25       0.0000       0.2787       356.55       0.7000       0.4635         319.65       0.3000       0.1809       313.45       1.0000       0.1950         342.15       0.3000       0.3111       318.15       1.0000       0.2528         359.25       0.3000       0.4192       323.05       1.0000       0.3525         317.05       0.5000       0.1558       340.65       1.0000       0.3957         331.95       0.5000       0.2548       348.35       1.0000       0.5477          yatanic method. Mixtures of kno		<u></u>		<u> </u>	LUES ⁸	EXPERIMENTAL V
316.25       0.0000       0.0684       359.35       0.5000       0.5730         321.75       0.0000       0.1122       311.65       0.7000       0.1596         331.85       0.0000       0.1384       330.35       0.7000       0.2777         336.45       0.0000       0.1733       339.85       0.7000       0.3603         341.45       0.0000       0.2200       346.85       0.7000       0.4353         346.25       0.0000       0.2787       356.55       0.7000       0.5477         319.65       0.3000       0.1346       307.75       1.0000       0.1665         327.45       0.3000       0.1809       313.45       1.0000       0.1950         342.15       0.3000       0.4192       323.05       1.0000       0.2528         359.25       0.3000       0.4192       323.05       1.0000       0.3525         317.05       0.5000       0.2548       348.35       1.0000       0.3957         331.95       0.5000       0.3643       354.85       1.0000       0.5477         * x ₆ ^(a) ; initial mole fraction of binary solvent mixture; x ₁ ; mole fraction solubility of the solute.       Solucet and PURATUS/PROCEDURE       Solucilities were measured using a		*3 ^(s)	T/K	×1	x3 ^(s)	T/K
321.75       0.0000       0.0871         327.35       0.0000       0.1122       311.65       0.7000       0.1596         331.85       0.0000       0.1384       330.35       0.7000       0.2777         336.45       0.0000       0.2200       346.85       0.7000       0.3603         341.45       0.0000       0.2200       346.85       0.7000       0.4353         346.25       0.0000       0.2787       356.55       0.7000       0.5477         319.65       0.3000       0.1346       307.75       1.0000       0.1950         342.15       0.3000       0.4192       323.05       1.0000       0.2218         350.65       0.3000       0.4192       323.05       1.0000       0.3055         317.05       0.5000       0.1558       340.65       1.0000       0.3957         331.95       0.5000       0.2548       348.35       1.0000       0.4744         343.15       0.5000       0.3643       354.85       1.0000       0.5477         * xi ^(*) ; initial mole fraction of binary solvent mixture; x ₁ : mole fraction solubility of the solute.         NUTILIARY INFORMATION          Soluc	4636	0.5000	351.45	0.0537	0.0000	310.95
327.35       0.0000       0.1122       311.65       0.7000       0.1596         331.85       0.0000       0.1384       330.35       0.7000       0.2777         336.45       0.0000       0.1733       339.85       0.7000       0.3603         341.45       0.0000       0.2200       346.85       0.7000       0.4353         346.25       0.0000       0.2787       356.55       0.7000       0.5477         319.65       0.3000       0.1809       313.45       1.0000       0.1950         342.15       0.3000       0.4192       323.05       1.0000       0.2215         350.65       0.3000       0.4192       323.05       1.0000       0.3055         317.05       0.5000       0.1558       340.65       1.0000       0.3957         331.95       0.5000       0.2548       348.35       1.0000       0.4744         343.15       0.5000       0.3643       354.85       1.0000       0.5477         AUXILIARY INFORMATION         MUTILIARY INFORMATION	5730	0.5000	359.35	0.0684	0.0000	316.25
331.85       0.0000       0.1384       330.35       0.7000       0.2777         336.45       0.0000       0.2200       346.85       0.7000       0.3603         341.45       0.0000       0.2200       346.85       0.7000       0.4353         346.25       0.0000       0.2787       356.55       0.7000       0.5477         319.65       0.3000       0.1346       307.75       1.0000       0.1665         327.45       0.3000       0.1809       313.45       1.0000       0.2215         350.65       0.3000       0.4192       323.05       1.0000       0.2528         359.25       0.3000       0.5471       330.45       1.0000       0.3525         317.05       0.5000       0.1558       340.65       1.0000       0.3957         331.95       0.5000       0.2548       348.35       1.0000       0.5477         * x3 ^(*) : initial mole fraction of binary solvent mixture; x1: mole fraction solubility of the solute.       Source and pulced alumina and th recrystallized from toluene.         AUTILIARY INFORMATION		·		0.0871	0.0000	321.75
336.45       0.0000       0.1733       339.85       0.7000       0.3603         341.45       0.0000       0.2200       346.85       0.7000       0.4353         346.25       0.0000       0.2787       356.55       0.7000       0.5477         319.65       0.3000       0.1346       307.75       1.0000       0.1665         327.45       0.3000       0.1809       313.45       1.0000       0.1950         342.15       0.3000       0.4192       323.05       1.0000       0.2215         350.65       0.3000       0.5471       330.45       1.0000       0.3055         317.05       0.5000       0.1558       340.65       1.0000       0.3957         331.95       0.5000       0.3643       354.85       1.0000       0.5477         * x_5 ^(a) ; initial mole fraction of binary solvent mixture; x_i; mole fraction solubility of the solute.       SOURCE AND PURITY OF MATERIALS;         AUIILIARY INFORMATION	1596	0.7000	311.65	0.1122	0.0000	327.35
341.45       0.0000       0.2200       346.85       0.7000       0.4353         346.25       0.0000       0.2787       356.55       0.7000       0.5477         319.65       0.3000       0.1346       307.75       1.0000       0.1665         327.45       0.3000       0.1809       313.45       1.0000       0.1950         342.15       0.3000       0.4192       323.05       1.0000       0.2528         350.65       0.3000       0.5471       330.45       1.0000       0.3055         351.05       0.3000       0.5471       330.45       1.0000       0.3055         317.05       0.5000       0.1558       340.65       1.0000       0.3957         331.95       0.5000       0.3643       354.85       1.0000       0.5477         * x ₃ ⁽⁶⁾ ; initial mole fraction of binary solvent mixture; x ₁ : mole fraction solubility of the solute.       Source AND PURITY OF MATERIALS;         AUXILIARY INFORMATION	2777	0.7000	330.35	0.1384	0.0000	331.85
346.25       0.0000       0.2787       356.55       0.7000       0.5477         319.65       0.3000       0.1346       307.75       1.0000       0.1665         327.45       0.3000       0.1809       313.45       1.0000       0.1950         342.15       0.3000       0.3111       318.15       1.0000       0.2215         350.65       0.3000       0.4192       323.05       1.0000       0.2528         359.25       0.3000       0.5471       330.45       1.0000       0.3055         317.05       0.5000       0.1558       340.65       1.0000       0.3957         331.95       0.5000       0.2548       348.35       1.0000       0.4744         343.15       0.5000       0.3643       354.85       1.0000       0.5477         * x ₁ ⁽⁹⁾ ; initial mole fraction of binary solvent mixture; x ₁ ; mole fraction solubility of the solute.       SOURCE AND FURITY OF MATERIALS;         AUXILIARY INFORMATION         AUXILIARY INFORMATION	3603	0.7000	339.85	0.1733	0.0000	336.45
319.65       0.3000       0.1346       307.75       1.0000       0.1665         327.45       0.3000       0.1809       313.45       1.0000       0.1950         342.15       0.3000       0.3111       318.15       1.0000       0.2215         350.65       0.3000       0.4192       323.05       1.0000       0.2528         359.25       0.3000       0.5471       330.45       1.0000       0.3055         317.05       0.5000       0.1558       340.65       1.0000       0.3957         331.95       0.5000       0.2548       348.35       1.0000       0.4744         343.15       0.5000       0.3643       354.85       1.0000       0.5477         * x ₄ ^(a) ; initial mole fraction of binary solvent mixture; x ₁ ; mole fraction solubility of the solute.       Source AND PURITY OF MATERIALS:         AUXILIARY INFORMATION         METHOD: APPARATUS/PROCEDURE         Constant temperature bath and a precision thermometer.       Source AND PURITY OF MATERIALS:         Solubilities were measured using a dynamic method. Mixtures of known concentrations were sealed in thick-walled glass ampoules and placed in a constant       (2) Gold Label, 99.9+ %, Aldrich	\$353	0.7000	346.85	0.2200	0.0000	341.45
327.45       0.3000       0.1809       313.45       1.0000       0.1950         342.15       0.3000       0.3111       318.15       1.0000       0.2215         350.65       0.3000       0.4192       323.05       1.0000       0.2528         359.25       0.3000       0.5471       330.45       1.0000       0.3055         317.05       0.5000       0.1558       340.65       1.0000       0.3957         331.95       0.5000       0.2548       348.35       1.0000       0.4744         343.15       0.5000       0.3643       354.85       1.0000       0.5477         * x ₃ ^(s) : initial mole fraction of binary solvent mixture; x ₁ : mole fraction solubility of the solute.       SOURCE AND PURITY OF MATERIALS:         AUTILIARY INFORMATION	5477	0.7000	356.55	0.2787	0.0000	346.25
342.15       0.3000       0.3111       318.15       1.0000       0.2215         350.65       0.3000       0.4192       323.05       1.0000       0.2528         359.25       0.3000       0.5471       330.45       1.0000       0.3055         317.05       0.5000       0.1558       340.65       1.0000       0.3957         331.95       0.5000       0.2548       348.35       1.0000       0.4744         343.15       0.5000       0.3643       354.85       1.0000       0.5477         * x ₃ ^(s) : initial mole fraction of binary solvent mixture; x ₁ : mole fraction solubility of the solute.       Source and PURITY of MATERIALS:         AUXILIARY INFORMATION	1665	1.0000	307.75	0.1346	0.3000	319.65
350.65       0.3000       0.4192       323.05       1.0000       0.2528         359.25       0.3000       0.5471       330.45       1.0000       0.3055         317.05       0.5000       0.1558       340.65       1.0000       0.3957         31.95       0.5000       0.2548       348.35       1.0000       0.4744         343.15       0.5000       0.3643       354.85       1.0000       0.5477         * x ₃ ^(s) : initial mole fraction of binary solvent mixture; x ₁ : mole fraction solubility of the solute.       0.5477       *       x ₁ : mole fraction solubility of the solute.         AUXILIARY INFORMATION         METHOD: APPARATUS/PROCEDURE         Solubilities were measured using a dynamic method. Mixtures of known concentrations were sealed in thick-walled glass ampoules and placed in a constant       (2) Gold Label, 99.9+ %, Aldrich	1950	1.0000	313.45	0.1809	0.3000	327.45
359.25       0.3000       0.5471       330.45       1.0000       0.3055         317.05       0.5000       0.1558       340.65       1.0000       0.3957         31.95       0.5000       0.2548       348.35       1.0000       0.4744         343.15       0.5000       0.3643       354.85       1.0000       0.5477         * x ₃ ^(s) : initial mole fraction of binary solvent mixture; x ₁ : mole fraction solubility of the solute.       Solvent mixture; x ₁ : mole fraction solvent mixture; x ₁ : mole fraction solubilities were measured using a dynamic method. Mixtures of known concentrations were sealed in thick-walled glass ampoules and placed in a constant       Solubilities length and placed in a constant       (2) Gold Label, 99.9+ %, Aldrich	2215	1.0000	318.15	0.3111	0.3000	342.15
$336.25  1.0000  0.3525$ $317.05  0.5000  0.1558  340.65  1.0000  0.3957$ $331.95  0.5000  0.2548  348.35  1.0000  0.4744$ $343.15  0.5000  0.3643  354.85  1.0000  0.5477$ • $x_3^{(5)}$ : initial mole fraction of binary solvent mixture; $x_1$ : mole fraction solubility of the solute. $AUXILIARY \text{ INFORMATION}$ METHOD: APPARATUS/PROCEDURE Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concentrations were sealed in thick-walled glass ampoules and placed in a constant (2) Gold Label, 99.9+ \$, Aldrich	2528	1.0000	323.05	0.4192	0.3000	350.65
$317.05$ $0.5000$ $0.1558$ $340.65$ $1.0000$ $0.3957$ $331.95$ $0.5000$ $0.2548$ $348.35$ $1.0000$ $0.4744$ $343.15$ $0.5000$ $0.3643$ $354.85$ $1.0000$ $0.5477$ * $x_3^{(s)}$ : initial mole fraction of binary solvent mixture; $x_1$ : mole fraction solubility of the solute.Solvent mixture; $x_1$ : mole fraction solubility of the solute.AUXILIARY INFORMATIONMETHOD: APPARATUS/PROCEDUREConstant temperature bath and a precision thermometer.Solubilities were measured using a dynamic method. Mixtures of known concentrations were sealed in thick-walled glass ampoules and placed in a constantSOURCE AND PURITY OF MATERIALS: (1) 97.9 %, Eastern Chemical Composition toluene.(2) Gold Label, 99.9+ %, Aldrich	3055	1.0000	330.45	0.5471	0.3000	359.25
331.95       0.5000       0.2548       348.35       1.0000       0.4744         343.15       0.5000       0.3643       354.85       1.0000       0.5477         * x ₃ ^(s) : initial mole fraction of binary solvent mixture; x ₁ : mole fraction solubility of the solute.       Solvent mixture; x ₁ : mole fraction         AUXILIARY INFORMATION         METHOD: APPARATUS/PROCEDURE         Constant temperature bath and a precision thermometer.         Solubilities were measured using a dynamic method. Mixtures of known concentrations were sealed in thick-walled glass ampoules and placed in a constant         (2) Gold Label, 99.9+ %, Aldrich	3525	1.0000	336.25			
343.15       0.5000       0.3643       354.85       1.0000       0.5477         * $x_3^{(s)}$ : initial mole fraction of binary solvent mixture; $x_1$ : mole fraction solubility of the solute.       Solvent mixture; $x_1$ : mole fraction fraction solvent mixture; $x_1$ : mole fraction fraction solver attracted and a precision thermometer.         Solubilities were measured using a dynamic method. Mixtures of known concentrations were sealed in thick-walled glass ampoules and placed in a constant       Solver and placed in a constant       (2) Gold Label, 99.9+ %, Aldrich	3957	1.0000	340.65	0.1558	0.5000	317.05
<ul> <li>* x₃⁽⁵⁾: initial mole fraction of binary solvent mixture; x₁: mole fraction solubility of the solute.</li> <li>AUXILIARY INFORMATION</li> <li>METHOD: APPARATUS/PROCEDURE</li> <li>Constant temperature bath and a precision thermometer.</li> <li>Solubilities were measured using a dynamic method. Mixtures of known concentrations were sealed in thick-walled glass ampoules and placed in a constant</li> <li>Solubilities are measured using a dynamic method. Mixtures of known concentrations were sealed in thick-walled</li> <li>(2) Gold Label, 99.9+ %, Aldrich</li> </ul>	1744	1.0000	348.35	0.2548	0.5000	331.95
AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant (2) Gold Label, 99.9+ %, Aldrich	5477	1.0000	354.85	0.3643	0.5000	343.15
METHOD: APPARATUS/PROCEDURE Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant Solubilities are measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant Solubilities are measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant METHOD: SOURCE AND PURITY OF MATERIALS: SOURCE AND PURITY OF MATERIALS: (1) 97.9 %, Eastern Chemical Comp Smithtown, New York, USA, was over activated alumina and the recrystallized from toluene. (2) Gold Label, 99.9+ %, Aldrich	ction	ure; x ₁ : mole	solvent mixt	raction of binary te.	itial mole fr of the solut	^a x ₃ ^(s) : in solubility
Constant temperature bath and a precision thermometer. (1) 97.9 %, Eastern Chemical Comp Smithtown, New York, USA, was over activated alumina and the recrystallized from toluene. glass ampoules and placed in a constant (2) Gold Label, 99.9+ %, Aldrich			INFORMATION	AUXILIARY		
thermometer. Smithtown, New York, USA, was over activated alumina and the recrystallized from toluene. dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant (2) Gold Label, 99.9+ %, Aldrich	LS:	PURITY OF MATH	SOURCE AND	:	US/PROCEDURE	METHOD: APPARAT
were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.	5A, was passed and then Luene. Idrich Chemical sconsin, USA, Ldrich Chemical	town, New York, activated alumi stallized from Label, 99.9+ %, ny, Milwaukee, sed as received Label, 99.9+ %,	(2) Gold L Compan was us (3) Gold L	Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture		

- (2) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was used as received.
- (3) Gold Label, 99.9+ %, Aldrich Chemical Company was used as received.

ESTIMATED ERRORS:

 $\begin{array}{l} T/K: \ \text{precision} \pm \ 0.1. \\ x_3^{(s)}: \pm \ 0.0001. \\ x_1: \pm \ 0.0003. \end{array}$ 

	components:			ORIGINAL MEASUREMENTS:		
(1) Fluorene; $C_{13}H_{10}$ ; [86-73-7]			Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E.			
(2) Benzene; C ₆ H ₆ ; [71-43-2] (3) Pyridine; C ₅ H ₅ N; [110-86-1]						
			-	<u>.987</u> , <i>32</i> , 233–240.		
		Choi, P.B.; McLaughlin, E. Ind. Chem. Eng. Fundam. <u>1983</u> , 22, 46-51. PREPARED BY:				
VARIABLES:						
Temperature, Solvent composition		W.E. Acre	ee, Jr.			
EXPERIMENTAL	VALUES ^a					
T/K	x3 ^(s)	x ₁	T/K	x3 ^(s)	<b>x</b> ₁	
307.75	0.0000	0.1665	333.1	0.3000	0.3394	
313.45	0.0000	0.1950	351.6	0.3000	0.5031	
318.15	0.0000	0.2215	359.8	0.3000	0.6042	
323.05	0.0000	0.2528				
330.45	0.0000	0.3055	311.5	1.0000	0.1979	
336.25	0.0000	0.3525	327.1	1.0000	0.2936	
340.65	0.0000	0.3957	340.2	1.0000	0.4002	
348.35	0.0000	0.4744	349.0	1.0000	0.4909	
354.85	0.0000	0.5477	359.2	1.0000	0.6127	
308.7	0.3000	0.1845				
326.0	0.3000	0.2736				
^a x3 ^(s) : i solubilit	nitial mole i y of the sol	fraction of binary ute.	solvent mix	ture; x ₁ : mol	e fraction	
a _{X3} (s); <u>i</u> solubilit	nitial mole f	ute.			e fraction	
a _{X3} (s); <u>i</u> solubilit	nitial mole f	ute.	solvent mix INFORMATION		e fraction	
a _{X3} (s); <u>i</u> solubilit METHOD: APPARJ	y of the sol	AUXILIARY	INFORMATION			
Solubilit METHOD: APPARJ Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule temperature t were rotated the bath temp by 0.1 K ever determined by ature at whic	TUS/PROCEDUR Derature bath were measure of Mixtures of sealed in the sealed in the sea	AUXILIARY and a precision d using a of known concen- nick-walled in a constant a. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 97.8 Smith passe then (2) Gold Compa was u (3) Gold	P PURITY OF M %, Eastern C town, New Yo ed over activ. recrystalliz. Label, 99.9+ my, Milwauke. sed as recei Label, 99.9+	ATERIALS: hemical Company, rk, USA, was ated alumina and ed from toluene. *, Aldrich Chemical e, Wisconsin, USA, ved.	
Solubilit METHOD: APPARJ Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule temperature t were rotated the bath temp by 0.1 K ever determined by ature at whic solute disapp ments were pe	TUS/PROCEDUR Derature bath were measure of Mixtures of sealed in the sealed in the sea	AUXILIARY and a precision d using a of known concen- nick-walled in a constant a. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 97.8 Smith passe then (2) Gold Compa was u (3) Gold	PURITY OF M %, Eastern C town, New Yo d over activ. recrystalliz. Label, 99.9+ my, Milwauke. Sed as recei: Label, 99.9+ my, was used	ATERIALS: hemical Company, rk, USA, was ated alumina and ed from toluene. %, Aldrich Chemical e, Wisconsin, USA, ved. %, Aldrich Chemical	

			T		<u> </u>	
COMPONENTS:			ORIGINAL	MEASUREMENTS:		
(1) Fluorene;	C ₁₃ H ₁₀ ; [86-	73-7]	Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E.			
(2) Cyclohexa	ane; C ₆ H ₁₂ ; [1	10-82-7]				
(3) Pyridine;	C ₅ H ₅ N; [110-	-86-1]			<u>987</u> , <i>32</i> , 233-240.	
			Ind. Chei	B.; McLaughli m. Eng. Funda	n, E. m. <u>1983</u> , 22, 46-51.	
VARIABLES:		<u>, , , , , , , , , , , , , , , , , , , </u>	PREPARED	BY :		
Temperature, Solvent composition		W.E. Acro	ee, Jr.			
EXPERIMENTAL V	ALUES ^a	· · · · · · · · · · · · · · · · · · ·	<b>I</b>		<u> </u>	
T/K	x3 ^(\$)	<i>x</i> 1	T/K	x3 ^(s) .	×1	
310.95	0.0000	0.0537	343.0	0.3000	0.3898	
316.25	0.0000	0.0684	347.1	0.3000	0.4314	
321.75	0.0000	0.0871				
327.35	0.0000	0.1122	311.5	1.0000	0.1979	
331.85	0.0000	0.1384	327.1	1.0000	0.2936	
336.45	0.0000	0.1733	340.2	1.0000	0.4002	
341.45	0.0000	0.2200	349.0	1.0000	0.4909	
346.25	0.0000	0.2787	359.2	1.0000	0.6127	
325.8	0.3000	0.2261				
333.4	0.3000	0.2836				
335.8	0.3000	0.3088				
	nitial mole : y of the sol	fraction of binary ute.	solvent mix	ture; x ₁ : mol	e fraction	
		AUXILIARY	INFORMATIO	4		
METHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND	D PURITY OF M	ATERIALS:	
thermometer.		and a precision	Smith passe	ntown, New Yo ad over activ	ated alumina and	
Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.		<ul> <li>(2) Gold Label, 99.9+ %, Aldrich Chemic Company, Milwaukee, Wisconsin, USA, was used as received.</li> <li>(3) Gold Label, 99.9+ %, Aldrich Chemic Company, was used as received.</li> </ul>				
			ESTIMATED T/K: pred x ₃ (s): ± ( x ₁ : ± 0.0	rigion + 0.1.		
	-		+			

Components :			ORIGINAL MEASUREMENTS:			
(1) Fluorene;	C ₁₃ H ₁₀ ; [86-	73-7]	Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409.			
(2) Benzene;	C6H6; [71-43-	-2]	Coon, J.E.; Troth, M.; McLaughlin, E.			
(3) Thiophene; C ₄ H ₄ S; [110-02-1] VARIABLES:			J. Chem. Eng. Data <u>1987</u> , 32, 233-240. Choi, P.B.; McLaughlin, E. Ind. Chem. Eng. Fundam. <u>1983</u> , 22, 46-51. PREPARED BY: W.E. Acree, Jr.			
						Temperature, Solvent composition
EXPERIMENTAL V	ALUES ⁸					ļ
T/K	x3 ^(s)	<b>x</b> ₁	T/K	x3 ^(s)	<b>x</b> 1	
307.75	0.0000	0.1665	331.9	0.3000	0.3332	
313.45	0.0000	0.1950	339.3	0.3000	0.3959	
318.15	0.0000	0.2215	347.5	0.3000	0.4793	
323.05	0.0000	0.2528	354.0	0.3000	0.5530	
330.45	0.0000	0.3055				
336.25	0.0000	0.3525	303.6	1.0000	0.1844	
340.65	0.0000	0.3957	321.0	1.0000	0.2762	
348.35	0.0000	0.4744	335.5	1.0000	0.3802	
354.85	0.0000	0.5477	350.2	1.0000	0.5146	
		0.1570	357.5	1.0000	0.5954	
303.0	0.3000	0.1578				
310.7 317.4	0.3000	0.1940 0.2316				
	0.3000					
^a x ₃ ^(s) : in solubilit	nitial mole f y of the sol	fraction of binary ute.	solvent mix	ture; x ₁ : mol	e fraction	
		AUXILIARY	INFORMATION	t		
METHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:	
Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.		(2) Gold Compa was u (3) Gold	town, New Yo d over activ recrystalliz Label, 99.9+ my, Milwauke used as recei Label, 99.9+	ated alumina and ed from toluene. %, Aldrich Chemical e, Wisconsin, USA,		
		ESTIMATED T/X: prec x ₃ ^(\$) : ± 0 x ₁ : ± 0.0	ision + 0.1.			

COMPONENTS:			ORIGINAL N	EASUREMENTS:		
(1) Fluorene;	CH: [86-	73-71	Choi, P.H	3.; Williams,	C.P.; Buehring,	
(1) 110000000	-13-10/ (		K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409.			
(2) Cyclohexar	ne; C ₆ H ₁₂ ; [1	10-82-7]			; McLaughlin, E.	
(3) Thiophene;	(3) Thiophene; C ₄ H ₄ S; [110-02-1]		ļ	• –	<u>987</u> , <i>32</i> , 233-240.	
		Choi, P.B.; McLaughlin, E. Ind. Chem. Eng. Fundam. <u>1983</u> , 22, 46-51.				
VARIABLES:	VARIABLES: Temperature, Solvent composition		PREPARED BY:			
Temperature, S			W.E. Acre	e, Jr.		
EXPERIMENTAL VA	LUES ^a	······································	Į	· · · · · · · · · · · · · · · · ·	<u> </u>	
T/K	x3 ⁽⁸⁾	<b>x</b> 1	T/K	x3 ^(s) .	×1	
310.95	0.0000	0.0537	338.7	0.3000	0.3073	
316.25	0.0000	0.0684	345.2	0.3000	0.3824	
321.75	0.0000	0.0871	354.0	0.3000	0.5005	
327.35	0.0000	0.1122				
331.85	0.0000	0.1384	303.6	1.0000	0.1844	
336.45	0.0000	0.1733	321.0	1.0000	0.2762	
341.45	0.0000	0.2200	335.5	1.0000	0.3802	
346.25	0.0000	0.2787	350.2	1.0000	0.5146	
300.5	0.3000	0.0828	357.5	1.0000	0.5954	
308.6	0.3000	0.1108				
316.0	0.3000	0.1429				
322.7	0.3000	0.1792				
331.1	0.3000	0.2378				
a _{X3} (\$): in Bolubility	itial mole f of the sol	fraction of binary ute.	solvent mix	ture; x ₁ : mol	e fraction	
		AUXILIARY	INFORMATION	1		
METHOD: APPARAT	US/PROCEDUR	E	SOURCE AND	D PURITY OF M	ATERIALS:	
Constant tempe	rature bath	and a precision	<ul> <li>(1) 97.8 %, Eastern Chemical Company, Smithtown, New York, USA, was passed over activated alumina and then recrystallized from toluene.</li> <li>(2) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was used as received.</li> </ul>			
	. Mixtures	of known concen-			ated alumina and	
temperature to were rotated a	and placed equilibrat a speed o	in a constant e. Samples were f 0.25 rps while			e, Wisconsin, USA,	
by 0.1 K every determined by ature at which solute disappe	were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.				%, Aldrich Chemical as received.	
			ESTIMATED	ERRORS:		
			T/K; pred	cision ± 0.1.		
			$x_3^{(s)}: \pm 0$ $x_1: \pm 0.0$	0.0001.		

(1) \$1000000	COMPONENTS :			ORIGINAL MEASUREMENTS:		
(1) Fluorene; C ₁₃ H ₁₀ ; [86-73-7]			Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409.			
(2) Thiopher	e; C ₄ H ₄ S; [110	)-02-1]	Coon, J.E.; Troth, M.; McLaughlin, E.			
(3) Pyridine; C ₅ H ₅ N; [110-86-1]				<u>987, 32, 233-240.</u>		
		Choi, P.H Ind. Chen	3.; McLaughli m. Eng. Funda	n, E. <i>m. <u>1983</u>, 22,</i> 46-51.		
VARIABLES: Temperature, Solvent composition			<b>PREPARED BY:</b> W.E. Acree, Jr.			
Temperature, solvent composition						
EXPERIMENTAL	VALUES ^a					
T/K	x3 ^(s)	<b>x</b> 1	T/K	$x_{3}^{(s)}$	<b>x</b> ₁	
303.6	0.0000	0.1844	340.3	0.3000	0.4123	
321.0	0.0000	0.2762	343.0	0.3000	0.4378	
335.5	0.0000	0.3802				
350.2	0.0000	0.5146	311.5	1.0000	0.1979	
357.5	0.0000	0.5954	327.1	1.0000	0.2936	
			340.2	1.0000	0.4002	
308.0	0.3000	0.1913	349.0	1.0000	0.4909	
322.5	0.3000	0.2731	359.2	1.0000	0.6127	
330.3	0.3000	0.3285				
		AUXILIARY	INFORMATION	T		
ETHOD: APPAR	ATUS / PROCEDUR				ATERIALS:	
Constant tem thermometer. Solubilities dynamic meth trations werr glass ampoul temperature were rotated the bath tem by 0.1 K even determined by ature at whit solute disapp	were measure od. Mixtures of a sealed in ti es and placed to equilibrat at a speed or perature was a ry 1200 secon y visually not ch the last to	and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- cace of solid ust two measure-	SOURCE AND (1) 97.8 Smith passe then (2) Gold Compa was u (3) Gold	PURITY OF MA \$, Eastern Cl town, New You d over active recrystallize Label, 99.9+ ny, Milwaukee sed as receive Label, 99.9+	hemical Company, rk, USA, was ated alumina and ed from toluene. %, Aldrich Chemical e, Wisconsin, USA,	

COMPONENTS:			ORIGINAL MEASUREMENTS:		
(1) Fluorene	; C ₁₃ H ₁₀ ; [86-	73-7}	Coon, J.H	5.; Auwaerter	, J.E.; McLaughlin,
(2) 1,2,3,4- C ₁₀ H ₁₂ ; [3	Tetrahydronap 119-64-2]	hthalene;	E. Fluid Phase Equilibr. <u>1989</u> , 44, 305-345.		
<pre>(3) Decahydronaphthalene; C₁₀H₁₈; [91-17-8]</pre>					
VARIABLES:			PREPARED E	3¥:	
Temperature, Solvent composition		W.E. Acree, Jr.			
EXPERIMENTAL	VALUES ^a	wa wa wa wa	<u></u>	<u> </u>	
T/K	*3 ^(s)	× ₁	T/K	x3 ^(s)	× _t
303.6	0.0000	0.1672	357.2	0.5000	0.5568
311.7	0.0000	0.2075	364.2	0.5000	0.6565
322.8	0.0000	0.2695			
325.7	0.0000	0.2861	306.1	1.0000	0.0843
335.7	0.0000	0.3702	321.3	1.0000	0.1491
343.0	0.0000	0.4334	331.6	1.0000	0.2244
356.3	0.0000	0.5728	342.9	1.0000	0.3144
	•••••		353.0	1.0000	0.4445
309.7	0.5000	0.1515	366.2	1.0000	0.6671
327.0	0.5000	0.2540	50012	10000	010071
337.5	0.5000	0.3469			
347.0	0.5000	0.4493			
	<u> </u>	AUXILIARY	INFORMATION		·
ETHOD: APPAR	ATUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:
Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.		Milwa passe	ukee, Wiscon ed over activ	hemical Company, sin, USA, was ated alumina and ed from solution.	
		<ul> <li>(2) 99.6+ %, Aldrich Chemical Company.</li> <li>(3) 99+ %, Aldrich Chemical Company, having an isomer ratio of 60.6 % cis and 39.4 % trans.</li> <li>Components 2 and 3 were stored over molecular sieves to remove trace water.</li> </ul>			
x.			ESTIMATED T/K:  prec $x_3^{(s)}: \pm 0$ $x_1: \pm 0.0$	ision + 0.1.	

NAPHTHALENE SOLUBILITIES IN BINARY SOLVENT MIXTURES

I. <u>Alkane + Alkane (including cycloalkanes)</u>

n-hexane + cyclohexane n-hexane + n-hexadecane cyclohexane + n-hexadecane

II. Alkane + Aromatic Hydrocarbon

```
n-hexane + benzene
n-hexadecane + benzene
cyclohexane + benzene
n-hexane + methylbenzene
cyclohexane + methylbenzene
n-hexane + ethylbenzene
n-hexadecane + ethylbenzene
cyclohexane + ethylbenzene
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III. <u>Alkane + Ester</u>

None

IV. Alkane + Ether

None

V. <u>Alkane + Chloroalkane</u>

n-hexane + tetrachloromethane n-hexadecane + tetrachloromethane cyclohexane + tetrachloromethane

VI. Ether + Chloroalkane

None

VII. Miscellaneous

```
benzene + methylbenzene
benzene + tetrachloromethane
methylbenzene + ethylbenzene
methylbenzene + tetrachloromethane
ethylbenzene + tetrachloromethane
n-hexane + ethanol
n-hexane + 1-butanol
n-hexane + 1-hexanol
n-hexane + 1-octanol
benzene + pyridine
cyclohexane + pyridine
benzene + thiophene
cyclohexane + thiophene
thiophene + pyridine
benzene + ethylbenzene
1,2,3,4-tetrahydronaphthalene + decahydronaphthalene
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NAPHTHALENE SOLUBILITIES (Continued)

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cyclohexane + diiodomethane
trichloromethane + diethyl ether
carbon disulfide + diethyl ether
methanol + water
ethanol + water
1-propanol + water
1-butanol + water
1-pentanol + water
2-methyl-2-propanol + water
2-propanone + water
2-butanone + water
dimethyl sulfoxide + water
N,N-dimethylformamide + water
acetonitrile + water
1,2-ethanediol + water
urea + water
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COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]	J. Chem. Eng. Data <u>1965</u> , 10, 25-29.
(3) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES [®]	
$t = 25.0 ^{\circ}\text{C}$	
x ₂ ^(s) x ₂ ^b	* ₁
0.0000 0.0000	0.1487
0.1553 0.1327	0.1453
0.3996 0.3438	0.1396
0.6013 0.5220	0.1319
0.7986 0.6984	0.1255
1.0000 0.8832	0.1168
^b computed by complier.	
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and a precision refractometer.	(1) Eastman Chemical Company, Rochester, New York, USA, was used as received.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass bottles and allowed to equili- brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. solute concentration to the refractive index of the saturated solution. Attainment of equilibrium was verified by repetitive measurements several days later.	<ul> <li>(2) Spectroquality, Matheson, Coleman and USA, was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %.</li> <li>(3) Spectroquality, Matheson, Coleman and dried over phosphorous pentoxide and distilled to a final purity of 99.8 %.</li> </ul>
	ESTIMATED ERRORS: T/K: ± 0.01. x ₂ ⁽³⁾ : ± 0.0001. x ₁ : precision ± 0.0005.

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]	J. Chem. Eng. Data <u>1965</u> , 10, 25-29.
(3) n-Hexadecane; C ₁₆ H ₃₄ ; [544-76-3]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25.0 °C	
x ₂ ^(s) x ₂ ^b	<b>x</b> 1
0.0000 0.0000	0.2043
0.1573 0.1270	0.1924
0.3964 0.3273	0.1743
0.5882 0.4943	0.1597
0.8511 0.7364	0.1348
1.0000 0.8832	0.1168
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and a precision refractometer.	<ul> <li>(1) Eastman Chemical Company, Rochester, New York, USA, was used as received.</li> </ul>
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass bottles and allowed to equili- brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. solute concentration to the refractive index of the saturated solution. Attainment of equilibrium was verified by repetitive measurements several days later.	<ul> <li>(2) Spectroquality, Matheson, Coleman and Bell, USA, was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %.</li> <li>(3) Practical Grade, Eastman Chemical Company, dried over phosphorous pent- oxide and distilled to a final purity of 99.1 %.</li> </ul>
, · ·	ESTIMATED ERRORS:
<i></i>	T/K: precision ± 0.01. $x_2^{(5)}$ : ± 0.0001. $x_1$ : precision ± 0.0005.

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COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	J. Chem. Eng. Data <u>1965</u> , 10, 25-29.
(3) n-Hexadecane; C ₁₆ H ₃₄ ; [544-76-3]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 25.0 ^{\circ}C$	ļ,
x2 ^(s) x2 ^b	×1
0.0000 0.0000	0.2043
0.1689 0.1362	0.1935
0.4067 0.3341	0.1785
0.4181 0.3437	0.1779
0.5736 0.4772	0.1680
0.8289 0.7011	0.1542
1.0000 0.8513	0.1487
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and a precision refractometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass bottles and allowed to equili- brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. Solute concentration to the refractive index of the saturated solution. Attainment of equilibrium was verified by repetitive measurements several days later.	<ol> <li>Eastman Chemical Company, Rochester, New York, USA, was used as received.</li> <li>Spectroquality, Matheson Coleman and Bell, USA, was dried over phosphorous pentoxide and distilled to a final purity of 99.8 %.</li> <li>Practical Grade, Eastman Chemical Company, dried over phosphorous pent- oxide and distilled to a final purity of 99.1 %.</li> <li>ESTIMATED ERRORS:</li> </ol>
	T/K: precision $\pm$ 0.01. $x_2^{(5)}$ : $\pm$ 0.0001. $x_1$ : precision $\pm$ 0.0005.

	r
COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]	J. Chem. Eng. Data <u>1964</u> , 9, 35-43.
(3) Benzene; C ₆ H ₆ ; [71-43-2]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 25.0 ^{\circ}C$	<u></u>
x3 ^(s) x3 ^b	<i>x</i> ₁
0.0000 0.0000	0.1168
0.0743 0.0645	0.1313
0.2121 0.1784	0.1590
0.4109 0.3276	0.2028
0.5960 0.4530	0.2400
0.8219 0.5964	0.2744
0.9506 0.6745	0.2905
1.0000 0.7054	0.2946
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and a precision refractometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass bottles and allowed to equili- brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. solute concentration to the refractive index of the saturated solution. Attainment of equilibrium was	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) Eastman Chemical Company, Rochester, New York, USA, was used as received.</li> <li>(2) Spectroquality, Matheson, Coleman and Bell, USA, was dried over phosphorous pentoxide and distilled to a final purity of 99.95 %.</li> <li>(3) Spectroquality, Matheson, Coleman and Bell, dried over sodium and distilled to a final purity of 99.95 %.</li> </ul>
verified by repetitive measurements several days later.	ESTIMATED ERRORS: T/K: precision ± 0.01. $x_3^{(5)}$ : ± 0.0001. $x_1$ : precision ± 0.0005.

<u></u>	
COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.
(2) n-Hexadecane; C ₁₆ H ₃₄ ; [544-76-3]	J. Chem. Eng. Data <u>1964</u> , 9, 35-43.
(3) Benzene; C ₆ H ₆ ; [71-43-2]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25.0 °C	
x ₃ ^(s) x ₃ ^b	×1
0.0000 0.0000	0.2043
0.1743 0.1381	0.2075
0.4219 0.3284	0.2217
0.6023 0.4593	0.2375
0.8603 0.6251	0.2734
1.0000 0.7054	0.2946
AUXILI	ARY INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and a precision refractometer.	<ol> <li>Eastman Chemical Company, Rochester New York, USA, was used as received.</li> </ol>
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass bottles and allowed to equili- brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. solute concentratio to the refractive index of the saturated solution. Attainment of equilibrium was verified by repetitive measurements several days later.	Company, dried over phosporous pentoxide and distilled to a final purity of 99.1 %. (3) Spectroquality, Matheson, Coleman and Bell, dried over sodium and distilled to a final purity of 99.95 %.
	ESTIMATED ERRORS: $T/K$ : precision $\pm 0.01$ . $x_3^{(s)}$ : $\pm 0.0001$ . $x_1$ : precision $\pm 0.0005$ .

Heric, E.L.; Posey, C.D. J. Chem. Eng. Data <u>1964</u> , 9, 35-43. PREPARED BY: W.E. Acree, Jr. x ₁ 0.1487 0.1622 0.1935 0.2306 0.2609 0.2818 0.2915 0.2946 olvent mixture; x ₁ : mole le fraction of component 3 in
PREPARED BY:         W.E. Acree, Jr.         x1         0.1487         0.1622         0.1935         0.2306         0.2609         0.2818         0.2915         0.2946
<pre>X.E. Acree, Jr. x1 0.1487 0.1622 0.1935 0.2306 0.2609 0.2818 0.2915 0.2946 olvent mixture; x1; mole</pre>
<pre>X.E. Acree, Jr. x1 0.1487 0.1622 0.1935 0.2306 0.2609 0.2818 0.2915 0.2946 olvent mixture; x1; mole</pre>
x ₁ 0.1487 0.1622 0.1935 0.2306 0.2609 0.2818 0.2915 0.2946 olvent mixture; x ₁ ; mole
0.1487 0.1622 0.1935 0.2306 0.2609 0.2818 0.2915 0.2946 olvent mixture; x,: mole
0.1487 0.1622 0.1935 0.2306 0.2609 0.2818 0.2915 0.2946 olvent mixture; x,: mole
0.1487 0.1622 0.1935 0.2306 0.2609 0.2818 0.2915 0.2946 olvent mixture; x,: mole
0.1935 0.2306 0.2609 0.2818 0.2915 0.2946
0.2306 0.2609 0.2818 0.2915 0.2946 olvent mixture; x,: mole
0.2609 0.2818 0.2915 0.2946
0.2818 0.2915 0.2946 olvent mixture; x.: mole
0.2915 0.2946 olvent mixture; x.: mole
0.2946 olvent mixture; x.: mole
olvent mixture; x,: mole
olvent mixture; $x_i$ ; mole le fraction of component 3 in
NFORMATION
SOURCE AND PURITY OF MATERIALS:
<ol> <li>Eastman Chemical Company, Rochester, New York, USA, was used as received.</li> </ol>
(2) Spectroquality, Matheson, Coleman and Bell, USA, dried over phosphorous pentoxide and distilled to a final purity of 99.8 %.
(3) Spectroquality, Matheson, Coleman and Bell dried over sodium and distilled to a final purity of 99.95 %.
ESTIMATED ERRORS: T/K: precision ± 0.01. $x_3^{(s)}$ : ± 0.0001. $x_1$ : precision ± 0.0005.

Components :		ORIGINAL MEASUREMENTS:				
<pre>(1) Naphthalene; C₁₀H₈; [91-20-3] (2) Cyclohexane; C₆H₁₂; [110-82-7] (3) Benzene; C₆H₆; [71-43-2] VARIABLES:</pre>		Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409.				
		PREPARED BY:				
Temperature	Temperature, Solvent composition		W.E. Acre	W.E. Acree, Jr.		
EXPERIMENTAL	VALUES ^a					
T/K	x3 ^(s)	<b>x</b> 1	T/K	x3 ^(s)	<i>x</i> 1	
300.15	0.0000	0.1597	329.75	0.5000	0.6047	
308.25	0.0000	0.2254	340.75	0.5000	0.7848	
315.15	0.0000	0.3025				
325.45	0.0000	0.4612	299.65	0.7000	0.2844	
333.15	0.0000	0.6073	312.65	0.7000	0.4045	
343.05	0.0000	0.8082	321.55	0.7000	0.5071	
			334.35	0.7000	0.6854	
297.15	0.3000	0.2041	337.95	0.7000	0.7417	
311.85	0.3000	0.3400				
323.55	0.3000	0.4931	310.35	1.0000	0.3964	
326.05	0.3000	0.5308	315.55	1.0000	0.4494	
339.25	0.3000	0.7535	323.45	1.0000	0.5391	
			334.35	1.0000	0.6885	
302.95	0.5000	0.2850	344.15	1.0000	0.8422	
313.25	0.5000	0.3891				
318.65	0.5000	0.4520				
326.65	0.5000	0.5598				
a _{X3} (s); solubil:	initial mole f ity of the sol	fraction of binary ute.	solvent mixt	ure; x ₁ : mol	e fraction	
		AUXILIARY	INFORMATION			
ETHOD: APPAI	RATUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:	
Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.		<ul> <li>(1) 99.2 %, Eastman Kodak Chemical Company, Rochester, New York, USA, was passed over activated alumina and then recrystallized from toluene.</li> <li>(2) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was used as received.</li> <li>(3) Gold Label, 99.9+ %, Aldrich Chemical Company was used as received.</li> </ul>				
			ESTIMATED 1 T/K: prec: x ₃ ^(s) : <u>+</u> 0. x ₁ : <u>+</u> 0.00	$1 \pm 100 \pm 0.1$		

ORIGINAL MEASUREMENTS: COMPONENTS: Heric, E.L.; Posey, C.D. (1) Naphthalene; C₁₀H₈; [91-20-3] (2) n-Hexane; C₆H₁₄; [110-54-3] J. Chem. Eng. Data 1965, 9, 161-165. (3) Methylbenzene; C₇H₈; [108-88-3] PREPARED BY: VARIABLES: T/K = 298, Solvent composition W.E. Acree, Jr. EXPERIMENTAL VALUES^a t = 25.0 °C x,^(s) x3b x₁ 0.0000 0.0000 0.1168 0.1807 0.1617 0.2156 0.2018 0.4076 0.3253 0.2386 0.5934 0.4518 0.7910 0.5789 0.2681 1.0000 0.7080 0.2920 ^a  $x_{\tau}^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_{\tau}$ : mole fraction solubility of the solute;  $x_3$ : mole fraction of component 3 in the ternary solution. ^b computed by compiler. AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE SOURCE AND PURITY OF MATERIALS: Constant temperature bath, thermometer, (1) Eastman Chemical Company, Rochester, and a precision refractometer. New York, USA, was used as received. (2) Spectroquality, Matheson, Coleman and Bell, USA, was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass bottles and allowed to equili-brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were (3) ACS Grade, Matheson, Coleman and Bell, was dried over phosphorous pentoxide and distilled to a final purity of measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. solute concentration to the refractive index of the saturated solution. Attainment of equilibrium was 99.99 %. verified by repetitive measurements several days later. ESTIMATED ERRORS: T/K: precision  $\pm$  0.01. x₃^(s):  $\pm$  0.0001. x₁: precision  $\pm$  0.0005.

Components:		ORIGINAL MEASUREMENTS:		
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		Heric, E.L.; Posey, C.D.		
(2) n-Hexadecane; C ₁₆ H ₃₄ ; [544-76-3]		J. Chem. Eng. Data <u>1965</u> , 9, 161-165.		
(3) Methylbenzene,	; C ₇ H ₈ ; [108-88-3]			
VARIABLES:		PREPARED BY:		
T/K = 298, Solvent composition		W.E. Acree, Jr.		
EXPERIMENTAL VALUE: t = 25.0 °C	Sa	Į		
x3 ^(s)	x3 ^b	<b>x</b> 1		
0.0000	0.0000	0.2043		
0.1592	0.1260	0.2087		
0.3968	0.3095	0.2199		
0.5890	0.4505	0.2351		
0.8399	0.6153	0.2674		
1.0000	0.7080	0.2920		
	AUXILIARY	INFORMATION		
METHOD: APPARATUS/F	PROCEDURE	SOURCE AND PURITY OF MATERIALS:		
Constant temperatu and a precision re	are bath, thermometer, afractometer.	<ol> <li>Eastman Chemical Company, Rochester, New York, USA, was used as received.</li> </ol>		
weight. Excess sol in glass bottles a brate with gentle days at constant t indices of saturat measured and solub extrapolation of a refractive index v to the refractive	tures were prepared by ute and solvent placed and allowed to equili- agitation for several emperature. Refractive ed solutions were bilities obtained by a calibration plot of rs. solute concentration index of the saturated ent of equilibrium was	<ul> <li>(2) Practical Grade, Eastman Chemical Comapny, was dried over phosphorous pentoxide and distilled to a final purity of 99.1 %.</li> <li>(3) ACS Grade, Matheson, Coleman and Bell, was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %.</li> </ul>		
verified by repeti several days later	tive measurements	ESTIMATED ERRORS: $T/K: \text{ precision } \pm 0.01.$ $x_3^{(s)}: \pm 0.0001.$ $x_1: \text{ precision } \pm 0.0005.$		

COMPONENTS: (1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]			
(1) Naphthalene: C. H.; [91-20-3]	ORIGINAL MEASUREMENTS:		
	Heric, E.L.; Posey, C.D.		
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	J. Chem. Eng. Data <u>1965</u> , 9, 161-165.		
(3) Methylbenzene; C ₇ H ₈ ; [108-88-3]			
VARIABLES:	PREPARED BY:		
T/K = 298, Solvent composition	W.E. Acree, Jr.		
EXPERIMENTAL VALUES ^a t = 25.0 °C	Į		
x ₃ ^(s) x ₃ ^b	<b>x</b> 1		
0.0000 0.0000	0.1487		
0.2071 0.1668	0.1948		
0.3733 0.2895	0.2246		
0.5952 0.4426	0.2564		
0.7928 0.5736	0.2765		
1.0000 0.7080	0.2920		
AUXILIARY	INFORMATION		
AUXILIARY METHOD: APPARATUS/PROCEDURE	INFORMATION SOURCE AND PURITY OF MATERIALS:		
	······		
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer,	SOURCE AND PURITY OF MATERIALS: (1) Eastman Chemical Company, Rochester,		

r	1		
COMPONENTS :	ORIGINAL MEASUREMENTS:		
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.		
(2) n-Hexane; $C_6H_{14}$ ; [110-54-3]	J. Chem. Eng. Data <u>1965</u> , 9, 161-165.		
(3) Ethylbenzene; C ₈ H ₁₀ ; [100-41-4]			
VARIABLES:	PREPARED BY:		
T/K = 298, Solvent composition	W.E. Acree, Jr.		
EXPERIMENTAL VALUES ⁸ $t = 25.0 ^{\circ}C$	· · · · · · · · · · · · · · · · · · ·		
x ₃ ^(s) x ₃ ^b	<b>*</b> 1		
0.0000 0.0000	0.1168		
0.1663 0.1409	0.1526		
0.4185 0.3322	0.2063		
0.6053 0.4586	0.2423		
0.8445 0.6118	0.2756		
1.0000 0.7074	0.2926		
AUXILIARY	INFORMATION		
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:		
Constant temperature bath, thermometer, and a precision refractometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass bottles and allowed to equili- brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. solute concentration to the refractive index of the saturated solution. Attainment of equilibrium was verified by repetitive measurements several days later.	<ol> <li>Eastman Chemical Company, Rochester, New York, USA, was used as received.</li> <li>Spectroquality, Matheson, Coleman and Bell, USA, was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %.</li> <li>ACS Grade, Matheson, Coleman and Bell, was dried over calcium hydride and distilled to a final purity of 99.9 %.</li> </ol>		
	ESTIMATED ERRORS: $T/K$ : precision $\pm$ 0.01. $x_3^{(s)}$ : $\pm$ 0.0001. $x_1$ : precision $\pm$ 0.0005.		

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COMPONENTS: (1) Naphthalene; C		ORIGINAL MEASUREMENTS:		
	v · (91-20-31	Heric, E.L.; Posey, C.D.		
(2) n-Hexadecane; $C_{10}H_{34}$ ; [544-76-3]		J. Chem. Eng. Data <u>1965</u> , 9, 161-165.		
(2) h-nexadecane; C ₁₆ , C ₁₆ , (3) Ethylbenzene; C ₈ H ₁₀ ; [100-41-4]		<i>b</i> . <i>Chem. Dry. Ducu</i> <u>2202</u> , <i>3</i> , 101 100.		
() Ecnyibenzeney	38.10, [100 41-4]			
VARIABLES:		PREPARED BY:		
T/K = 298, Solvent composition		W.E. Acree, Jr.		
EXPERIMENTAL VALUES	,			
$x_{3}^{(s)}$	x3 ^b	v.		
x3 0.0000	*3 0.0000	× ₁ 0.2043		
0.1874	0.1478	0.2113		
0.4249	0.3287	0.2264		
0.6190	0.4680	0.2240		
0.8514	0.6196			
	0.7074	0.2722		
1.0000	0.7074	0.2926		
	AUXILIARY	INFORMATION		
METHOD: APPARATUS/P		INFORMATION SOURCE AND PURITY OF MATERIALS:		
METHOD: APPARATUS/PS Constant temperatus and a precision rei	COCEDURE			
Constant temperatur and a precision rei Binary solvent mixt weight. Excess solu in glass bottles ar brate with gentle a days at constant te indices of saturate measured and solubi extrapolation of a refractive index ve to the refractive a	The bath, thermometer, fractometer. tures were prepared by the and solvent placed and allowed to equili- gitation for several imperature. Refractive and solutions were lities obtained by calibration plot of s. solute concentration and of the saturated ont of equilibrium was live measurements	SOURCE AND PURITY OF MATERIALS: (1) Eastman Chemical Company, Rochester,		

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	J. Chem. Eng. Data <u>1965</u> , 9, 161-165.
(3) Ethylbenzene; C ₈ H ₁₀ ; [100-41-4]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ⁸ t = 25.0 °C	-
x ₃ ^(s) x ₃ ^b	×1
0.0000 0.0000	0.1487
0.1574 0.1284	0.1840
0.4135 0.3186	0.2295
0.6006 0.4484	0.2534
0.7930 0.5744	0.2757
1.0000 0.7074	0.2926
AUXILIARY INFO	RMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and a precision refractometer.	<ol> <li>Eastman Chemical Company, Rochester, New York, USA, was used as received.</li> </ol>
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass bottles and allowed to equili- brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. solute concentration to the refractive index of the saturated solution. Attainment of equilibrium was verified by repetitive measurements several days later.	<ul> <li>(2) Spectroquality, Matheson, Coleman and Bell, USA, was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %.</li> <li>(3) ACS Grade, Matheson, Coleman and Bell, was dried over calcium hydride and distilled to a final purity of 99.9 %.</li> </ul>
``````````````````````````````````````	ESTIMATED ERRORS: T/K: precision ± 0.01. $x_3^{(5)}$ : ± 0.0001. $x_1$ : precision ± 0.0005.

COMPONENTS :		ORIGINAL MEASUREMENTS:		
(1) Naphthalene;	C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.		
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]		J. Chem. Eng. Data <u>1965</u> , 10, 25-29.		
(3) Tetrachlorom [56-23-5]	ethane; CCl ₄ ;			
VARIABLES: T/K = 298, Solvent composition		PREPARED BY:		
		W.E. Acree, Jr.		
EXPERIMENTAL VALU t = 25.0 °C	ES ^a	•		
x3 ^(s)	x ₃ ^b	×1		
0.0000	0.0000	0.1168		
0.0221	0.0195	0.1191		
0.2029	0.1742	0.1415		
0.4315	0.3563	0.1742		
0.5971	0.4790	0.1978		
0.7997	0.6159	0.2298		
0.9017	0.6811	0.2447		
1.0000	0.7409	0.2591		
	AUXILIARY	INFORMATION		
METHOD: APPARATUS	/PROCEDURE	SOURCE AND PURITY OF MATERIALS:		
	ture bath, thermometer, refractometer.	<ul> <li>(1) Eastman Chemical Company, Rochester, New York, USA, was used as received.</li> </ul>		
and a precision refractometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass bottles and allowed to equili- brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. solute concentration to the refractive index of the saturated solution. Attainment of equilibrium was verified by repetitive measurements several days later.		<ul> <li>(2) Spectroquality, Matheson, Coleman and Bell, USA, was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %.</li> <li>(3) Spectroquality, Matheson, Coleman and Bell dried over phosphorous pentoxide and distilled to a final purity of 99.99 %.</li> </ul>		
		ESTIMATED ERRORS: $T/K: \pm 0.01.$ $x_3^{(2)}: \pm 0.0001.$ $x_1:$ precision $\pm 0.0005.$		

Conponents:	
	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₅ ; [91-20-3]	Heric, E.L.; Posey, C.D.
(2) n-Hexadecane; C ₁₆ H ₃₄ ; [544-76-3]	J. Chem. Eng. Data <u>1965</u> , 10, 25-29.
<pre>(3) Tetrachloromethane; CCl₄; [56-23-5]</pre>	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25.0 °C	
x3 ^(s) x3 ^b	<b>x</b> 1
0.0000 0.0000	0.2043
0.1517 0.1213	0.2003
0.4057 0.3242	0.2009
0.5820 0.4622	0.2058
0.8410 0.6491	0.2282
1.0000 0.7409	0.2591
······································	
λ	UXILIARY INFORMATION
	SOURCE AND FURITY OF MATERIALS:
	SOURCE AND PURITY OF MATERIALS:
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermome	SOURCE AND PURITY OF MATERIALS:         ter,       (1) Eastman Chemical Company, Rochester, New York, USA, was used as received.         ed by       (2) Practical Grade, Eastman Chemical Company dried over phosphorous pentoxide and distilled to a final purity of 99.1 %.         ctive       (3) Spectroquality, Matheson, Coleman and Bell dried over phosphorous pentoxide and distilled to a final purity of 99.99 %.

COMPONENTS :	ORIGINAL MEASUREMENTS:	
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.	
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	J. Chem. Eng. Data <u>1965</u> , 10, 25-29.	
<pre>(3) Tetrachloromethane; CCl₄; [56-23-5]</pre>		
VARIABLES:	<b>PREPARED BY:</b> W.E. Acree, Jr.	
T/K = 298, Solvent composition		
EXPERIMENTAL VALUES ^a t = 25.0 °C		
x3 ^(s) x3 ^p	x1	
0.0000 0.0000	0.1487	
0.1939 0.1213	0.1723	
0.3971 0.3242	0.1955	
0.5883 0.4622	0.2169	
0.7630 0.6491	0,2356	
1.0000 0.7409	0.2591	
the ternary solution. ^b computed by compiler.		
-		
^b computed by compiler.	INFORMATION	
^b computed by compiler.	INFORMATION SOURCE AND PURITY OF MATERIALS:	
<pre>b computed by compiler. AUXILIARY</pre>	T	

Components:			ORIGINAL MEASUREMENTS:		
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		Heric, E.L.; Yeh, KN.			
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]		J. Chem. Eng. Data <u>1970</u> , 15, 13-17.			
(3) Tetrachl [56-23-5	oromethane; ( ]	CC1 ₄ ;			
VARIABLES: Temperature, Solvent composition		PREPARED E	SY :		
		W.E. Acre	e, Jr.		
XPERIMENTAL V	VALUES ^a				
T/K	x3 ^(s)	<b>*</b> 1	T/K	x3 ^(s)	<b>*</b> 1
292.95	0.0000	0.1345	288.16	0.3911	0.1317
301.83	0.0000	0.1720	292.88	0.3911	0.1587
306.71	0.0000	0.2122	304.09	0.3911	0.2420
318.28	0.0000	0.3463	315.68	0.3911	0.3658
326.75	0.0000	0.4849	321.00	0.3911	0.4384
334.01	0.0000	0.6244	329.55	0.3911	0.5719
340.06	0.0000	0.7455	333.62	0.3911	0.6420
346.75	0.000	0.8762	343.16	0.3911	0.8137
292.22	0.1780	0.1318	287.86	0.5805	0.1439
306.07	0.1780	0.2318	302.38	0.5805	0.2500
313.35	0.1780	0.3093	309.63	0.5805	0.3182
318.80	0.1780	0.3797	319.79	0.5805	0.4417
325.86	0.1780	0.4899	327.41	0.5805	0.5505
332.96	0.1780	0.6154	337.29	0.5805	0.7125
339.41	0.1780	0.7386	342.95	0.5805	0.8122
342.94	0.1780	0.8057			
		(Continue	d on next pag	ge)	
		AUXILIARY	INFORMATION		<u></u>
THOD: APPARA	TUS/PROCEDURI	5	SOURCE AND PURITY OF MATERIALS:		
Constant temp thermometer.	erature bath	and a precision	<ul> <li>(1) Reagent Grade, Baker Chemical Company, USA, was used as received.</li> </ul>		
Solubilities			(2) Reagent Grade, Baker Chemical Company.		
dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.50 rps while the bath temperature was slowly increased. Solubility determined by visually noting the temperature at which the last trace of solid solute disappeared. At least two measurements were performed for each composition.		(3) Reagent Grade, Baker Chemical Company.			
		Components 2 and 3 were stored over phosphorous pentoxide and distilled shortly before use.			
			ESTIMATED F	RRORS :	
			$T/K: \text{ precises} x_3^{(s)}: \pm 0.$ $x_1: \pm 0.00$	sion <u>+</u> 0.03. 0001. 01.	

COMPONENTS: (1) Naphthalene; C ₁₀ H ₈ ; [91-20-3] (2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]		ORIGINAL MEASUREMENTS:
		Heric, E.L.; Yeh, KN.
		J. Chem. Eng. Data <u>1970</u> , 15, 13-17.
<pre>(3) Tetrachlorom   [56-23-5]</pre>	ethane; CCl ₄ ;	
VARIABLES: Temperature and Solvent Composition		PREPARED BY:
		W.E. Acree, Jr.
EXPERIMENTAL VALU	ES ^a (Continued)	
T/K	x3 ^(s)	<b>x</b> 1
285.24	0.7788	0.1530
297.22	0.7788	0.2293
308.67	0.7788	0.3296
318.24	0.7788	0.4384
327.44	0.7788	0.5635
335.65	0.7788	0.6928
342.20	0.7788	0.8022
286.64	1.0000	0.1812
290.51	1.0000	0.2039
300.17	1.0000	0.2738
316.25	1.0000	0.4329
323.84	1.0000	0.5269
328.58	1.0000	0.5915
334.92	1.0000	0.6880
342.33	1.0000	0.8065

^a  $x_3^{(s)}$ ; initial mole fraction of the binary solvent mixture;  $x_1$ : mole fraction solubility of the solute.

COMPONENTS:		ORIGINAL MEASUREMENTS:		
(1) Naphthalene; $C_{10}H_{8}$ ; [91-20-3] (2) Methylbenzene; $C_{7}H_{8}$ ; [108-88-3] (3) Benzene; $C_{6}H_{6}$ ; [71-43-2] VARIABLES: T/K = 298, Solvent composition EXPERIMENTAL VALUES ⁶ $t = 25.0 \ ^{\circ}C$ $x_{3}^{(s)}$ $x_{3}^{b}$ 0.0000 0.0000 0.3497 0.0645 0.4014 0.1784 0.6113 0.3276 0.7759 0.4530 0.9223 0.5964 1.0000 0.7054 ^a $x_{3}^{(s)}$ ; initial mole fraction of binary	Heric, E.L.; Posey, C.D.			
(2) Methylbenzen	e; C ₇ H ₈ ; [108-88-3]	J. Chem. Eng. Data <u>1964</u> , 9, 35-43.		
(3) Benzene; C ₆ H	₆ ; [71-43-2]			
VARIABLES:		PREPARED BY:		
<i>T</i> /K = 298, Solve	nt composition	W.E. Acree, Jr.		
(1) Naphthalene; $C_{10}H_{6}$ ; $[91-20-3]$ Heric, E.L.; Posey, C.D.         (2) Methylbenzene; $C_{7}H_{6}$ ; $[108-88-3]$ J. Chem. Eng. Data 1964, 9, 35-43.         (3) Benzene; $C_{6}H_{6}$ ; $[71-43-2]$ PREPARED BY:         VARIABLES:       PREPARED BY: $T/K = 298$ , Solvent composition       W.E. Acree, Jr.         EXPERIMENTAL VALUES ⁶ x ₁ c = 25.0 °C $x_3^{(*)}$ $x_3^b$ x ₁ 0.0000         0.0000       0.2920         0.3497       0.0645         0.4014       0.1784         0.2908         0.6113       0.3276         0.2931         0.9223       0.5964         0.2940         1.0000       0.7054 $x_3^{(*)}$ ; initial mole fraction of binary solvent mixture; x ₁ ; mole fraction solubility of the solute; x ₃ ; mole fraction of component 3 in the ternary solution.				
_	x3 ^b	<b>x</b> 1		
•	•	0.2920		
0.3497	0.0645	0.2921		
0.4014	0.1784	0.2908		
0.6113	0.3276	0.2913		
0.7759	0,4530	0.2931		
0.9223	Lbenzene; C _{7H3} ; [108-88-3]       J. Chem. Eng. Data 1964, 9         he; C ₆ H ₆ ; [71-43-2]       PREPARED EY:         Solvent composition       W.E. Acree, Jr.         L VALUES ⁸ C       Yampo Solvent Solvent Composition         L VALUES ⁸ C       X ₃ ^b X ₃ ^b X ₁ 0.0000       0.2920         0.0645       0.2921         0.1784       0.2908         0.3276       0.2913         0.4530       0.2940         0.7054       0.2946         : initial mole fraction of binary solvent mixture; x ₁ : mole         on solubility of the solute; x ₃ : mole fraction of component 3 in rnary solution.         ited by compiler.         XUILLIARY INFORMATION         NRATUS/PROCEDURE         mperature bath, thermometer, sion refractometer.         rent mixtures were prepared by ess solute and solvent placed titles and allowed to equiligentia adjuticin of reveral satuat temperature. Refractive saturated solutions were ad solutions were dation for several solutions were ad solutions were dation for several solutions were dation solver sold         (3) Spectroquality, Matheson, Coll purity of 9.99 %.	0.2940		
1,0000	0.7054	0.2946		
	AUXILIARY	INFORMATION		
ETHOD: APPARATUS/	PROCEDURE	SOURCE AND PURITY OF MATERIALS:		
and a precision r	efractometer.	New York, USA, was used as received.		
weight. Excess so in glass bottles brate with gentle days at constant measured and solul extrapolation of a refractive index to the refractive solution. Attains verified by repet:	lute and solvent placed and allowed to equili- agitation for several temperature. Refractive ted solutions were bilities obtained by a calibration plot of vs. solute concentration index of the saturated ment of equilibrium was itive measurements	<ul> <li>USA, was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %.</li> <li>(3) Spectroquality, Matheson, Coleman and Bell, was dried over sodium and distilled to a final purity of</li> </ul>		
		ESTIMATED ERRORS:		
		$T/K$ : precision $\pm$ 0.01. $x_3^{(s)}$ : $\pm$ 0.0001. $x_1$ : precision $\pm$ 0.0005.		
·····				

COMPONENTS :		ORIGINAL MEASUREMENTS:		
<ul> <li>(1) Naphthalene; C₁₀H₈; [91-20-3]</li> <li>(2) Tetrachloromethane; CCl₄; [56-23-5]</li> </ul>		Heric, E.L.; Posey, C.D.		
		J. Chem. Eng. Data <u>1964</u> , 9, 35-43.		
(3) Benzene; C ₆ H ₆ ; [	71-43-2]			
VARIABLES:		PREPARED BY: W.E. Acree, Jr.		
T/K = 298, Solvent	composition			
EXPERIMENTAL VALUES ^a				
$t = 25.0 ^{\circ}C$	b			
x3 ^(s)	x3 ^p	×1		
0.0000	0.0000	0.2591		
0.2880	0.2102	0.2702		
0.3866	0.2813	0.2723		
0.6634	0.4758	0.2828		
0.8604	0.6105 0.7054	0.2904 0.2946		
	AUXILIARY	INFORMATION		
METHOD: APPARATUS/PRO	·······	INFORMATION SOURCE AND PURITY OF MATERIALS:		
METHOD: APPARATUS/PR Constant temperature and a precision refi	OCEDURE e bath, thermometer,	l		
Constant temperature and a precision ref: Binary solvent mixte weight. Excess solut in glass bottles and brate with gentle as days at constant ter indices of saturated measured and solubil extrapolation of a constant ter refractive index vs.	OCEDURE e bath, thermometer, ractometer. ures were prepared by te and solvent placed d allowed to equili- gitation for several mperature. Refractive d solutions were lities obtained by calibration plot of . solute concentration ndex of the saturated nt of equilibrium was	SOURCE AND PURITY OF MATERIALS: (1) Eastman Chemical Company, Rochester,		

COMPONENTS :	ORIGINAL MEASUREMENTS:		
(1) Naphthalene; $C_{10}H_8$ ; [91-20-3] (2) Ethylbenzene; $C_8H_{10}$ ; [100-41-4] (3) Methylbenzene; $C_7H_8$ ; [108-88-3] VARIABLES: T/K = 298, Solvent composition EXPERIMENTAL VALUES ⁸ $t = 25.0 \ ^{\circ}C$ $x_3^{(s)}$ $x_3^{b}$ 0.0000 0.0000 0.1591 0.1126 0.4117 0.2915 0.6135 0.4346 0.8332 0.5898 1.0000 0.7080 ^a $x_3^{(s)}$ ; initial mole fraction of binar fraction solubility of the solute; $x_3$ ; the ternary solution. ^b computed by compiler. AUXILIAR	Heric, E.L.; Posey, C.D.		
	J. Chem. Eng. Data <u>1965</u> , 9, 161-165.		
(3) Methylbenzene; C ₇ H ₈ ; [108-88-3]			
VARIABLES:	PREPARED BY:		
T/K = 298, Solvent composition	W.E. Acree, Jr.		
	Į		
x ₁ ^(s) x ₃ ^b	x,		
	0.2926		
0.1591 0.1126	0.2923		
0.4117 0.2915	0.2919		
0.6135 0.4346	0.2916		
0.8332 0.5898	0.2921		
	0.2920		
	012720		
AUXILIARY	INFORMATION		
NETHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:		
	<ol> <li>Eastman Chemical Company, Rochester, New York, USA, was used as received.</li> </ol>		
weight. Excess solute and solvent placed in glass bottles and allowed to equili- brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were	<ul> <li>(2) Spectroquality, Matheson, Coleman and Bell, USA, was dried over calcium hydride and distilled to a final purity of 99.9 %.</li> <li>(3) ACS Grade, Matheson, Coleman and Bell, dried over phosphorous pentoxide and distilled to a final purity of</li> </ul>		
extrapolation of a calibration plot of refractive index vs. solute concentration to the refractive index of the saturated solution. Attainment of equilibrium was verified by repetitive measurements	99.99 <b>%</b> .		

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20	-3] Heric, E.L.; Posey, C.D.
<pre>(2) Tetrachloromethane; CCl₄; [56-23-5]</pre>	J. Chem. Eng. Data <u>1965</u> , 9, 161-165.
(3) Methylbenzene; C ₇ H ₈ ; [108-	88-3]
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	n W.E. Acree, Jr.
EIPERIMENTAL VALUES ^a t = 25.0 °C	
$x_3^{(s)}$ $x_3^{b}$	<b>x</b> 1
0.0000 0.0000	0.2591
0.2057 0.1509	0.2665
0.4129 0.2995	0.2747
0.5899 0.4247	0.2800
0.7942 0.5665	0.2867
1.0000 0.7080	0.2920
	AUXILIARY INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
METHOD: APPARATUS/PROCEDURE Constant temperature bath, the and a precision refractometer. Binary solvent mixtures were p weight. Excess solute and solv in glass bottles and allowed brate with gentle agitation ff days at constant temperature. indices of saturated solutions measured and solubilities obt extrapolation of a calibration refractive index vs. solute co to the refractive index of the solution. Attainment of equil verified by repetitive measure several days later.	Source and Purity of Materials: (1) Eastman Chemical Company, Rochester, New York, USA, was used as received. (2) Spectroquality, Matheson, Coleman and Bell, USA, was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %. (3) ACS Grade, Matheson, Coleman and Bell was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %. (3) Spectroquality, Matheson, Coleman and Bell was dried over phosphorous pentoxide and distilled to a final purity of 99.99 %.

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COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.
<pre>(2) Tetrachloromethane; CCl₄; [56-23-5]</pre>	J. Chem. Eng. Data <u>1965</u> , 9, 161-165.
(3) Ethylbenzene; C ₈ H ₁₀ ; [100-41-4]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent composition	W.E. Acree, Jr.
SIPERIMENTAL VALUES ⁸	
$t = 25.0  ^{\circ}C$ $x_{x}^{(s)}$ $x_{x}^{b}$	~
5	× ₁ 0.2591
0.0000 0.0000	0.2635
0.1777 0.1309 0.4095 0.2981	0.2720
0.6328 0.4558	0.2797
0.8408 0.5992	0.2873
1.0000 0.7074	0.2926
	·
1104	LIARY INFORMATION
ETHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer and a precision refractometer.	(1) Eastman Chemical Company, Rochester, New York, USA, was used as received.
Binary solvent mixtures were prepared b weight. Excess solute and solvent place in glass bottles and allowed to equili- brate with gentle agitation for severa days at constant temperature. Refracti Indices of saturated solutions were	<ul> <li>Bell, USA, was dried over phosphorous</li> <li>pentoxide and distilled to a final</li> <li>purity of 99.99 %.</li> </ul>
measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. solute concentrat: to the refractive index of the saturate solution. Attainment of equilibrium way rerified by repetitive measurements several days later.	was dried over calcium hydride and distilled to a final purity of 99.9 % ion ed
	ESTINATED ERRORS:
	$T/K: precision \pm 0.01.$ $x_3^{(6)}: \pm 0.0001.$ $x_1: precision \pm 0.0005.$
	1

COMPONENTS: (1) Naphthalene; C ₁₀ H ₈ ; [91-20-3] (2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]			ORIGINAL MEASUREMENTS: Dománska, U.			
			<pre>(3) Ethanol; C₂H₆O; [64-17-5] VARIABLES: Temperature and Solvent Composition</pre>		(numerical values obtained through personal correspondence with author.) PREPARED BY:	
W.E. Acree, Jr.						
EXPERIMENTAL V	ALUES ^a				<u> </u>	
T/K	x2 ^(s)	<i>*</i> 1	<i>т/</i> к	x2 ^(s)	<i>*</i> 1	
290.50	0.0000	0.024	279.70	0.5000	0.0435	
294.30	0.0000	0.028	283.70	0.5000	0.0508	
298.15	0.0000	0.032	287.60	0.5000	0.0598	
302.20	0.0000	0.037	291.50	0.5000	0.0702	
305.65	0.0000	0.042	294.80	0.5000	0.0806	
308.80	0.0000	0.048	298.55	0.5000	0.0937	
322.20	0.0000	0.087	302.35	0.5000	0.110	
			307.15	0.5000	0.134	
290.10	0.1769	0.0415	312.95	0.5000	0.173	
292.90	0.1769	0.0465	316.25	0.5000	0.209	
296.60	0.1769	0.0533	319.65	0.5000	0.250	
300.20	0.1769	0.0617	323.45	0.5000	0.302	
304.50	0.1769	0.0741	327.25	0.5000	0.376	
307.55	0.1769	0.0878	331.70	0.5000	0.469	
316.65	0.1769	0.130				
320.65	0.1769	0.159				
		(Continue	d next page)			
		AUXILIARY	INFORMATION	· · · · · · · · · · · · · · · · · · ·		
METHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND PURITY OF MATERIALS:			
thermometer.		and a precision	(1) Purity not specified, P.O.Ch., Gliwice, Poland, was vacuum sublimed to a melting temperature of 80.25 °C.			
Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant			<ul> <li>(2) Initial purity not specified, Reachim Poland, was dried over phosphorous pentoxide and fractionally distilled to a final purity of 99.9+ %.</li> <li>(3) Initial purity not specified, Z.P. Spiryt. Lodz, was fractionally distilled to final purity of 99.9+ %.</li> </ul>			
temperature to equilibrate. Bath tempera- ture was slowly increased by 2 K per hour. Solubility determined by visually noting the temperature at which the last trace of solid solute disappeared.						
			ESTIMATED	ERRORS :		
			x ₁ ^(s) : ± 0	ision <u>+</u> 0.1. .0002 (compi significant :	ler). figs. (compiler).	

Components:		ORIGINAL MEASUREMENTS:			
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		Dománska, U.	Dománska, U.		
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3] (3) Ethanol; C ₂ H ₆ O; [64-17-5]			Polish J. Chem. <u>1981</u> , 55, 1715-1720. (numerical values obtained through personal correspondence with author.)		
VARIABLES:		PREPARED BY:			
Temperature and So	lvent Composition	W.E. Acree, Jr.			
EXPERIMENTAL VALUES	a (Continued)				
T/K	x2 ^(s)	<i>x</i> 1			
280.75	0.6998	0.0534			
284.80	0.6998	0.0629			
294.35	0.6998	0.0924			
299.15	0.6998	0.113			
304.70	0.6998	0.136			
308.35	0.6998	0.166			
312.35	0.6998	0.201			
317.05	0.6998	0.249			
320.25	0.6998	0.293			
323.40	0.6998	0.342			
326.85	0.6998	0.402			
334.00	0.6998	0.542			
295.90	0.8584	0.107			
300.30	0.8584	0.128			
305.20	0.8584	0.158			
310.60	0.8584	0.200			
319.05	0.8584	0.294			
282.05	1.0000	0.063			
286.35	1.0000	0.072			
289.55	1.0000	0.084			
289.85	1.0000	0.082			
292.45	1.0000	0.094			
295.45	1.0000	0.104			
298.65	1.0000	0.119			
302.45	1.0000	0.138			
306.75	1.0000	0.163			
310.25	1.0000	0.189			
317.05	1.0000	0.243			
319.25	1.0000	0.277			
319.65	1.0000	0.276			
324.15	1.0000	0.340			

COVERNING -		······································	OPTOTNAL M	EASUREMENTS:	
COMPONENTS:	0 11 - 10	1-20-31	Dománska, U.		
(1) Naphthale					
<pre>(2) n-Hexane; C₆H₁₄; [110-54-3] (3) 1-Butanol; C₆H₁₀O; [71-36-3] VARIABLES:</pre>			Polish J. Chem. <u>1981</u> , 55, 1715-1720. (numerical values obtained through personal correspondence with author.)		
			PREPARED B	Y:	
Temperature a	Temperature and Solvent Composition			e, Jr.	
EXPERIMENTAL V	ALUES ^a			<u> </u>	·····
T/K	x2 ^(s)	*1	T/K	x2 ^(s)	×1
284.05	0.0000	0.038	300.15	0.1956	0.0876
289.05	0.0000	0.045	303.75	0.1956	0.101
291.95	0.0000	0.050	308.45	0.1956	0.121
295.35	0.0000	0.058	311.20	0.1956	0.137
298.25	0.0000	0.066	316.35	0.1956	0.172
303.25	0.0000	0.077	318.95	0.1956	0.194
307.95	0.0000	0.091	323.40	0.1956	0.243
313.45	0.0000	0.113	338.25	0.1956	0.546
317.35	0.0000	0.140			
319.75	0.0000	0.156	282.55	0.4933	0.0556
323.55	0.0000	0.176	286.35	0.4933	0.0643
330.45	0.0000	0.228	291.55	0.4933	0.0786
			296.05	0.4933	0.0950
285.75	0.1956	0.0505	299.80	0.4933	0.110
291.15	0.1956	0.0619	304.35	0.4933	0.132
295.95	0.1956	0.0745	304.25	0.4933	0.162
		(Continue	d next page)		
		AUXILIARY	INFORMATION		
METHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:
thermometer.		and a precision	<ul> <li>(1) Purity not specified, P.O.Ch., Gliwice, Poland, was vacuum sublimed to a melting temperature of 80.25 °C.</li> </ul>		
Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Bath tempera- ture was slowly increased by 2 K per hour. Solubility determined by visually noting the temperature at which the last trace of solid solute disappeared.			<ul> <li>(2) Initial purity not specified, Reachin Poland, was dried over phosphorous pentoxide and fractionally distilled to a final purity of 99.9+ %.</li> <li>(3) Initial purity not specified, P.O.Ch., was dried over sodium carbo- nate and fractionally distilled to a final purity of 99.9+ %.</li> </ul>		
			$x_{3}^{(s)}: \pm 0$	ision ± 0.1. .0002 (compi significant	ler). figs. (compiler).

OMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Naphthalene;	C ₁₀ H ₈ ; [91-20-3]	Dománska, U.
(2) n-Hexane; C ₆	H ₁₄ ; [110-54-3]	Polish J. Chem. <u>1981</u> , 55, 1715-1720. (numerical values obtained through
3) 1-Butanol; C ₄ H ₁₀ O; [71-36-3]		personal communication with author.)
ARIABLES:	<u> </u>	PREPARED BY:
Temperature and	Solvent Composition	W.E. Acree, Jr.
XPERIMENTAL VALU	ES ^a (Continued)	
T/K	x2 ^(s)	×1
312.95	0.4933	0.190
318.45	0.4933	0.243
320.55	0.4933	0.265
331.05	0.4933	0.428
282.35	0.7994	0.0625
284.05	0.7994	0.0683
288.45	0.7994	0.0802
291.85	0.7994	0.0924
295.65	0.7994	0.107
300.25	0.7994	0.128
304.55	0.7994	0.154
309.75	0.7994	0.190
312.95	0.7994	0.221
315.25	0.7994	0.245
318.55	0.7994	0.284
327.75	0.7994	0.430
282.05	1.0000	0.063
286.35	1.0000	0.072
289.55	1.0000	0.084
289.85	1.0000	0.082
292.45	1.0000	0.094
295.45	1.0000	0.104
298.65	1.0000	0.119
302.45	1.0000	0.138
306.75	1.0000	0.163
310.25	1.0000	0.189
317.05	1.0000	0.243
319.25	1.0000	0.277
319.65	1.0000	0.276
324.15	1.0000	0.340
325.75	1.0000	0.368

COMPONENTS:			ORIGINAL MEASUREMENTS:			
	• halene; C ₁₀ H ₈ ; {	91-20-31	Domanska, U. Polish J. Chem. <u>1981</u> , 55, 1715-1720.			
}						
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3] (3) l-Hexanol; C ₆ H ₁₄ O; [111-27-3]			(numerical values obtained through personal correspondence with author.)			
VARIABLES:	VARIABLES:			Y:		
Temperatu	re and Solvent	Composition	W.E. Acre	e, Jr.		
EXPERIMENT	AL VALUES ⁸		!	- <u></u>		
т/к	x2 ^(s)	*1	T/K	x2 ^(s)	<i>x</i> ₁	
282.3	0.0000	0.054	296.75	0.1000	0.0947	
286.3	5 0.0000	0.062	299.55	0.1000	0.108	
290.3	5 0.0000	0.073	304.55	0.1000	0.122	
296.0	5 0.0000	0.086	307.25	0.1000	0.137	
299.9	5 0.0000	0.101	310.55	0.1000	0.154	
305.7		0.120	314.45	0.1000	0.180	
310.8	5 0.0000	0.147	320.05	0.1000	0.230	
314.9	5 0.0000	0.175	321.75	0.1000	0.253	
318.9		0.201	327.85	0.1000	0.319	
321.4		0.224	335.55	0.1000	0.487	
331.5		0.368	000100			
331.5	5 0.0000	0.300	101 75	0.4979	0.0677	
	- 0.1000	0.0500	282.75	-		
281.5		0.0528	287.90	0.4979	0.0820	
284.6		0.0597	293.85	0.4979	0.103	
288.2		0.0681	299.15	0.4979	0.125	
292.8	5 0.1000	0.0789	306.80	0.4979	0.169	
			312.55	0.4979	0.218	
		(Continue	d next page)			
	······					
		AUXILIARY	INFORMATION	i 		
METHOD: AP	PARATUS/PROCEDU	RE	SOURCE AND	PURITY OF M	ATERIALS:	
thermomet		h and a precision	(1) Purity not specified, P.O.Ch., Gliwice, Poland, was vacuum sublimed to a melting temperature of 80.25 °C.			
dynamic m trations glass amp	ethod. Mixtures were sealed in oules and place	of known concen- thick-walled d in a constant	(2) Initial purity not specified, Reachim Poland, was dried over phosphorous pentoxide and fractionally distilled			
ture was hour. So noting th	temperature to equilibrate. Bath tempera- ture was slowly increased by 2 K per hour. Solubility determined by visually noting the temperature at which the last trace of solid solute disappeared.			<ul> <li>to a final purity of 99.97 %.</li> <li>(3) Initial purity not specified, Reachim was dried over sodium carbonate and distilled to final purity of 99.94 %.</li> </ul>		
			ESTIMATED	ERRORS 1		
			ESTIMATED ERRORS: $T/K$ : precision $\pm$ 0.1. $x_3^{(s)}$ : $\pm$ 0.0002 (compiler). $x_1$ : to 3 significant figs. (compiler).			

(numerical values obtained through	COMPONENTS:			ORIGINAL MEASUREMENTS:		
(3) 1-Hexanol, C ₆ R ₁₄ O; [111-27-3]       (numerical values obtained through personal correspondence with author         /ARIABLES:       PREPARED BY:         Temperature and Solvent Composition       W.E. Acree, Jr.         XXFERIMENTAL VALUES* (Continued)       T/K x ₂ ⁽⁴⁾ x ₁ T/K x ₂ ⁽⁴⁾ x ₁ T/K x ₂ ⁽⁶⁾ x ₁ 318.55       0.4979       0.271       279.85       0.8998       0.0601         321.95       0.4979       0.313       283.75       0.8998       0.015         334.35       0.4979       0.539       295.75       0.8998       0.115         301.05       0.8998       0.113       283.95       0.8998       0.113         283.95       0.6994       0.0722       308.05       0.8998       0.128         290.00       0.6994       0.0900       313.05       0.8998       0.271         298.55       0.6994       0.125       321.45       0.8998       0.333         302.85       0.6994       0.125       321.45       0.8998       0.383         309.25       0.6994       0.125       321.45       0.8998       0.363         315.65       0.6994       0.368       286.35       1.0000       0.063         23	(1) Naphthale	ene; C ₁₀ H ₈ ; [9	91-20-3]	Domanska	, U.	
Temperature and Solvent Composition         W.E. Acree, Jr.           SEPERIMENTAL VALUES ⁸ (Continued)         T/K         x2 ⁽⁵⁾ x1           318.55         0.4979         0.271         279.85         0.8998         0.0601           321.95         0.4979         0.313         283.75         0.8998         0.0706           325.75         0.4979         0.363         289.95         0.8998         0.115           314.35         0.4979         0.539         295.75         0.8998         0.115           263.95         0.6994         0.0702         306.05         0.8998         0.128           290.00         0.6994         0.0900         313.05         0.8998         0.228           294.35         0.6994         0.106         316.85         0.8998         0.333           303.85         0.6994         0.125         321.45         0.8998         0.333           303.85         0.6994         0.194         327.55         0.8998         0.333           315.65         0.6994         0.309         282.05         1.0000         0.0631           323.95         0.6994         0.368         286.35         1.0000         0.064           334.9			Polish J. Chem. <u>1981</u> , 55, 1715-1720. (numerical values obtained through personal correspondence with author.)			
SEPERTHEMENTAL VALUES ⁵ (Continued) $T/K$ $x_2^{(4)}$ $x_1$ $T/K$ $x_2^{(4)}$ $x_1$ 318.55         0.4979         0.313         283.75         0.8998         0.0601           321.95         0.4979         0.363         289.95         0.8998         0.0887           334.35         0.4979         0.539         295.75         0.8998         0.115           301.05         0.6994         0.0702         308.05         0.8998         0.139           283.95         0.6994         0.0900         313.05         0.8998         0.228           294.35         0.6994         0.106         316.85         0.8998         0.228           294.35         0.6994         0.125         321.45         0.8998         0.333           303.85         0.6994         0.125         321.45         0.8998         0.363           309.25         0.6994         0.194         327.55         0.8998         0.433           315.65         0.6994         0.253         1.0000         0.063           323.95         0.6994         0.368         286.35         1.0000         0.064           334.95	ARIABLES:			PREPARED BY:		
$T/K$ $x_2^{(1)}$ $x_1$ $T/K$ $x_2^{(1)}$ $x_1$ 318.550.49790.271279.850.89980.0601321.950.49790.313283.750.89980.0706325.750.49790.363289.950.89980.181334.350.49790.539295.750.89980.115301.050.69940.0722308.050.89980.128283.950.69940.0722308.050.89980.228294.350.69940.106316.850.89980.271298.550.69940.125321.450.89980.333303.850.69940.125321.450.89980.333304.850.69940.194327.550.89980.433315.650.69940.309 $$	Temperature a	Temperature and Solvent Composition		W.E. Acr	ee, Jr.	
318.55         0.4979         0.271         279.85         0.8998         0.0601           321.95         0.4979         0.313         283.75         0.8998         0.0706           325.75         0.4979         0.363         299.95         0.8998         0.0887           334.35         0.4979         0.539         295.75         0.8998         0.115           301.05         0.8998         0.115         301.05         0.8998         0.124           283.95         0.6994         0.0722         308.05         0.8998         0.228           290.00         0.6994         0.0900         313.05         0.8998         0.271           298.55         0.6994         0.106         316.85         0.8998         0.333           303.85         0.6994         0.125         321.45         0.8998         0.333           309.25         0.6994         0.194         327.55         0.8998         0.433           319.95         0.6994         0.309         282.05         1.0000         0.063           323.95         0.6994         0.368         286.35         1.0000         0.0684           281.45         0.7999         0.0755         295.45	EXPERIMENTAL V	ALUES ^a (Cont	inued)		k	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	T/K	x2 ^(s)	×1	T/K	x2 ^(s)	×1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	318.55	0.4979	0.271	279.85	0.8998	0.0601
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	321.95	0.4979	0.313	283.75	0.8998	0.0706
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	325.75	0.4979	0.363	289.95	0.8998	0.0887
283.95 $0.6994$ $0.0722$ $308.05$ $0.8998$ $0.184$ $290.00$ $0.6994$ $0.0900$ $313.05$ $0.8998$ $0.228$ $294.35$ $0.6994$ $0.106$ $316.85$ $0.8998$ $0.271$ $298.55$ $0.6994$ $0.125$ $321.45$ $0.8998$ $0.333$ $303.85$ $0.6994$ $0.153$ $324.65$ $0.8998$ $0.383$ $309.25$ $0.6994$ $0.194$ $327.55$ $0.8998$ $0.433$ $315.65$ $0.6994$ $0.253$ $$	334.35	0.4979	0.539	295.75	0.8998	0.115
290.00 $0.6994$ $0.0900$ $313.05$ $0.8998$ $0.228$ 294.35 $0.6994$ $0.106$ $316.85$ $0.8998$ $0.271$ 298.55 $0.6994$ $0.125$ $321.45$ $0.8998$ $0.333$ $303.85$ $0.6994$ $0.153$ $324.65$ $0.8998$ $0.383$ $309.25$ $0.6994$ $0.194$ $327.55$ $0.8998$ $0.433$ $315.65$ $0.6994$ $0.253$ $0.309$ $0.368$ $0.6934$ $323.95$ $0.6994$ $0.368$ $282.05$ $1.0000$ $0.072$ $330.45$ $0.6994$ $0.368$ $286.35$ $1.0000$ $0.084$ $334.95$ $0.6994$ $0.581$ $289.55$ $1.0000$ $0.082$ $281.45$ $0.7999$ $0.0631$ $292.45$ $1.0000$ $0.104$ $291.05$ $0.7999$ $0.0939$ $298.65$ $1.0000$ $0.119$ $293.55$ $0.7999$ $0.104$ $302.45$ $1.0000$ $0.118$ $300.05$ $0.7999$ $0.162$ $310.25$ $1.0000$ $0.188$ $300.05$ $0.7999$ $0.162$ $310.25$ $1.0000$ $0.243$ $311.35$ $0.7999$ $0.213$ $319.25$ $1.0000$ $0.276$ $318.60$ $0.7999$ $0.294$ $324.15$ $1.0000$ $0.276$				301.05	0.8998	0.139
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	283.95	0.6994	0.0722	308.05	0.8998	0.184
298.55 $0.6994$ $0.125$ $321.45$ $0.8998$ $0.333$ 303.85 $0.6994$ $0.153$ $324.65$ $0.8998$ $0.383$ $309.25$ $0.6994$ $0.194$ $327.55$ $0.8998$ $0.433$ $315.65$ $0.6994$ $0.253$ $0.309$ $0.309$ $0.309$ $323.95$ $0.6994$ $0.368$ $282.05$ $1.0000$ $0.063$ $323.95$ $0.6994$ $0.368$ $286.35$ $1.0000$ $0.072$ $330.45$ $0.6994$ $0.482$ $289.55$ $1.0000$ $0.084$ $334.95$ $0.6994$ $0.581$ $292.45$ $1.0000$ $0.092$ $285.50$ $0.7999$ $0.0755$ $295.45$ $1.0000$ $0.104$ $291.05$ $0.7999$ $0.0939$ $298.65$ $1.0000$ $0.119$ $293.55$ $0.7999$ $0.104$ $302.45$ $1.0000$ $0.163$ $300.05$ $0.7999$ $0.133$ $306.75$ $1.0000$ $0.189$ $308.95$ $0.7999$ $0.162$ $310.25$ $1.0000$ $0.243$ $311.35$ $0.7999$ $0.213$ $319.25$ $1.0000$ $0.277$ $315.25$ $0.7999$ $0.249$ $319.65$ $1.0000$ $0.276$ $318.60$ $0.7999$ $0.294$ $324.15$ $1.0000$ $0.340$	290.00	0.6994	0.0900	313.05	0.8998	0.228
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	294.35	0.6994	0.106	316.85	0.8998	0.271
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	298.55	0.6994	0.125	321.45	0.8998	0.333
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	303.85	0.6994	0.153	324.65	0.8998	0.383
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	309.25	0.6994	0.194	327.55	0.8998	0.433
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	315.65	0.6994	0.253			
323.95 $0.6994$ $0.368$ $286.35$ $1.0000$ $0.072$ $330.45$ $0.6994$ $0.482$ $289.55$ $1.0000$ $0.084$ $334.95$ $0.6994$ $0.581$ $289.85$ $1.0000$ $0.082$ $281.45$ $0.7999$ $0.0631$ $292.45$ $1.0000$ $0.092$ $285.50$ $0.7999$ $0.0755$ $295.45$ $1.0000$ $0.104$ $291.05$ $0.7999$ $0.0939$ $298.65$ $1.0000$ $0.119$ $293.55$ $0.7999$ $0.104$ $302.45$ $1.0000$ $0.163$ $300.05$ $0.7999$ $0.162$ $310.25$ $1.0000$ $0.163$ $305.00$ $0.7999$ $0.162$ $310.25$ $1.0000$ $0.243$ $311.35$ $0.7999$ $0.213$ $319.25$ $1.0000$ $0.277$ $315.25$ $0.7999$ $0.249$ $319.65$ $1.0000$ $0.276$ $318.60$ $0.7999$ $0.294$ $324.15$ $1.0000$ $0.340$	319.95	0.6994	0.309			
330.45 $0.6994$ $0.482$ $289.55$ $1.0000$ $0.084$ $334.95$ $0.6994$ $0.581$ $289.85$ $1.0000$ $0.082$ $281.45$ $0.7999$ $0.0631$ $292.45$ $1.0000$ $0.092$ $285.50$ $0.7999$ $0.0755$ $295.45$ $1.0000$ $0.104$ $291.05$ $0.7999$ $0.0939$ $298.65$ $1.0000$ $0.119$ $293.55$ $0.7999$ $0.104$ $302.45$ $1.0000$ $0.138$ $300.05$ $0.7999$ $0.162$ $310.25$ $1.0000$ $0.189$ $308.95$ $0.7999$ $0.191$ $317.05$ $1.0000$ $0.243$ $311.35$ $0.7999$ $0.213$ $319.25$ $1.0000$ $0.277$ $315.25$ $0.7999$ $0.249$ $319.65$ $1.0000$ $0.276$ $318.60$ $0.7999$ $0.294$ $324.15$ $1.0000$ $0.340$	323.95	0.6994	0.368			
334.95       0.6994       0.581       289.85       1.0000       0.082         281.45       0.7999       0.0631       292.45       1.0000       0.092         285.50       0.7999       0.0755       295.45       1.0000       0.104         291.05       0.7999       0.0939       298.65       1.0000       0.119         293.55       0.7999       0.104       302.45       1.0000       0.163         300.05       0.7999       0.162       310.25       1.0000       0.189         308.95       0.7999       0.162       310.25       1.0000       0.243         311.35       0.7999       0.213       319.25       1.0000       0.277         315.25       0.7999       0.249       319.65       1.0000       0.276         318.60       0.7999       0.294       324.15       1.0000       0.340	330.45	0.6994	0.482			
281.450.79990.0631292.451.00000.092285.500.79990.0755295.451.00000.104291.050.79990.0939298.651.00000.119293.550.79990.104302.451.00000.138300.050.79990.133306.751.00000.163305.000.79990.162310.251.00000.189308.950.79990.191317.051.00000.243311.350.79990.213319.251.00000.277315.250.79990.249319.651.00000.340	334.95	0.6994	0.581			
285.500.79990.0755295.451.00000.104291.050.79990.0939298.651.00000.119293.550.79990.104302.451.00000.138300.050.79990.133306.751.00000.163305.000.79990.162310.251.00000.189308.950.79990.191317.051.00000.243311.350.79990.213319.251.00000.277315.250.79990.249319.651.00000.276318.600.79990.294324.151.00000.340						
291.050.79990.0939298.651.00000.119293.550.79990.104302.451.00000.138300.050.79990.133306.751.00000.163305.000.79990.162310.251.00000.189308.950.79990.191317.051.00000.243311.350.79990.213319.251.00000.277315.250.79990.249319.651.00000.276318.600.79990.294324.151.00000.340						
293.550.79990.104302.451.00000.138300.050.79990.133306.751.00000.163305.000.79990.162310.251.00000.189308.950.79990.191317.051.00000.243311.350.79990.213319.251.00000.277315.250.79990.249319.651.00000.276318.600.79990.294324.151.00000.340						
300.050.79990.133306.751.00000.163305.000.79990.162310.251.00000.189308.950.79990.191317.051.00000.243311.350.79990.213319.251.00000.277315.250.79990.249319.651.00000.276318.600.79990.294324.151.00000.340						
305.000.79990.162310.251.00000.189308.950.79990.191317.051.00000.243311.350.79990.213319.251.00000.277315.250.79990.249319.651.00000.276318.600.79990.294324.151.00000.340						
308.950.79990.191317.051.00000.243311.350.79990.213319.251.00000.277315.250.79990.249319.651.00000.276318.600.79990.294324.151.00000.340						
311.350.79990.213319.251.00000.277315.250.79990.249319.651.00000.276318.600.79990.294324.151.00000.340						
315.250.79990.249319.651.00000.276318.600.79990.294324.151.00000.340						
318.60 0.7999 0.294 324.15 1.0000 0.340						
	315.25	0.7999	0.249			
321.45 0.7999 0.343 325.75 1.0000 0.368	318.60	0.7999	0.294	324.15	1.0000	0.340
	321.45	0.7999	0.343	325.75	1.0000	0.368
325.25 0.7999 0.394	325.25	0.7999	0.394			
332.95 0.7999 0.543	332.95	0.7999	0.543			

^a  $x_2^{(s)}$ ; initial mole fraction of the binary solvent mixture;  $x_1$ : mole fraction solubility of the solute.

COMPONENTS:			ORIGINAL MEASUREMENTS:			
(1) Naphthale	ne; C ₁₀ H ₀ ; [9	1-20-3]	Dománska, U. Polish J. Chem. <u>1981</u> , 55, 1715-1720.			
<pre>(2) n-Hexane;</pre>						
	(3) 1-Octanol; C ₈ H ₁₈ O; [111-87-5]			(numerical values obtained through personal correspondence with author.)		
VARIABLES:			PREPARED B	¥:	<u></u>	
Temperature a	nd Solvent C	composition	W.E. Acre	e, Jr.		
EXPERIMENTAL V	ALUES ^a	<u> </u>	<b>↓</b>		······································	
T/K	x2 ^(s)	<i>x</i> 1	T/K	*2 ^(s)	×i	
280.95	0.0000	0.069	284.25	0.2515	0.0787	
284.35	0.0000	0.077	288.55	0.2515	0.0907	
286.75	0.0000	0.084	292.05	0.2515	0.103	
289.95	0.0000	0.092	296.25	0.2515	0.119	
291.95	0.0000	0.099	299.35	0.2515	0.136	
294.15	0.0000	0.108	305.30	0.2515	0.161	
295.55	0.0000	0.116	309.85	0.2515	0.193	
298.55	0.0000	0.124	314.55	0.2515	0.226	
302.35	0.0000	0.139	320.15	0.2515	0.286	
305.15	0.0000	0.153	325.25	0.2515	0.349	
308.25	0.0000	0.169	335.05	0.2515	0.528	
311.95	0.0000	0.194				
315.45	0.0000	0.221	280.05	0.5000	0.0668	
317.45	0.0000	0.240	284.40	0.5000	0.0785	
320.65	0.0000	0.267	287.85	0.5000	0.0890	
323.35	0.0000	0.299	290.75	0.5000	0.100	
325.95	0.0000	0.328	294.25	0.5000	0.114	
331.55	0.0000	0.422	296.80	0.5000	0.125	
502150	0.0000	-				
	<u></u>	(Continue	d next page)			
		AUXILIARY	INFORMATION	ſ		
METHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:	
Constant temp thermometer.	erature bath	and a precision	(1) Purity not specified, P.O.Ch., Gliwice, Poland, was vacuum sublimed to a melting temperature of 80.25 °C.			
dynamic metho trations were glass ampoule temperature t	Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Bath tempera- ture was slowly increased by 2 K per			<ul> <li>(2) Initial purity not specified, Reachim Poland, was dried over phosphorous pentoxide and fractionally distilled to a final purity of 99.9+ %.</li> </ul>		
hour. Solubi	lity determi mperature at	ned by visually which the last	(3) Initial purity not specified, Koch- Light, was used as received.			
			ESTIMATED	ERRORS :		
			T/K: prec	ision ± 0.1.		
			$x_{7}^{(s)}$ ; ± 0	.0002 (compi	ler). fıgs. (compiler).	
: 	·· <u></u> ······	·			······	

COMPONENTS:			ORIGINAL MEASUREMENTS:			
(1) Naphtha	lene; C ₁₀ H ₈ ; [9	91-20-3]	Domanska	, U.		
(2) n-Hexan	(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]		Polish J. Chem. <u>1981</u> , 55, 1715-1720.			
(3) 1-Octanol; C ₈ H ₁₈ O; [111-87-5]		(numerical values obtained through personal communication with author.) PREPARED BY:				
ARIABLES:						
Temperature	Temperature and Solvent Composition		W.E. Acr	ee, Jr.		
EXPERIMENTAL	VALUES ^a (Cont	inued)	<u></u>			
T/K	x2 ^(s)	×1	T/K	*2 ^(s)	×1	
298.75	0.5000	0.134	306.75	1.0000	0.163	
302.65	0.5000	0.153	310.25	1.0000	0.189	
306.20	0.5000	0.175	317.05	1.0000	0.243	
309.05	0.5000	0.195	319.25	1.0000	0.277	
312.95	0.5000	0.226	319.65	1.0000	0.276	
316.30	0.5000	0.258	324.15	1.0000	0.340	
320.80	0.5000	0.308	325.75	1.0000	0.368	
327.95	0.5000	0.417				
283.35	0.8000	0.0724				
286.95	0.8000	0.0841				
290.35	0.8000	0.0963				
295.35	0.8000	0.116				
299.45	0.8000	0.135				
303.30	0.8000	0.158				
306.05	0.8000	0.177				
309.45	0.8000	0.199				
312.25	0.8000	0.224				
315.45	0.8000	0.257				
317.55	0.8000	0.283				
320.05	0.8000	0.317				
323.35	0.8000	0.359				
332.75	0.8000	0.543				
282.05	1.0000	0.063				
286.35	1.0000	0.072				
289.55	1.0000	0.084				
289.85	1.0000	0.082				
292.45	1.0000	0.094				
295.45	1.0000	0.104				
298.65	1.0000	0.119				
302.45	1.0000	0.138				

COMPONENTS :			ORTGINAL A	EASUREMENTS :	
<pre>(1) Naphthalene; C₁₀H₈; [91-20-3] (2) Benzene; C₆H₆; [71-43-2] (3) Pyridine; C₅H₅N; [110-86-1]</pre>			ORIGINAL MEASUREMENTS: Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E. J. Chem. Eng. Data <u>1987</u> , 32, 233-240. Choi, P.B.; McLaughlin, E.		
					m. <u>1983</u> , 22, 46-51.
VARIABLES:			PREPARED I		
Temperature,	Solvent comp	OBICION	W.E. Acre	e, Jr.	
EXPERIMENTAL V	ALUES ^a				
T/K	x3 ^(s)	<b>x</b> 1	T/K	x3(2)	<b>*</b> 1
310.35	0.0000	0.3964	335.4	0.3000	0.7054
315.55	0.000	0.4494	344.0	0.3000	0.8382
323.45	0.0000	0.5391			,
334.35	0.0000	0.6885	297.6	1.0000	0.3032
344.15	0.0000	0.8422	325.3	1.0000	0.5748
			333.2	1.0000	0.6808
303.7	0.3000	0.3421	337.2	1.0000	0.7422
315.0	0.3000	0.4525	344.4	1.0000	0.8570
324.7	0.3000	0.5619			
					•
		AUXILIARY	INFORMATION	ĩ	
METHOD: APPARA	TUS/PROCEDUR	5	SOURCE AND	PURITY OF M	ATERIALS:
METHOD: APPARATUS/PROCEDURE Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.			(2) Gold Compa (2) Gold Compa was u (3) Gold	ný, Rocheste passed over a chen recrysta Label, 99.9+ ny, Milwauke used as recei Label, 99.9+	odiak Chemical r, New York, USA, ctivated alumina llized from toluene. *, Aldrich Chemical e, Wisconsin, USA, ved. *, Aldrich Chemical as received.
			ESTIMATED T/K: prec x ₃ ^(s) : ± 0 x ₁ : ± 0.0	ision + 0.1.	

COMPONENTS: (1) Naphthalene; C ₁₀ H ₈ ; [91-20-3] (2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7] (3) Pyridine; C ₅ H ₅ N; [110-86-1] VARIABLES: Temperature, Solvent composition			ORIGINAL MEASUREMENTS:				
			Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLauglin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; McLaughlin, E. Ind. Chem. Eng. Fundam. <u>1983</u> , 22, 46-51. Coon, J.E.; Troth, M.; McLaughlin, E. J. Chem. Eng. Data <u>1987</u> , 32, 233-240.				
			PREPARED BY:				
			e, Jr.				
ALUES ^a		[	<u> </u>				
x ₁ ^(S)	x,	T/K	x _z (s)	x ₁			
0.0000	0.1597	341.3	0.3000	0.7832			
0.0000	0.2254	347.2	0.3000	0.8984			
0.0000	0.3025						
0.0000	0.4612	297.6	1.0000	0.3032			
0.0000	0.6073	325.3	1.0000	0.5748			
0.0000	0.8082	333.2	1.0000	0.6808			
		337.2	1.0000	0.7422			
0.3000	0.2763	344.4	1.0000	0.8570			
0.3000	0.4083						
0.3000	0.5047						
0.3000							
	AUXILIARY	INFORMATION	t	<u> </u>			
TUS/PROCEDUR	E.	SOURCE AND	PURITY OF M	ATERIALS:			
METHOD: APPARATUS/PROCEDURE Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 X every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.			<ul> <li>(1) 99.2 %, Eastman Kodiak Chemical Company, Rochester, New York, USA, was passed over activated alumina and then recrystallized from toluene.</li> <li>(2) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was used as received.</li> <li>(3) Gold Label, 99.9+ %, Aldrich Chemical Company was used as received.</li> </ul>				
at a speed o erature was y 1200 secon visually no h the last t eared. At le	f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	was u (3) Gold	Label, 99.9+	ved. 5, Aldrich Chemical			
	Ime; C ₆ H ₁₂ ; [1         C ₅ H ₅ N; [110-         Solvent comp         /ALUES ⁸ x ₃ (s)         0.0000         0.0000         0.0000         0.0000         0.0000         0.0000         0.0000         0.0000         0.0000         0.0000         0.0000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000	Ame; C ₆ H ₁₂ ; [110-82-7] C ₅ H ₅ N; [110-86-1] Solvent composition ALUES ⁸ x ₃ ^(s) x ₁ 0.0000 0.1597 0.0000 0.2254 0.0000 0.4612 0.0000 0.4612 0.0000 0.6073 0.0000 0.8082 0.3000 0.2763 0.3000 0.2763 0.3000 0.4083 0.3000 0.5047 0.3000 0.6189 mitial mole fraction of binary y of the solute. AUXILIARY TUS/PROCEDURE merature bath and a precision were measured using a d. Mixtures of known concen-	K.G., Mc.         Ine; C ₆ H ₁₂ ; [110-82-7]         C ₅ H ₅ N; [110-86-1]         Coon, J.I.         J. Chem.         Coon, J.I.         J. Chem.         Solvent composition         W.E. Acres         X ₃ (*)         X ₁ J. Chem.         N.E. Acres         VALUES*         X ₃ (*)         X ₁ J. Chem.         NE. Acres         No000         0.3000         0.4612         297.6         0.3000         0.3000         0.3000         0.3000         0.3000         0.4083         0.3000         0.4083         0.3000         0.418	K.G., McLauglin, E. J.         Ine; C ₆ H ₁₂ ; [110-82-7]         C ₃ H ₅ N; [110-86-1]         Con, J.E.; McLaughli Ind. Chem. Eng. Data ]         Con, J.E.; McLaughli Ind. Chem. Eng. Data ]         Solvent composition         PREPARED BY:         X.LUES ^a x ₃ ^(s) x ₁ O.0000         0.0000         0.1597         341.3         0.3000         0.0000         0.3025         0.0000         0.0000         0.4612         297.6         1.0000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.3000         0.5047         0.3000         0.3000         0.5047         0.3000         0.5047         0.3000         0.5047         0.3000         0.5047         0.3000         0.5047         0.3000         Current bath and a preci			

Components:			ORIGINAL MEASUREMENTS:			
(1) Naphthale	ene; C ₁₀ H ₈ ; [9	1-20-3]	Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. <i>J. Chem. Eng. Data</i> <u>1985</u> , 30, 403-409.			
<pre>(2) Benzene; C₆H₆; [71-43-2] (3) Thiophene; C₄H₄S; [110-02-1] VARIABLES:</pre>				Coon, J.E.; Troth, M.; McLaughlin, E.		
					<u>987</u> , <i>32</i> , 233-240.	
			Ind. Chen	3.; McLaughli m. Eng. Funda	m. <u>1983</u> , <i>22</i> , 46-51	
			PREPARED BY:			
Temperature,	Solvent comp	osition	W.E. Acre	e, Jr.		
EXPERIMENTAL V	ALUES ^a		~ <b>4</b>			
T/K	x3 ^(s)	×1	T/K	x3 ^(s)	<b>x</b> 1	
310.35	0.0000	0.3964	336.2	0.3000	0.7142	
315.55	0.0000	0.4494	344.4	0.3000	0.8424	
323.45	0.0000	0.5391				
334.35	0.0000	0.6885	303.2	1.0000	0.3588	
344.15	0.0000	0.8422	318.2	1.0000	0.5011	
			322.7	1.0000	0.5510	
303.9	0.3000	0.3433	336.8	1.0000	0.7372	
	0.3000	0.4476	341.1	1.0000	0.8053	
314.8	013000					
324.6 ^a x _t ^(s) : i	0.3000	0.5520 fraction of binary	348.1	1.0000 ture; x _i : mol	0.9167 Le fraction	
324.6 ^a x _t ^(s) : i	0.3000 nitial mole :	0.5520 fraction of binary	348.1			
324.6 ^a x _t ^(s) : i	0.3000 nitial mole :	0.5520 fraction of binary ute.	348.1	ture; x ₁ : mo)		
324.6 ^a x _t ^(s) : i	0.3000 nitial mole : y of the sol	0.5520 fraction of binary ute. AUXILIARS	348.1 solvent mix	ture; x ₁ : mo)	le fraction	
324.6 a x3 ^(s) : i solubilit solubilit (ETHOD: APPARA Constant temp thermometer. Solubilities dynamic method trations were glass ampoule temperature to were rotated	0.3000 nitial mole : y of the sol TUS/PROCEDUR werature bath were measure d. Mixtures sealed in t is and placed o equilibrat at a speed on	0.5520 fraction of binary ute. AUXILIARS E , and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while	348.1 Solvent mix INFORMATION SOURCE AND (1) 99.2 Compa was p and t (2) Gold Compa	ture; x ₁ : mol ture; x ₁ : mol purity of M to PURITY OF M to PURI	ATERIALS: Codiak Chemical r, New York, USA, ctivated alumina llized from toluence *, Aldrich Chemicza re, Wisconsin, USA,	
324.6 a x3 ⁽⁵⁾ : i solubilit solubilit (ETHOD: APPARA Constant temp thermometer. Solubilities dynamic metho trations were glass ampoule temperature t were rotated the bath temp by 0.1 K ever determined by ature at whic	0.3000 nitial mole i y of the sol TUS/PROCEDUR berature bath were measure d. Mixtures a sealed in t sealed in t se	0.5520 fraction of binary ute. AUXILIARN E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	348.1 solvent mix INFORMATION (1) 99.2 Compa was p and t (2) Gold Compa was u (3) Gold	ture; x ₁ : mol b PURITY OF M %, Eastman M any, Rocheste bassed over a chen recrysta Label, 99.94 any, Milwauke used as recei Label, 99.94	ATERIALS: Codiak Chemical r, New York, USA, ctivated alumina llized from toluence *, Aldrich Chemicza re, Wisconsin, USA,	

Components :	OMPONENTS :			ORIGINAL MEASUREMENTS:			
<ul> <li>(1) Naphthalene; C₁₀H₈; [91-20-3]</li> <li>(2) Cyclohexane; C₆H₁₂; [110-82-7]</li> <li>(3) Thiophene; C₄H₄S; [110-02-1]</li> <li>VARIABLES:</li> <li>Temperature, Solvent composition</li> </ul>			Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data, <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E. J. Chem. Eng. Data, <u>1987</u> , 32, 233-240.				
			Choi, P.H Ind. Eng	B.; McLaughli . Chem. Funda	n, E. m., <u>1983</u> , 22, 46-51.		
			PREPARED E				
			W.E. Acre	se, Jr.			
EXPERIMENTAL V	VALUES ^a						
T/K	x3 ^(s)	<i>x</i> 1	T/K	x3 ^(s)	<b>x</b> 1		
300.15	0.0000	0.1597	337.9	0.3000	0.7202		
308.25	0.0000	0.2254	347.8	0.3000	0.8998		
315.15	0.0000	0.3025					
325.45	0.0000	0.4612	303.2	1.0000	0.3588		
333.15	0.0000	0.6073	318.2	1.0000	0.5011		
343.05	0.0000	0.8082	322.7	1.0000	0.5510		
			336.8	1.0000	0.7372		
308.2	0.3000	0.2880	341.1	1.0000	0.8053		
312.9	0.3000	0.3593	348.1	1.0000	0.9167		
319.7	0.3000	0.4430					
		AUXILIARY	INFORMATION	1			
ETHOD: APPARI	ATUS/PROCEDUR	E	SOURCE AND	D PURITY OF M	ATERIALS:		
Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.		(2) Gold Compa (2) Gold Compa was u (3) Gold	any, Rocheste passed over a chen recrysta Label, 99.9+ any, Milwauke used as recei Label, 99.9+	odiak Chemical r, New York, USA, ctivated alumina llized from toluene. %, Aldrich Chemical e, Wisconsin, USA, ved. %, Aldrich Chemical as received.			
solute disapp ments were pe							

COMPONENTS:			ORIGINAL MEASUREMENTS:		
(1) Naphthal	ene; C ₁₀ H ₈ ; [9	91-20-3]	Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409.		
<pre>(2) Thiophene; C₄H₄S; [110-02-1] (3) Pyridine; C₅H₅N; [110-86-1] VARIABLES: Temperature, Solvent composition</pre>			Coon, J.E	S.; Troth, M.	; McLaughlin, E. .987, 32, 233-240.
			Choi, P.E	B.; McLaughli	
			PREPARED BY: W.E. Acree, Jr.		
EXPERIMENTAL				(1)	
T/K	x3 ^(s)	<b>*</b> 1	T/K	x ₃ (s) .	×i
303.2	0.0000	0.3588	323.0	0.3000	0.6737
318.2	0.0000	0.5011	346.0	0.3000	0.8696
322.7	0.0000	0.5510			
336.8	0.0000	0.7372	297.6	1.0000	0.3032
341.1	0.0000	0.8053	325.3	1.0000	0.5748
348.1	0.0000	0.9167	333.2	1.0000	0.6808
			337.2	1.0000	0.7422
303.8	0.3000	0.3561	344.4	1.0000	0.8570
306.7	0.3000	0.3822			
317.8 ^a x ₃ (s): j	0.3000	0.4911 fraction of binary	solvent mix	ture; x ₁ : mo]	le fraction
317.8 ^a x _i (s): j	0.3000	0.4911 fraction of binary	solvent mix	ture; x ₁ : mo]	le fraction
317.8 ^a x _i (s): j	0.3000	0.4911 fraction of binary ute.	solvent mix		le fraction
317.8 ^a _{x3} (s): j	0.3000 initial mole : ty of the sol	0.4911 fraction of binary ute. AUXILIARY	INFORMATION		
317.8 a x3(s); j solubili solubili METHOD: APPAR Constant tem thermometer. Solubilities dynamic methat trations werr glass ampould temperature of were rotated the bath tem by 0.1 K even determined by ature at whin solute disapp	0.3000 initial mole : ty of the sol ty of the sol ATUS/PROCEDUR perature bath were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t peared. At le erformed for	0.4911 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.2 Compa was p and t (2) Gold Compa was u (3) Gold	PURITY OF M %, Eastman K any, Rocheste passed over a chen recrysta Label, 99.9+ any, Milwauke used as recei Label, 99.9+	ATERIALS: Codiak Chemical Fr. New York, USA, Ctivated alumina Illized from toluene. * %, Aldrich Chemical re, Wisconsin, USA,
317.8 a x3(s); j solubili solubili METHOD: APPAR Constant tem thermometer. Solubilities dynamic meth trations were glass ampoul temperature of were rotated the bath tem by 0.1 K ever determined by ature at whi solute disapy ments were protections	0.3000 initial mole : ty of the sol ty of the sol ATUS/PROCEDUR perature bath were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t peared. At le erformed for	0.4911 fraction of binary ute. AUXILIARY E and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	INFORMATION SOURCE AND (1) 99.2 Compa was p and t (2) Gold Compa was u (3) Gold Compa	<pre>     PURITY OF M     &amp;, Eastman K     mny, Rocheste     passed over a     chen recrysta     Label, 99.9+     mny, Milwauke     ised as recei     Label, 99.9+     mny, was used      ERRORS:     cision + 0.1. </pre>	ATERIALS: Sodiak Chemical r, New York, USA, ctivated alumina llized from toluene. *, Aldrich Chemical re, Wisconsin, USA, ved. *, Aldrich Chemical l as received.

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COMPONENTS:	ORIGINAL MEASUREMENTS:		
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Heric, E.L.; Posey, C.D.		
(2) Ethylbenzene; C ₈ H ₁₀ ; [100-41-4]	J. Chem. Eng. Data <u>1964</u> , 9, 35-43.		
(3) Benzene; C ₆ H ₆ ; [71-43-2]			
VARIABLES:	PREPARED BY:		
T/K = 298, Solvent composition	W.E. Acree, Jr.		
EXPERIMENTAL VALUES ^a t = 25.0 °C			
x ₃ ^(s) x ₃ ^b	×1		
0.0000 0.0000	0.2926		
0.1505 0.1064	0.2930		
0.4089 0.2892	0.2928		
0.5872 0.4151	0.2931		
0.8400 0.5930	0.2940		
1.0000 0.7054	0.2946		
AUXILIARY	INFORMATION		
METEOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and a precision refractometer.	SOURCE AND PURITY OF MATERIALS: (1) Eastman Chemical Company, Rochester, New York, USA, was used as received.		
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in glass bottles and allowed to equili- brate with gentle agitation for several days at constant temperature. Refractive indices of saturated solutions were measured and solubilities obtained by extrapolation of a calibration plot of refractive index vs. solute concentration to the refractive index of the saturated solution. Attainment of equilibrium was verified by repetitive measurements several days later.	<ul> <li>(2) Spectroquality, Matheson, Coleman and Bell, USA, was dried over calcium hydride and distilled to a final purity of 99.9 %.</li> <li>(3) Spectroquality, Matheson, Coleman and Bell dried over sodium and distilled to a final purity of 99.95 %.</li> </ul>		
	ESTIMATED ERRORS: $T/K:$ precision $\pm$ 0.01. $x_3^{(3)}: \pm 0.0001.$ $x_1:$ precision $\pm 0.0005.$		

	COMPONENTS :			ORIGINAL MEASUREMENTS:		
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		Coon, J.E.; Auwaerter, J.E.; McLaughlin, E.				
<pre>(2) 1,2,3,4-Tetrahydronaphthalene; C₁₀H₁₂; [119-64-2]</pre>				ase Equilibr.	<u>1989</u> , <b>44</b> , 305-345.	
(3) Decahydr [91-17-8	<pre>(3) Decahydronaphthalene; C₁₀H₁₈; [91-17-8]</pre>					
VARIABLES:	/ARIABLES:			3¥:		
Temperature,	Temperature, Solvent composition		W.E. Acre	e, Jr.		
EXPERIMENTAL	VALUES ^a				<u></u>	
T/K	x3 ⁽⁸⁾	* ₁	T/K	x3 ^(s)	<b>x</b> 1	
306.6	0.0000	0.3635	339.6	0.5000 .	0.7580	
311.7	0.0000	0.4141	345.1	0.5000	0.8555	
318.4	0.0000	0.4820				
323.7	0.0000	0.5506	302.9	1.0000	0.2262	
330.1	0.0000	0.6272	307.7	1.0000	0.2705	
			311.7	1.0000	0.3181	
308.8	0.5000	0.3506	319.0	1.0000	0.3960	
318.5	0.5000	0.4529	324.3	1.0000	0.4703	
324.9	0.5000	0.5336	329.7	1.0000	0.5623	
335.0	0.5000	0.6801	335.6	1.0000	0.6725	
		AUXILIARY	INFORMATION	 I	·····	
ETHOD: APPAR	ATUS/PROCEDUR			D PURITY OF M	ATERIALS :	
Constant tem thermometer. Solubilities dynamic meth trations werr glass ampoul temperature were rotated the bath tem by 0.1 K even determined by ature at whis solute disapp	perature bath were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t peared. At le erformed for	E and a precision of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	SOURCE AND (1) 99.2 Milwa passe colum solut (2) 99.64 (3) 99+ 4 havin and 3 Compo	PURITY OF M *, Aldrich C tukee, Wiscon dover an ac an and then r ion. - *, Aldrich a, Aldrich Ch ag an isomer 19.4 * trans. onents 2 and cular sieves	hemical Company, sin, USA, was tivated alumina ecrystallized from Chemical Company. emical Company, ratio of 60.6 % cis	

Components:			ORIGINAL MEASUREMENTS: , Domanska, U. <i>Polish J. Chem.</i> <u>1981</u> , 55, 1715-1720. (numerical values obtained through personal correspondence with author.)								
<pre>(1) Naphthalene; C₁₀H₈; [91-20-3] (2) Cyclohexane; C₆H₁₂; [110-82-7]</pre>											
		(3) Diiodomethane; CH ₂ I ₂ ; [75-11-6]									
ARIABLES:	ARIABLES:					PREPARED BY:					
Temperature a	and Solvent C	omposition	W.E. Acree, Jr.								
EXPERIMENTAL V	VALUES ^a	· · · · · · · · · · · · · · · · · · ·									
T/K	x2 ^(s)	×1	T/K	x2 ^(s)	* ₁						
321.85	0.0000	0.4381	312.95	0.4920	0.4091						
319.10	0.0000	0.3967	302.75	0.4920	0.3056						
313.00	0.0000	0.3142	297.75	0.4920	0.2695						
307.00	0.0000	0.2485	294.95	0.4920	0.2482						
301.85	0.0000	0.2017	289.60	0.4920	0.2127						
295.85	0.0000	0.1593	284.80	0.4920	0.1846						
291.00	0.0000	0.1310	281.75	0.4920	0.1662						
286.55	0.0000	0.1094									
281.75 0.0000 0.0904		315.25	315.25 0.7000	0.4134							
			303.15	0.7000	0.2962						
315.15	0.3069	0.4132	299.15	0.7000	0.2680						
302.60	0.3069	0.2960	296.95	0.7000	0.2515						
299.20	0.3069	0.2688	295.05	0.7000	0.2411						
296.95	0.3069	0.2517	290.95	0.7000	0.2090						
295.15	0.3069	0.2398	287.35	0.7000	0.1853						
295.15	0.3069	0.2092	287.55	0.7000	0.1530						
			200.05	0.7000	0.1550						
287.45	0.3069	0.1859									
280.85	0.3069	0.1533 (Continue	d next page)								
		AUXILIARY	INFORMATION								
METHOD: APPARATUS/PROCEDURE Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Bath tempera-			SOURCE AND	PURITY OF M	ATERIALS:						
			<ul> <li>(1) Purity not specified, P.O.Ch., Gliwice, Poland, was vacuum sublimed to a melting temperature of 80.25 °C.</li> <li>(2) Initial purity not specified, P.O.Ch. Gliwice, was dried over sodium metal and fractionally distilled to a final purity of 99.9+ %.</li> </ul>								
						ture was slow	ly increased		(3) Initial purity not specified, Chem-		
							mperature at	which the last		Czechoslova	kia, was used as
			ļ								
			ESTIMATED	ERROPS							
			T/Ki prec	ision <u>+</u> 0.1. .0002 (compi	•						

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(3) Dilodomethane; CH ₂ I ₂ ; [75-11-6]       personal communication with author         VARIABLES:       PREPARED BY:         Temperature and Solvent Composition       W.E. Acree, Jr.         EXPERIMENTAL VALUES ⁶ (Continued)       X1         T/K       X2 ⁽⁸⁾ X1         326.75       1.0000       0.485         319.40       1.0000       0.358         318.25       1.0000       0.212         306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.134         295.95       1.0000       0.131	(2) Cyclohexane; $C_6H_{12}$ ; [110-82-7]       Polish J. Chem. <u>1981</u> , 55, 1715-1720         (3) Dilodomethane; $CH_2I_2$ ; [75-11-6]       Personal communication with author.)         VARIABLES:       PREPARED BY:         Temperature and Solvent Composition       W.E. Acree, Jr.         EXPERIMENTAL VALUES* (Continued) $T/K$ $T/K$ $x_2^{(s)}$ 319.40       1.0000         1.0000       0.358         318.25       1.0000         306.75       1.0000         301.85       1.0000         301.85       1.0000         301.55       1.0000         0.172         301.55       1.0000         0.134	COMPONENTS :		ORIGINAL MEASUREMENTS:
(3) Diiodomethane; CH ₂ I ₂ ; [75-11-6]       (numerical values obtained through personal communication with author.         VARIABLES:       PREPARED BY:         Temperature and Solvent Composition       W.E. Acree, Jr.         EXPERIMENTAL VALUES ^a (Continued)       X1         T/K       x2 ⁽⁸⁾ x1         326.75       1.0000       0.485         319.40       1.0000       0.358         318.25       1.0000       0.346         306.75       1.0000       0.212         306.35       1.0000       0.172         301.85       1.0000       0.172         301.55       1.0000       0.134         295.50       1.0000       0.131	(3) Diiodomethane; CH ₂ I ₂ ; [75-11-6]       (numerical values obtained through personal communication with author.)         VARIABLES:       PREPARED BY:         Temperature and Solvent Composition       W.E. Acree, Jr.         EXPERIMENTAL VALUES ⁵ (Continued) $T/K$ $T/K$ $x_2^{(*)}$ 319.40       1.0000         10000       0.358         318.25       1.0000         306.35       1.0000         301.85       1.0000         301.85       1.0000         301.55       1.0000         1.0000       0.172         301.55       1.0000         1.0000       0.131	(1) Naphthalene;	C ₁₀ H ₈ ; [91-20-3]	Dománska, U.
Temperature and Solvent CompositionW.E. Acree, Jr.EXPERIMENTAL VALUES* (Continued) $T/K$ $x_2^{(s)}$ $x_1$ 326.751.00000.485319.401.00000.358318.251.00000.346306.751.00000.212306.351.00000.208301.851.00000.172301.551.00000.170295.951.00000.134295.501.00000.131	Temperature and Solvent Composition       W.E. Acree, Jr.         EXPERIMENTAL VALUES* (Continued) $x_1$ $T/K$ $x_2^{(s)}$ $x_1$ 326.75       1.0000       0.485         319.40       1.0000       0.358         318.25       1.0000       0.346         306.75       1.0000       0.212         306.35       1.0000       0.172         301.85       1.0000       0.172         301.55       1.0000       0.134         295.95       1.0000       0.131		• •	Polish J. Chem. <u>1981</u> , 55, 1715- (numerical values obtained throug personal communication with author
EXPERIMENTAL VALUES ^a (Continued) $T/K$ $x_2^{(s)}$ $x_1$ 326.75       1.0000       0.485         319.40       1.0000       0.358         318.25       1.0000       0.346         306.75       1.0000       0.212         306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.134         295.50       1.0000       0.131	EXPERIMENTAL VALUES ^a (Continued) $T/K$ $x_2^{(s)}$ $x_1$ 326.75       1.0000       0.485         319.40       1.0000       0.358         318.25       1.0000       0.346         306.75       1.0000       0.212         306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.134         295.50       1.0000       0.131	VARIABLES:		PREPARED BY:
T/K $x_2^{(s)}$ $x_1$ 326.751.00000.485319.401.00000.358318.251.00000.346306.751.00000.212306.351.00000.208301.851.00000.172301.551.00000.170295.951.00000.131	T/K $x_2^{(s)}$ $x_1$ 326.751.00000.485319.401.00000.358318.251.00000.346306.751.00000.212306.351.00000.208301.851.00000.172301.551.00000.170295.951.00000.134295.501.00000.131	Temperature and	Solvent Compositio	n W.E. Acree, Jr.
326.75       1.0000       0.485         319.40       1.0000       0.358         318.25       1.0000       0.346         306.75       1.0000       0.212         306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.134         295.50       1.0000       0.131	326.751.00000.485319.401.00000.358318.251.00000.346306.751.00000.212306.351.00000.172301.851.00000.170295.951.00000.134295.501.00000.131	EXPERIMENTAL VALU	ES ^a (Continued)	~~~ <u>~~</u>
319.40       1.0000       0.358         318.25       1.0000       0.346         306.75       1.0000       0.212         306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.131	319.401.00000.358318.251.00000.346306.751.00000.212306.351.00000.208301.851.00000.172301.551.00000.170295.951.00000.134295.501.00000.131	T/K	*2 ^(s)	<i>x</i> 1
318.25       1.0000       0.346         306.75       1.0000       0.212         306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.134         295.50       1.0000       0.131	318.25       1.0000       0.346         306.75       1.0000       0.212         306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.134         295.50       1.0000       0.131	326.75	1.0000	0.485
306.75       1.0000       0.212         306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.131	306.75       1.0000       0.212         306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.134         295.50       1.0000       0.131	319.40	1.0000	0.358
306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.134         295.50       1.0000       0.131	306.35       1.0000       0.208         301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.134         295.50       1.0000       0.131	318.25	1.0000	0.346
301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.134         295.50       1.0000       0.131	301.85       1.0000       0.172         301.55       1.0000       0.170         295.95       1.0000       0.134         295.50       1.0000       0.131	306.75	1.0000	0.212
301.551.00000.170295.951.00000.134295.501.00000.131	301.551.00000.170295.951.00000.134295.501.00000.131	306.35	1.0000	0.208
295.95       1.0000       0.134         295.50       1.0000       0.131	295.95       1.0000       0.134         295.50       1.0000       0.131	301.85	1.0000	0.172
295.50 1.0000 0.131	295.50 1.0000 0.131	301.55	1.0000	0.170
		295.95	1.0000	0.134
$a_{\rm v}$ (s), initial mole fraction of the binary columnt mixtures $v_{\rm v}$ and	^a $x_2^{(s)}$ : initial mole fraction of the binary solvent mixture; $x_1$ : mole fraction solubility of the solute.	295.50	1.0000	0.131
fraction solubility of the solute.				

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r		I
Components:		ORIGINAL MEASUREMENTS:
(1) Naphthal	ene; C ₁₀ H ₈ ; [91-20-3]	Mahieu, J.
(2) Trichlor [67-66-3	comethane; CHCl ₃ ; ]	Bull. Soc. Chim. Belgique <u>1936</u> , 45, 667-677.
(3) Diethyl	ether; C ₄ H ₁₀ O; [60-29-7]	
VARIABLES:		PREPARED BY:
T/K = 298, S	olvent Composition	W.E. Acree, Jr.
EXPERIMENTAL $t = 25$ °C	VALUES ^a	↓ Anno 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997
x ₂ (s),b	x2 ^b x1 ^b	
0.000	0.000 0.2	47
0.161	0.121 0.2	47
0.386	0.297 0.2	31
0.656	0.483 0.2	64
1.000	0.660 0.3	40
	AUXILIARY	INFORMATION
METHOD: APPAR	ATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
	perature bath, thermometer,	(1) Purity and source not given.
and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after the solvent had evaporated.		<ul><li>(2) Purity and source not given.</li><li>(3) Purity and source not given.</li></ul>
		ESTIMATED ERRORS:
-		T/K: precision $\pm 0.5$ (compiler). $x_2^{(5)}: \pm 0.001$ (compiler). $x_1: \pm 3$ % (relative error; compiler).
		•

COMPONENTS:		ORIGINAL MEASUREMENTS:	
	C.H.: [91-20-31	Mahieu, J.	
<ul> <li>(1) Naphthalene; C₁₀H₈; [91-20-3]</li> <li>(2) Carbon disulfide; CS₂; [75-15-0]</li> </ul>		Bull. Soc. Chim. Belgique <u>1936</u> , 45,	
	$r; C_{L}H_{10}O; [60-29-7]$	667-677.	
(0) 02001/2 00110			
VARIABLES:		PREPARED BY:	
T/K = 298, Solve	nt Composition	W.E. Acree, Jr.	
EXPERIMENTAL VALU	ES ⁸		
x ₂ (\$),b	x2 ^b x1 ^b		
0.000	0.000 0.2		
0.231	0.162 0.2	298	
0.455	0.311 0.3	317	
0.728	0.499 0.3		
1.000	0.714 0.2		
	AUXILIAR	( INFORMATION	
METHOD: APPARATUS	/PROCEDURE	SOURCE AND PURITY OF MATERIALS:	
	ture bath, thermometer,	(1) Purity and source not given.	
and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after the solvent had evaporated.		<ul><li>(2) Purity and source not given.</li><li>(3) Purity and source not given.</li></ul>	
		· · · · · · · · · · · · · · · · · · ·	
		ESTIMATED ERRORS: $T/K$ : precision $\pm$ 0.5 (compiler). $x_{2}^{(5)}$ : $\pm$ 0.001 (compiler). $x_{1}^{2}$ : $\pm$ 3 % (relative error; compiler).	

COMPONENTS: (1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		ORIGINAL MEASUREMENTS:		
		Perez-Tejeda	Perez-Tejeda, P.; Yanes, C.; Maestre, A.	
(2) Methanol; CH	40; [67-56-1]	J. Chem. Eng	. Data <u>1990</u> , 35, 244-246.	
(3) Water; H ₂ O; [7732-18-5]				
VARIABLES:		PREPARED BY:		
T/K = 278, 283, and 308, Sol	288, 293, 298, 303 vent composition	W.E. Acree,	W.E. Acree, Jr.	
EXPERIMENTAL VALU		= 15.0 °C		
μ ₂ (s)	c,	- 13.0 C π ₂ ^(s)	c ₁	
0.0000	0.000135	0.0000	0.000190	
1.3193	0.000162	1.3193	0.000236	
2.5165	0.000185	2.5165	0.000282	
3.8190	0.000212	3.8190	0.000328	
4.9828	0.000263	4.9828	0.000426	
6.2146	0.000324	6.2146	0.000546	
$t = 10.0  ^{\circ}C$	t	= 20.0 °C		
0.0000	0.000158	0.0000	0.000224	
1.3193	0.000193	1.3193	0.000296	
2.5165	0.000220	2.5165	0.000336	
3.8190	0.000268	3.8190	0.000392	
4.9828	0.000323	4.9828	0.000525	
6.2146	0.000417	6.2146	0.000668	
	(Continue	ed on next page)		
		Y INFORMATION	<u></u>	
METHOD: APPARATUS	/PROCEDURE	SOURCE AND PUT	RITY OF MATERIALS:	
Constant temperature bath, precision thermometer, ultraviolet/visible spectro- photometer, and an agitator.		Corporat	99 %, Fluka Chemical ion, Ronkonkoma, New York, rystallized from ethanol.	
weight. Solid n were placed in s	ixtures were prepared by aphthalene and solvent toppered pyrex flasks quilibrate at a constant		grade, 99.7 %, E. Merck, t, Germany, was used as	
temperature for 50 minutes. Solutions were stirred at 25,000 rpm for 8 minutes. After equilibrium was obtained aliquots of saturated solutions were removed and quantitatively diluted for spectrophoto- metric analysis at 275 nm.		(3) Purity and source not given, was distilled twice using an all-glass apparatus.		
		ESTIMATED ERR	ORS:	
		T/K: precisi $m_2^{(s)}: \pm 0.000$	on ± 0.05. 01 (compiler). elative error, compiler).	

Components:		ORIGINAL MEAS			
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3] (2) Methanol; CH ₄ O; [67-56-1] (3) Water; H ₂ O; [7732-18-5]		Perez-Tejeda	Perez-Tejeda, P.; Yanes, C.; Maestre, A.		
		J. Chem. Eng	. Data <u>1990</u> , 35, 244-246.		
VARIABLES:	/ARIABLES:		·····		
T/K = 278, 283, 288, 293, 298, 303 and 308, Solvent composition		W.E. Acree,	Jr.		
EXPERIMENTAL VALU	JES ^a (Continued)	·····			
t = 25.0 °C		t = 35.0 °C			
m2 ^(s)	<i>c</i> 1	m2 ^(s)	c ₁ .		
0.0000	0.000263	0.0000	0.000371		
1.3193	0.000344	1.3193	0.000462		
2.5165	0.000398	2.5165	0.000547		
3.8190	0.000495	3.8190	0.000697		
4.9828	0.000631	4.9828	0.000871		
6.2146	0.000841	6.2146	0.001306		
t = 30.0 °C					
0.0000	0.000324				
1.3193	0.000407				
2.5165	0.000492				
3.8190	0.000588				
4.9828	0.000785				
6.2146	0.001085				

^a  $m_2^{(s)}$ : initial molal (mol kg⁻¹) composition of the binary solvent mixture;  $c_1$  is the molar solubility (mol dm⁻³) of the solute.

Components:	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Dickhut, R.M.; Andren, A.W.; Armstrong,
(2) Methanol; CH ₄ O; [67-56-1]	D.E.
(3) Water; H ₂ O; [7732-18-5]	J. Chem. Eng. Data <u>1989</u> , 34, 438-443.
VARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
EIPERIMENTAL VALUES ⁶ t = 25 °C	
φ ₂ ^(s) × ₁	
0.00 4.1	1 × 10 ⁻⁶
0.01 4.2	8 × 10 ⁻⁶
0.03 4.9	4 x 10 ⁻⁶
0.05 5.2	9 x 10 ⁻⁶
0.10 6.99	6 x 10 ⁻⁶
1.00 2.3	5 x 10 ⁻²
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and an ultraviolet spectrophotometer.	(1) Scintillation grade, 99 %, source not given.
Binary solvent mixtures were prepared by volume. Excess solute and solvent placed in closed glass bottles, mixed at room temperature for 24 hours on magnetic stirrers and temperature equilibrated for an additional 24 hours in a constant temperature water bath. After equilibrium was obtained aliquots of saturated solu- tions were removed and diluted quantita- tively for spectrophotometric analysis at 254 nm.	<ul> <li>(2) 99.9 %, source not given.</li> <li>(3) Purity and source not given, was pretreated by distillation and passage through a Milli-Q water purification system affixed with a 0.22 μm Organex- Q filter.</li> </ul>
- • •	ESTIMATED ERRORS: T/K: precision $\pm$ 0.5 (compiler). $\phi_2^{(5)}$ : $\pm$ 0.005 (compiler). $x_1$ : $\pm$ 5 % (relative error; compiler).
	<pre>x₁: <u>+</u> &gt; % (relative error; compiler).</pre>

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Dickhut, R.M.; Andren, A.W.; Armstrong, D.E.
(2) Ethanol; C ₂ H ₆ O; [64-17-5]	J. Chem. Eng. Data <u>1989</u> , 34, 438-443.
(3) Water; H ₂ O; [7732-18-5]	0. Chem. Eng. Data <u>1707</u> , 54, 400 443.
VARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 25 \ ^{\circ}C$	
φ ₂ ^(s) x ₁	
0.00 4.	11 x 10 ⁻⁶
0.01 4.	53 x 10 ⁻⁶
0.03 4.1	30 x 10 ⁻⁶
0.05 5.1	30 x 10 ⁻⁶
0.10 8.0	00 x 10 ⁻⁶
0.25 . 3.0	$102 \times 10^{-5}$
0.50 7.3	$38 \times 10^{-4}$
0.75 5.	66 x 10 ⁻³
	98 x 10 ⁻²
1.00 3.9 ^a $\phi_2^{(s)}$ : initial volume fraction of bina fraction solubility of the solute.	
^a $\phi_{\gamma}^{(s)}$ : initial volume fraction of bina	
^a $\phi_2^{(s)}$ : initial volume fraction of bina fraction solubility of the solute.	
<pre>^a \$\phi_2\$(\$): initial volume fraction of bina fraction solubility of the solute.</pre>	ry solvent mixture; x ₁ : mole
^a φ ₂ ⁽⁵⁾ : initial volume fraction of bina fraction solubility of the solute.           AUXILIAR:           METHOD: APPARATUS/PROCEDURE           Constant temperature bath, thermometer,	ry solvent mixture; x ₁ : mole INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Scintillation grade, 99 %, source
^B φ ₂ ^(S) : initial volume fraction of bina fraction solubility of the solute.           AUXILIAR           METHOD: APPARATUS/PROCEDURE           Constant temperature bath, thermometer, and an ultraviolet spectrophotometer.	<pre>ry solvent mixture; x₁: mole * INFORMATION SOURCE AND PURITY OF MATERIALS:  (1) Scintillation grade, 99 %, source     not given.</pre>
^a φ ₂ ⁽⁵⁾ : initial volume fraction of bina fraction solubility of the solute.           AUXILIAR:           METHOD: APPARATUS/PROCEDURE           Constant temperature bath, thermometer,	ry solvent mixture; x ₁ : mole INFORMATION SOURCE AND PURITY OF MATERIALS: (1) Scintillation grade, 99 %, source
<ul> <li>^a φ₂⁽⁵⁾: initial volume fraction of bina fraction solubility of the solute.</li> <li>AUXILIAR:</li> <li>METHOD: APPARATUS/PROCEDURE</li> <li>Constant temperature bath, thermometer, and an ultraviolet spectrophotometer.</li> <li>Binary solvent mixtures were prepared by volume. Excess solute and solvent placed in closed glass bottles, mixed at room temperature for 24 hours on magnetic stirrers and temperature equilibrated for an additional 24 hours in a constant temperature water bath. After equilibrium was obtained aliquots of saturated solutions were removed and diluted quantitatively for spectrophotometric analysis</li> </ul>	<pre>ry solvent mixture; x₁: mole : INFORMATION SOURCE AND PURITY OF MATERIALS:  (1) Scintillation grade, 99 %, source     not given.  (2) 99.9+ %, source not given.  (3) Purity and source not given.  (3) Purity and source not given, was     pretreated by distillation and passag     through a Milli-Q water purification     system affixed with a 0.22 µm Organex </pre>

COMPONENTS: (1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		ORIGINAL MEASUREMENTS: Perez-Tejeda, P.; Yanes, C.; Maestre, A.		
(3) Water; H ₂ O;	[7732-18-5]			
ARIABLES:				
	288, 293, 298, 303 vent composition			
XPERIMENTAL VALU	ES ^a t =	15.0 °C		
m ₂ (s)	c,	m ₂ ^(s)	C1	
<u>-</u> 0.0000	0.000135	0.0000	0.000190	
0.9216	0.000165	0.9216	0.000263	
1.3455	0.000199	1.3455	0.000322	
1.8501	0.000237	1.8501	0.000370	
2.3816	0.000305	2.3816	0.000531	
2.9590	0.000457	2.9590	0.000741	
$t = 10.0 ^{\circ}C$	£ =	20.0 °c		
0.0000	0.000158	0.0000	0.000224	
0.9216	0.000204	0.9216	0.000316	
1.3455	0.000243	1.3455	0.000389	
1.8501	0.000313	1.8501	0.000484	
2.3816	0.000421	2.3816	0.000662	
2.9590	0.000603	2.9590	0.000832	
	(Continue	d on next page)		
	AUXILIARY	INFORMATION		
METHOD: APPARATUS/PROCEDURE		SOURCE AND PUI	RITY OF MATERIALS:	
	ture bath, precision raviolet/visible spectro- an agitator.	<ul> <li>(1) puriss, 99 %, Fluka Chemical Corporation, Ronkonkoma, New York, USA, recrystallized from ethanol.</li> </ul>		
Binary solvent mixtures were prepared by weight. Solid naphthalene and solvent were placed in stoppered pyrex flasks and allowed to equilibrate at a constant temperature for 50 minutes. Solutions were stirred at 25,000 rpm for 8 minutes. After equilibrium was obtained aliquots of saturated solutions were removed and quantitatively diluted for spectrophoto- metric analysis at 275 nm.		<ul> <li>(2) Analysis grade, 99.7 %, E. Merck, Darmstadt, Germany, was used as received.</li> <li>(3) Purity and source not given, was distilled twice using an all-glass apparatus.</li> </ul>		
		ESTIMATED ERR T/K: precisin $m_2^{(s)}$ : $\pm 0.000$ $C_1$ : $\pm 2$ % (re		

COMPONENTS: (1) Naphthalene; C ₁₀ H ₈ ; [91-20-3] (2) 1-Propanol; C ₃ H ₈ O; [71-23-8]		ORIGINAL MEASU	ORIGINAL MEASUREMENTS: Perez-Tejeda, P.; Yanes, C.; Maestre, A. J. Chem. Eng. Data <u>1990</u> , 35, 244-246.		
		Perez-Tejeda,			
		J. Chem. Eng.			
(3) Water; H ₂ O; [	7732-18-5]				
VARIABLES:		PREPARED BY:			
<pre>T/K = 278, 283, 288, 293, 298, 303 and 308, Solvent composition</pre>		W.E. Acree, S	Jr.		
EXPERIMENTAL VALUE	S ^a (Continued)				
$t = 25.0  ^{\circ}C$		t = 35.0 °C			
<i>m</i> 2 ^(s)	c ₁	<i>m</i> 2 ^(s)	c ₁		
0.0000	0.000263	0.0000	0.000371		
0.9216	0.000398	0.9216	0.000582		
1.3455	0.000477	1.3455	0.000702		
1.8501	0.000616	1.8501	0.000916		
2.3816	0.000828	2.3816	0.001265		
2.9590	0.001202	2.9590	0.001862		
t = 30.0 °C		•			
0.0000	0.000324				
0.9216	0.000497				
1.3455	0.000596				
1.8501	0.000749				
2.3816	0.001036				
2.9590	0.001480				

^a  $m_2^{(s)}$ : initial molal (mol kg⁻¹) composition of the binary solvent mixture;  $c_1$  is the molar solubility (mol dm⁻³) of the solute.

<b>r</b>	I
Components:	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Dickhut, R.M.; Andren, A.W.; Armstrong, D.E.
(2) 1-Propanol; C ₃ H ₈ O; [71-23-8]	J.E. J. Chem. Eng. Data <u>1989</u> , 34, 438-443.
(3) Water; H ₂ O; [7732-18-5]	5. Chem, 2ng, 5404 <u>2505</u> , 517 155 1151
VARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
EIPERIMENTAL VALUES ^a t = 25 °C	
φ ₂ ^(s) x ₁	
0.00 4.1	1 × 10 ⁻⁶
0.01 4.5	7 × 10 ⁻⁶
0.03 5.44	4 x 10 ⁻⁶
0.05 6.70	5 x 10 ⁻⁶
	3 × 10 ⁻⁵
1.00 5.09	5 x 10 ⁻²
· ·	
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and an ultraviolet spectrophotometer.	SOURCE AND PURITY OF MATERIALS: (1) Scintillation grade; 99 %, source not given.
Binary solvent mixtures were prepared by volume. Excess solute and solvent placed in closed glass bottles, mixed at room temperature for 24 hours on magnetic stirrers and temperature equilibrated for an additional 24 hours in a constant temperature water bath. After equilibrium was obtained aliquots of saturated solu- tions were removed and diluted quantita- tively for spectrophotometric analysis at 254 nm.	<ul> <li>(2) 99.5 %, source not given.</li> <li>(3) Purity and source not given, was pretreated by distillation and passage through a Milli-Q water purification system affixed with a 0.22 μm Organex- Q filter.</li> </ul>
	ESTIMATED ERRORS: $T/K$ : precision $\pm$ 0.5 (compiler). $\phi_2^{(s)}$ : $\pm$ 0.005 (compiler). $x_1$ : $\pm$ 5 % (relative error; compiler).

COMPONENTS:		ORIGINAL MEASUREMENTS:		
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		Perez-Tejeda, P.; Yanes, C.; Maestre, A.		
(2) 1-Butanol; C ₄ H ₁₀ O; [71-36-3]		J. Chem. Eng. Data <u>1990</u> , 35, 244-246.		
(3) Water; H ₂ O;	[7732-18-5]			
VARIABLES:		PREPARED BY:		
T/K = 283, 288,	293, 298, 303 and 308,	W.E. Acree,	Jr.	
Solvent comp				
EXPERIMENTAL VALU t = 10.0 °C		25.0 °c		
<i>m</i> 2 ^(s)	<i>c</i> 1	m2 ^(s)	C1	
0.0000	0.000158	0.0000	0.000263	
0.1631	0.000164	0.1631	0.000295	
0.3478	0.000174	0.3478	0.000345	
0.5507	0.000219	0.5507	0.000403	
0.7166	0.000245	0.7166	0.000447	
$t = 15.0 ^{\circ}C$	+	30.0 °C		
0.0000	0.000190	0.0000	0.000324	
0.1631	0.000206	0.1631	0.000365	
0.3478	0.000224	0.3478	0.000415	
0.5507	0.000285	0.5507	0.000472	
0.7166	0.000301	0.7166	0.000532	
$t = 20.0 ^{\circ}C$		35.0 °C	0.00032	
m ₂ ^(s)	с ₁	m ₂ (s)	<i>c</i> 1	
0.0000	0.000224	0.0000	0.000371	
0.1631	0.000244	0.1631	0.000426	
0.3478	0.000279	0.3478	0.000503	
0.5507	0.000345	0.5507	0.000571	
0.7166	0.000353	0.7166	0.000612	
^a m ₂ ^(s) : initi c ₁ is the mol	al molal (mol kg ⁻¹ ) composi lar solubility (mol dm ⁻³ ) of	tion of the bination the solute.	ary solvent mixture;	
	AUXILIARY	INFORMATION		
METHOD: APPARATUS	/PROCEDURE	SOURCE AND PURITY OF MATERIALS:		
thermometer, ult	Constant temperature bath, precision thermometer, ultraviolet/visible spectro- photometer, and an agitator.		<ul> <li>(1) puriss, 99 %, Fluka Chemical Corporation, Ronkonkoma, New York, USA, recrystallized from ethanol.</li> </ul>	
weight. Solid na	ixtures were prepared by aphthalene and solvent toppered pyrex flasks	(2) Analysis grade, 99.7 %, E. Merck, Darmstadt, Germany, was used as received.		
and allowed to ex- temperature for ! were stirred at 2 After equilibrium of saturated solu quantitatively di	were placed in stoppered pyrex flasks and allowed to equilibrate at a constant temperature for 50 minutes. Solutions were stirred at 25,000 rpm for 8 minutes. After equilibrium was obtained aliquots of saturated solutions were removed and quantitatively diluted for spectrophoto- metric analysis at 275 nm.		(3) Purity and source not given, was distilled twice using an all-glass apparatus.	
		ESTIMATED ERRO	DRS:	
		T/K: precision $\pm$ 0.05. $m_2^{(6)}$ : $\pm$ 0.0001 (compiler). $c_1$ : $\pm$ 2 % (relative error, compiler).		

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Dickhut, R.M.; Andren, A.W.; Armstrong, D.E.
(2) 1-Butanol; C ₄ H ₁₀ O; [71-36-3]	J.E. J. Chem. Eng. Data <u>1989</u> , 34, 438-443.
(3) Water; H ₂ O; [7732-18-5]	5. Chem. Eng. Data <u>1909</u> , 51, 450 446.
VARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25 °C	
φ ₂ ⁽⁶⁾ × ₁	
0.00 4.1	1 × 10 ⁻⁶
0.01 4.55	5 x 10 ⁻⁶
0.03 6.1	3 × 10 ⁻⁶
0.05 6.3	7 x 10 ⁻⁶
0.07 9.50	5 x 10 ⁻⁶
1.00 6.60	5 x 10 ⁻²
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and an ultraviolet spectrophotometer. Binary solvent mixtures were prepared by volume. Excess solute and solvent placed	<ol> <li>Scintillation grade, 99 %, source not given.</li> <li>99.9 %, source not given.</li> </ol>
in closed glass bottles, mixed at room temperature for 24 hours on magnetic stirrers and temperature equilibrated for an additional 24 hours in a constant temperature water bath. After equilibrium was obtained aliguots of saturated solu- tions were removed and diluted quantita- tively for spectrophotometric analysis at 254 nm.	(3) Purity and source not given, was pretreated by distillation and passage through a Milli-Q water purification system affixed with a 0.22 μm Organex- Q filter.
· · · ;	ESTIMATED ERRORS:
, ,	T/K: precision $\pm$ 0.5 (compiler). $\phi_2^{(s)}$ : $\pm$ 0.005 (compiler). $x_1$ : $\pm$ 5 % (relative error; compiler).

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Dickhut, R.M.; Andren, A.W.; Armstrong,
(2) 1-Pentanol; C ₅ H ₁₂ O; [71-41-0]	D.E.
(3) Water; H ₂ O; [7732-18-5]	J. Chem. Eng. Data <u>1989</u> , 34, 438-443.
VARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 25 °C	↓ · · · · · · · · · · · · · · · · · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · · · · · · _ = \cdots · _ ~ _ · _ · _ / _ / _ / _ / _ / _ / _ / _ /
φ ₂ ^(s) x ₁	
0.00 4.1	1 × 10 ⁻⁶
0.005 4.1	6 x 10 ⁻⁶
0.01 4.5	2 x 10 ⁻⁶
0.02 5.6	0 x 10 ⁻⁶
1.00 8.1	1 × 10 ⁻²
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer,	(1) Scintillation grade, 99 %, source
and an ultraviolet spectrophotometer. Binary solvent mixtures were prepared by volume. Excess solute and solvent placed in closed glass bottles, mixed at room temperature for 24 hours on magnetic stirrers and temperature equilibrated for an additional 24 hours in a constant temperature water bath. After equilibrium was obtained aliquots of saturated solu- tions were removed and diluted quantita- tively for spectrophotometric analysis at 254 nm.	<ul> <li>(1) not given.</li> <li>(2) 99 %, source not given.</li> <li>(3) Purity and source not given, was pretreated by distillation and passage through a Milli-Q water purification system affixed with a 0.22 μm Organex- Q filter.</li> </ul>
	ESTIMATED ERRORS:
	T/K: precision $\pm$ 0.5 (compiler). $\phi_2^{(3)}$ : $\pm$ 0.005 (compiler). $x_1$ : $\pm$ 5 % (relative error; compiler).

Components:		ORIGINAL MEASUREMENTS:	
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		Perez-Tejeda, P.; Yanes, C.; Maestre, A.	
(2) 2-Methyl-2-propanol; C ₄ H ₁₀ O; [75-65-0]		J. Chem. Eng	. Data <u>1990</u> , 35, 244-246.
(3) Water; H ₂ O; [	7732-18-5]		
VARIABLES:		PREPARED BY:	
<pre>T/K = 278, 283, 288, 293, 298, 303 and 308, Solvent composition</pre>		W.E. Acree,	Jr.
EXPERIMENTAL VALUE t = 5.0 °C		15.0 °C	
m2 ^(s)	C1	m2 ^(s)	C1
0.0000	0.000135	0.0000	0.000190
0.3109	0.000151	0.3109	0.000224
0.7036	0.000180	0.7036	0.000262
1.0122	0.000193	1.0122	0.000295
1.3549	0.000224	1.3549	0.000331
1.6883	0.000250	1.6883	0.000380
t = 10.0 °C	t =	20.0 °C	
0.0000	0.000158	0.0000	0.000224
0.3109	0.000182	0.3109	0.000263
0.7036	0.000215	0.7036	0.000297
1.0122	0.000233	1.0122	0.000338
1.3549	0.000269	1.3549	0.000379
1.6883	0.000302	1.6883	0.000447
	(Continued	i on next page)	
	AUXILIARY	INFORMATION	
ETHOD: APPARATUS/	PROCEDURE	SOURCE AND PUT	RITY OF MATERIALS:
Constant temperat	ure bath, precision aviolet/visible spectro-	(1) puriss, 99 %, Fluka Chemical Corporation, Ronkonkoma, New York, USA, recrystallized from ethanol.	
Binary solvent mixtures were prepared by weight. Solid naphthalene and solvent were placed in stoppered pyrex flasks and allowed to equilibrate at a constant temperature for 50 minutes. Solutions were stirred at 25,000 rpm for 8 minutes. After equilibrium was obtained aliquots of saturated solutions were removed and quantitatively diluted for spectrophoto- metric analysis at 275 nm.		<ul> <li>(2) Analysis grade, 99.5 %, E. Merck, Darmstadt, Germany, was used as received.</li> <li>(3) Purity and source not given, was distilled twice using an all-glass apparatus.</li> </ul>	
		ESTIMATED ERR T/K: precisi $m_2^{(s)}$ : $\pm 0.00$ $c_1$ : $\pm 2$ % (ref	

Components:		ORIGINAL MEAS	ORIGINAL MEASUREMENTS:		
(1) Naphthalene,	(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		, P.; Yanes, C.; Maestre, A.		
(2) 2-Methyl-2-propanol; C ₄ H ₁₀ O; [75-65-0]		J. Chem. Eng	. Data <u>1990</u> , 35, 244-246.		
(3) Water; H ₂ O; [7732-18-5]					
VARIABLES:		PREPARED BY:			
<pre>T/K = 278, 283, 288, 293, 298, 303 and 308, Solvent composition</pre>		W.E. Acree,	W.E. Acree, Jr.		
EXPERIMENTAL VAL	JES ^a (Continued)		<u></u>		
t = 25.0 °C		$t = 35.0 ^{\circ}C$			
m2 ^(s)	° ₁	<i>m</i> 2 ^(s)	C,		
0.0000	0.000263	0.0000	0.000371		
0.3109	0.000316	0.3109	0.000437		
0.7036	0.000349	0.7036	0.000498		
1.0122	0.000407	1.0122	0.000563		
1.3549	0.000467	1.3549	0.000667		
1.6883	0.000524	1.6883	0.000763		
t = 30.0 °C					
0.0000	0.000324				
0.3109	0.000372				
0.7036	0.000438				
1.0122	0.000495				
1.3549	0.000567				
	0.000663				

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]	Dickhut, R.M.; Andren, A.W.; Armstrong, D.E.
(2) 2-Propanone; C ₃ H ₆ O; [67-64-1]	J. Chem. Eng. Data <u>1989</u> , 34, 438-443.
(3) Water; H ₂ O; [7732-18-5]	
VARIABLES:	PREPARED BY:
T/K = 298, Solvent Composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 25  ^{\circ}C$	[
φ ₂ ^(s) × ₁	
0.00 4.1	1 × 10 ⁻⁶
0.01 4.50	6 × 10 ⁻⁶
0.03 6.64	4 × 10 ⁻⁶
0.05 8.14	4 × 10 ⁻⁶
0.10 1.5	3 × 10 ⁻⁵
AUXILIARY	
METHOD: APPARATUS/PROCEDURE	INFORMATION
ALINOD. AFFARAIOB/FROCEDORE	INFORMATION SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, thermometer, and liquid chromatograph with uv detection.	r
Constant temperature bath, thermometer,	SOURCE AND PURITY OF MATERIALS: (1) Scintillation grade, 99 %, source

ORIGINAL MEASUREMENTS: COMPONENTS: (1) Naphthalene; C10H8; [91-20-3] Dickhut, R.M.; Andren, A.W.; Armstrong, D.E. (2) 2-Butanone; C₄H₈O; [78-93-3] J. Chem. Eng. Data 1989, 34, 438-443. (3) Water; H₂O; [7732-18-5] VARIABLES: PREPARED BY: T/K = 298, Solvent Composition W.E. Acree, Jr. EXPERIMENTAL VALUES^a t = 25 °C $\phi_2^{(s)}$  $\boldsymbol{x}_1$  $4.11 \times 10^{-6}$ 0.00 0.01  $4.65 \times 10^{-6}$ 0.03 6.78 x 10⁻⁶  $1.09 \times 10^{-5}$ 0.05 0.10  $2.15 \times 10^{-5}$ ^a  $\phi_2^{(s)}$ : initial volume fraction of binary solvent mixture; x₁: mole fraction solubility of the solute. AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE SOURCE AND PURITY OF MATERIALS: Constant temperature bath, thermometer, and liquid chromatograph with uv detection. (1) Scintillation grade, 99 %, source not given. Binary solvent mixtures were prepared by volume. Excess solute and solvent placed (2) 99.7 %, source not given. (3) Purity and source not given, was pretreated by distillation and passage through a Milli-Q water purification system affixed with a 0.22 µm Organexin closed glass bottles, mixed at room temperature for 24 hours on magnetic stirrers and temperature equilibrated for an additional 24 hours in a constant temperature water bath. After equilibrium was obtained aliquots of saturated solu-tions were removed and the absorbances Q filter. of a constant µl volume was measured at 254 nm by use of Waters HPLC, with spheri-sorb S-5-O-DS and 50/50 acetonitrile-water mixture (by volume) serving as the stationary and mobile phases, respectively. ESTIMATED ERRORS: T/K: precision  $\pm$  0.5 (compiler).  $\phi_2^{($)}$ :  $\pm$  0.005 (compiler).  $x_1$ :  $\pm$  5 % (relative error; compiler).

Components :		ORIGINAL MEASUREMENTS:		
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		Perez-Tejeda, P.;	Yanes, C.; Maestre, A.	
(2) Dimethyl sulfoxide; C ₂ H ₆ OS; [67-88-5]		Thermochim. Acta	<u>1990</u> , <i>157</i> , 105-112.	
(3) Water; H ₂ O; [	7732-18-5]			
VARIABLES: T/K = 278, 283, 288, 293, 298, 303 and 308, Solvent composition		PREPARED BY:		
		W.E. Acree, Jr.		
EXPERIMENTAL VALUE $t = 5.0 ^{\circ}C$		15.0 °C	<u> </u>	
m ₂ (s)	c,	<i>m₂</i> (s)	c,	
0.0000	0.000135	0.0000	0.000191	
0.6556	0.000162	0.6556	0.000263	
1.3600	0.000224	1.3600	0.000347	
2.2120	0.000302	2.2120	0.000490	
2.9450	0.000398	2.9450	0.000589	
4.0890	0.000525	4.0890	0.000832	
$t = 10.0  ^{\circ}C$	t =	• 20.0 °C		
0.0000	0.000158	0.0000	0.000224	
0.6556	0.000214	0.6556	0.000324	
1.3600	0.000282	1.3600	0.000417	
2.2120	0.000380	2.2120	0.000575	
2.9450	0.000479	2.9450	0.000741	
4.0890	0.000661	4.0890	0.00100	
	(Continue	d on next page)		
<u></u>	AUXILIARY	INFORMATION		
ETHOD: APPARATUS	PROCEDURE	SOURCE AND PURITY	OF MATERIALS:	
	ture bath, precision raviolet/visible spectro- an agitator.	<ul> <li>(1) puriss, 99 %, Fluka Chemical Corporation, Ronkonkoma, New York, USA, recrystallized from ethanol.</li> </ul>		
Binary solvent mixtures were prepared by weight. Solid naphthalene and solvent were placed in stoppered pyrex flasks and allowed to equilibrate at a constant temperature for 50 minutes. Solutions were stirred at 25,000 rpm for 8 minutes. After equilibrium was obtained aliguots of saturated solutions were removed and quantitatively diluted for spectrophoto- metric analysis at 275 nm.		<ul> <li>(2) p.a., E. Merck, Darmstadt, Germany, was used as received.</li> <li>(3) Purity and source not given, was distilled twice using an all-glass apparatus.</li> </ul>		
		ESTIMATED ERRORS: $T/K$ : precision $\pm$ $m_2^{(s)}$ : $\pm$ 0.0001 (c c.i $\pm$ 2 % (relati	0.05. ompiler). ve error, compiler).	

	onents:		ORIGINAL MEASUREME	NTS:
(1)	Naphthalene; C ₁₀ H	8; [91-20-3]	Perez-Tejeda, P.;	Yanes, C.; Maestre, A.
(2)	Dimethyl sulfoxid [67-88-5]	de; C ₂ H ₆ OS;	Thermochim. Acta	<u>1990</u> , <i>15</i> 7, 105-112.
	Water; H ₂ O; [7732			
VARI	ABLES:		PREPARED BY:	
T/K	= 278, 283, 288, and 308, Solvent	293, 298, 303 composition	W.E. Acree, Jr.	
EXPEI	RIMENTAL VALUES ⁸	(Continued)		
t =	25.0 °C	t	= 35.0 °c	
	^m 2 ^(s)	°1	<i>m</i> 2 ^(s)	c ₁ .
	0.0000	0.000263	0.0000	0.000371
	0.6556	0.000355	0.6556	0.000562
	1.3600	0.000479	1.3600	0.000661
	2.2120	0.000676	2.2120	0.00105
	2.9450	0.000891	2.9450	0.00132
	4.0890	0.00123	4.0890	0.00178
t =	30.0 °c			
	0.0000	0.000324		
	0.6556	0.000468		
	1.3600	0.000603		
	2.2120	0.000851		
	2.9450	0.00112		
	4.0890	0.00148		
	c ₁ is the molar s	olubility (mol dm ⁻³ ) (	sition of the binary s of the solute.	ertent mixture;
		• <i>.</i>		

Components :		ORIGINAL MEASUREMENTS:	
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		Perez-Tejeda, P.; Yanes, C.; Maestre, A.	
<pre>(2) N, N-Dimethylformamide; C₃H₇NO; [68-12-2]</pre>		Thermochim. Acta	<u>1990</u> , <i>157</i> , 105-112.
(3) Water; H ₂ O;	(7732-18-5)		
	·····		
VARIABLES: <i>T/K</i> = 278, 283, 288, 293, 298, 303 and 308, Solvent composition		PREPARED BY: W.E. Acree, Jr.	
<i>m</i> 2 ^(s)	c,	m ₂ (s)	c ₁
0.0000	0.000135	0.0000	0.000191
0.8371	0.000309	0.8371	0.000398
1.5621	0.000501	1.5621	0.000724
2.4262	0.000813	2.4262	0.00117
3.3996	0.00138	3.3996	0.00195
4.5362	0.00199	4.5362	0.00309
$t = 10.0  ^{\circ}C$	t =	20.0 °C	
0.0000	0.000158	0.0000	0.000224
0.8371	0.000355	0.8371	0.000513
1.5621	0.000603	1.5621	0.000891
2.4262	0.00100	2.4262	0.00148
3.3996	0.00162	3.3996	0.00240
4.5362	0.00245	4.5362	0.00380
	(Continue	d on next page)	
	AUXILIARY	INFORMATION	
		T	
METHOD: APPARATUS		SOURCE AND PURITY OF MATERIALS:	
	ture bath, precision raviolet/visible spectro- an agitator.	<ul> <li>(1) puriss, 99 %, Fluka Chemical Corporation, Ronkonkoma, New York, USA, recrystallized from ethanol.</li> </ul>	
Binary solvent mixtures were prepared by weight. Solid naphthalene and solvent were placed in stoppered pyrex flasks and allowed to equilibrate at a constant temperature for 50 minutes. Solutions were stirred at 25,000 rpm for 8 minutes. After equilibrium was obtained aliquots of saturated solutions were removed and quantitatively diluted for spectrophoto- metric analysis at 275 nm.		<ul> <li>(2) p.a., E. Merck, Darmstadt, Germany, was used as received.</li> <li>(3) Purity and source not given, was</li> </ul>	
		distilled twice using an all-glass apparatus.	
		ESTIMATED ERRORS:	
		$T/K: \text{ precision } \pm m_2^{(s)}: \pm 0.0001 \text{ (c} \ c_1: \pm 2 \text{ $ (relati)}$	0.05. ompiler). ve error, compiler).

c-Tejeda, P.; Yanes, C.; Maestre, A. mochim. Acta 1990, 157, 105-112. RED BY: Acree, Jr. 000 0.000371 71 0.000871 21 0.00158 62 0.00263 96 0.00427
c1 $c_1$ 000       0.000371         71       0.000871         21       0.00158         62       0.00263
Acree, Jr. c ₁ 000 0.000371 71 0.000871 21 0.00158 62 0.00263
Acree, Jr. c ₁ 000 0.000371 71 0.000871 21 0.00158 62 0.00263
C1         1000       0.000371         171       0.000871         121       0.00158         62       0.00263
c1         000       0.000371         71       0.000871         21       0.00158         62       0.00263
c1         000       0.000371         71       0.000871         21       0.00158         62       0.00263
000     0.000371       171     0.000871       121     0.00158       62     0.00263
71       0.000871         21       0.00158         62       0.00263
0.00158 0.00263
62 0.00263
96 0.00427
62 0.00692

Components:		ORIGINAL MEASUREMENTS:	
(1) Naphthalene; C ₁₀ H ₈ ; [91-20-3]		Perez-Tejeda, P.; Yanes, C.; Maestre, A.	
(2) Acetonitrile	; C ₂ H ₃ N; [75-05-8]	Thermochim. Acta	<u>1990</u> , <i>157</i> , 105-112.
(3) Water; H ₂ O;	[7732-18-5]		
VARIABLES:		PREPARED BY:	<u></u>
	288, 293, 298, 303 vent composition	W.E. Acree, Jr.	
EXPERIMENTAL VALU		15.0 °C	· · · · · · · · · · · · · · · · · · ·
m ₂ ^(s)	с,	$m_2^{(s)}$	c,
"2 0.0000	0.000135	"2 0.0000	°1 0.000191
0.6465	0.000126	0.6465	0.000219
1.4049	0.000191	1.4049	0.000275
2.7077	0.000282	2.7077	0.000512
4.3037	0.000562	4.3037	0.000871
6.1142	0.00129	6.1142	0.00166
$t = 10.0 ^{\circ}C$		20.0 °C	0.000004
0.0000	0.000158	0.0000	0.000224
0.6465	0.000162	0.6465	0.000282
1.4049	0.000229	1.4049	0.000347
2.7077	0.000380	2.7077	0.000562
4.3037 6.1142	0.000708	4.3037 6.1142	0.00107
0.1142			0.00224
	(concinde	d on next page)	
	AUXILIARY	INFORMATION	
ETHOD: APPARATUS	/PROCEDURE	SOURCE AND PURITY	OF MATERIALS:
	ture bath, precision raviolet/visible spectro- an agitator.	(1) puriss, 99 %, Fluka Chemical Corporation, Ronkonkoma, New York, USA, recrystallized from ethanol.	
Binary solvent mixtures were prepared by weight. Solid naphthalene and solvent were placed in stoppered pyrex flasks and allowed to equilibrate at a constant temperature for 50 minutes. Solutions were stirred at 25,000 rpm for 8 minutes.		<ul> <li>(2) p.a., E. Merck, Darmstadt, Germany, was used as received.</li> <li>(3) Purity and source not given, was distilled twice using an all-glass</li> </ul>	
After equilibriu of saturated sol	m was obtained aliquots utions were removed and iluted for spectrophoto-	apparatus.	<u></u>
		ESTIMATED ERRORS:	
		T/K: precision ± m ₂ ^(s) : ± 0.0001 (c c,: ± 2 % (relative	0.05. ompiler). ve error, compiler).

COMPONENTS :		ORIGINAL MEASU	rements:
(1) Naphthalene	; C ₁₀ H ₈ ; [91-20-3]	Perez-Tejeda,	P.; Yanes, C.; Maestre, A.
(2) Acetonitril	e; C ₂ H ₃ N; [75-05-8]	Thermochim. A	cta <u>1990</u> , <i>15</i> 7, 105-112.
(3) Water; H ₂ O;	[7732-18-5]		
VARIABLES:		PREPARED BY:	
T/K = 278, 283, and 308, so	288, 293, 298, 303 lvent composition	W.E. Acree, J	r.
EXPERIMENTAL VALU	JES ^a (Continued)		
$t = 25.0 ^{\circ}C$		t = 35.0 °C	
m2 ^(s)	°1	_{m2} (s)	c ₁
0.0000	0.000263	0.0000	0.000371
0.6465	0.000295	0.6465	0.000512
1.4049	0.000398	1.4049	0.000617
2.7077	0.000692	2.7077	0.000933
4.3037	0.00142	4.3037	0.00182
6.1142	0.00309	6.1142	0.00363
$t = 30.0  {}^{\circ}C$			
0.0000	0.000324		
0.6465	0.000398		
1.4049	0.000501		
2.7077	0.000832		
4.3037	0.00158		
6.1142	0.00324		

^a  $m_2^{(s)}$ : initial molal (mol kg⁻¹) composition of the binary solvent mixture;  $c_1$  is the molar solubility (mol dm⁻³) of the solute.

COMPONENTS:		ORIGINAL MEAS	ORIGINAL MEASUREMENTS:			
(1) Naphthalene	; C ₁₀ H ₈ ; [91-20-3]	Huot, JY.;	Page, M.; Jolicoeur, C.			
(2) 1,2-Ethaned	iol; C ₂ H ₆ O ₂ ; [107-21-1]	J. Solution	Chem. <u>1991</u> , 20, 1093-1112.			
(3) Water; H ₂ O;	[7732-18-5]					
ARIABLES:		PREPARED BY:				
T/K = 278, 288, Solvent com	298, 308 and 318 position	W.E. Acree,	Jr.			
EXPERIMENTAL VAL		= 15.0 °C				
$x_2^{(s)}$	c,	x ₂ ^(s)	c,			
0.00	0.0000119	0.00	0.000158			
0.02	0.000137	0.02	0.000184			
0.05	0.000167	0.05	0.000237			
0.08	0.000207	0.08	0.000311			
0.10	0.000244	0.10	0.000372			
0.15	0.000412	0.15	0.000614			
0.20	0.000651	0.20	0.001004			
0.25	0.00106	0.25	0.00156			
0.30	0.00152	0.30	0.00233			
0.35	0.00235	0.35	0.00354			
0.40	0.00346	0.40	0.00505			
0.50	0.00705	0.50	0.00965			
0.60	0.0118	0.60	0.0171			
0.80	0.0270	0.80	0.0396			
0.997	0.0510	0.997	0.0696			
	(Contin	led on next page)				
	AUXILIA	RY INFORMATION	······································			
ETHOD: APPARATU	S/PROCEDURE	SOURCE AND PU	RITY OF MATERIALS:			
thermometer, ul	ature bath, precision traviolet/visible spectro- a peristaltic pump.		e, J.T. Baker, Inc. Phillips w Jersey, USA, was used as 1.			
weight. Relative determined with Peristaltic pump	mixtures were prepared by e solubilities were a packed-column method. p continuously circulated	Company, USA, was	Certified, Fisher Scientific Pittsburgh, Pennsylvania, s used as received.			
liquid solution through temperature controlled naphthalene-packed column until equilibrium was obtained. Aliquots of saturated solutions were removed and quantitatively diluted for spectrophoto- metric analysis at 278 nm. Cell path- lengths and dilution ratios were varied in order to keep measured absorbances below unity.		distille	(3) Purity and source not given, was distilled and deionized on a Milli- pore ion exchanger Milli-Q system.			
published absord	mputed by compiler from bance data using an ficient of $\epsilon = 57000 \text{ dm}^2$ the original paper.	ESTIMATED ERRORS: $T/K$ : precision $\pm$ 0.01. $x_2^{(5)}$ : $\pm$ 0.005 (compiler). $c_1$ : $\pm$ 2 - 5 % (relative error), depending upon dilutions used.				

COMPONENTS:		ORIGINAL MEASUREMENTS:				
(1) Naphthalene;	C ₁₀ H ₈ ; [91-20-3]	Huot, JY.;	Huot, JY.; Page, M.; Jolicoeur, C.			
(2) 1,2-Ethanedio	1; C ₂ H ₆ O ₂ ; [107-21-1]	J. Solution	Chem. <u>1991</u> , 20, 1093-1112.			
(3) Water; H ₂ O; [	/732-18-5]					
VARIABLES:	<b></b>	PREPARED BY:	·····			
T/K = 278, 288, 2 Solvent compo		W.E. Acree,	Jr.			
EXPERIMENTAL VALUE t = 25.0 °C		= 45.0 °c				
x2 ^(s)	C,	x2 ^(s)	c ₁			
0.00	0.000204	0.00	0.000391			
0.02	0.000249	0.02	0.000495			
0.05	0.000333	0.05	0.000698			
0.08	0.000454	0.08	0.000961			
0.10	0.000567	0.10	0.00120			
0.15	0.000907	0.15	0.00202			
0.20	0.00151	0.20	0.00330			
0.25	0.00232	0.25	0.00542			
0.30	0.00356	0.30	0.00796			
0.35	0.00525	0.35	0.0118			
0.40	0.00758	0.40	0.0165			
0.50	0.0135	0.50	0.0296			
0.60	0.0237	0.60	0.0458			
0.80	0.0500	0.80	0.0996			
0.997	0.0905	0.997	0.168			
$t = 35.0  {}^{\circ}C$						
0.00	0.000288					
0.02	0.000358					
0.05	0.000486					
0.08	0.000653					
0.10	0.000812					
0.15	0.00136					
0.20	0.00223					
0.25	0.00356					
0.30	0.00542					
0.35	0.00786					
0.40	0.0111					
0.50	0.0196					
0.60	0.0325					
0.80	0.0705					
0.997	0.125					

СОМРО	DNENTS:		ORIGINAL MEASUREMENTS:			
(1)	Naphthalene; C	10 ^H 8; [91-20-3]	Perez-Tejeda, P.; Yanes, C.; Maestre,			
(2)	Urea; CH ₄ N ₂ O; [	57-13-6]	Thermochim. Acta	<u>1990</u> , <i>157</i> , 105-112.		
(3)	Water; H ₂ O; [77	732-18-5]				
VARIA	ABLES:		PREPARED BY:			
T/K	= 278, 283, 28 and 308, Solve	8, 293, 298, 303 nt composition	W.E. Acree, Jr.			
	TIMENTAL VALUES	a	15.0 °c			
	m ₂ ^(s)	c -	$m_2^{(s)}$	C.		
	"'2 0.0000	0.000135	"'2 0.0000	c ₁ 0.000191		
	0.8767	0.000155	0.8767	0.000213		
	1.6257	0.000133	1.6257	0.000213		
	3.0076	0.000218	3.0076	0.000309		
	4.1028	0.000218	4.1028	0.000363		
	5.3722	0.000288	4.1028 5.3722	0.000363		
	5.3/22	0.000288	5.3/22	0.000426		
t =	10.0 °C	t =	20.0 °C			
	0.0000	0.000158	0.0000	0.000224		
	0.8767	0.000191	0.8767	0.000263		
	1.6257	0.000209	1.6257	0.000302		
	3.0076	0.000257	3.0076	0.000372		
	4.1028	0.000309	4.1028	0.000447		
	5.3722	0.000347	5.3722	0.000525		
		(Continue)	d on next page)			
		AUXILIARY	INFORMATION			
(ETHO	D: APPARATUS/PI	ROCEDURE	SOURCE AND PURITY	OF MATERIALS:		
ther		re bath, precision violet/visible spectro- agitator.	<ul> <li>(1) puriss, 99 %, Fluka Chemical Corporation, Ronkonkoma, New York, USA, recrystallized from ethanol.</li> </ul>			
Binary solvent mixtures were prepared by weight. Solid naphthalene and solvent were placed in stoppered pyrex flasks and allowed to equilibrate at a constant temperature for 50 minutes. Solutions were stirred at 25,000 rpm for 8 minutes. After equilibrium was obtained aliquots of saturated solutions were removed and quantitatively diluted for spectrophoto- metric analysis at 275 nm.		(3) Purity and so	k, Darmstadt, Germany, eceived. urce not given, was ce using an all-glass			
			ESTIMATED ERRORS: $T/K$ : precision $\pm 0$ $m_2^{(S)}$ : $\pm 0.0001$ (co $c_1$ : $\pm 2$ % (relative	0.05. ompiler). /e error, compiler).		

COMPONENTS:		ORIGINAL MEAS	UREMENTS:
(1) Naphthalene;	C ₁₀ H ₈ ; [91-20-3]	Perez-Tejeda	, P.; Yanes, C.; Maestre, A.
(2) Urea; CH ₄ N ₂ O	; [57-13-6]	Thermochim.	Acta <u>1990</u> , <i>157</i> , 105-112.
(3) Water; H ₂ O;	[7732-18-5]		
VARIABLES:	······	PREPARED BY:	
T/K = 278, 283, and 308, Sol	288, 293, 298, 303 vent composition	W.E. Acree,	Jr.
EXPERIMENTAL VALU	ES ^a (Continued)		
$t = 25.0 ^{\circ}C$		t = 35.0 °C	
<i>m</i> 2 ^(s)	<i>c</i> ₁	m2 ^(s)	c ₁
0.0000	0.000263	0.0000	0.000371
0.8767	0.000302	0.8767	0.000417
1.6257	0.000339	1.6257	0.000513
3.0076	0.000427	3.0076	0.000589
4.1028	0.000490	4.1028	0.000741
5.3722	0.000589	5.3722	0.000933
t = 30.0 °C			
0.0000	0.000324		
0.8767	0.000372		
1.6257	0.000427		
3.0076	0.000501		
4.1028	0.000617		
5.3722	0.000692		

^a  $m_2^{(s)}$ ; initial molal (mol kg⁻¹) composition of the binary solvent mixture;  $c_1$  is the molar solubility (mol dm⁻³) of the solute.

# PHENANTHRENE SOLUBILITIES IN BINARY SOLVENT MIXTURES

I. <u>Alkane + Alkane (including cycloalkanes)</u>

None

II. Alkane + Aromatic Hydrocarbon

cyclohexane + benzene

III. Alkane + Ester

None

IV. <u>Alkane + Ether</u>

None

V. <u>Alkane + Chloroalkane</u>

None

VI. Ether + Chloroalkane

None

VII. <u>Miscellaneous</u>

benzene + pyridine
cyclohexane + pyridine
benzene + thiophene
cyclohexane + thiophene
thiophene + pyridine
1,2,3,4-tetrahydronaphthalene + decahydronaphthalene

COMPONENTS:			ORIGINAL MEASUREMENTS: Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. PREPARED BY:			
(1) Phenanthr	ene; C ₁₄ H ₁₀ ;	[85-01-8]				
(2) Cyclohexa	ne; C ₆ H ₁₂ ; [1	10-82-7]				
(3) Benzene;	C6H6; [71-43-	-2]				
VARIABLES:						
Temperature,	Solvent comp	osition	W.E. Acree, Jr.			
EXPERIMENTAL V	ALUES ⁸		. <b> </b>	<u> </u>		
T/K	x3 ⁽⁶⁾	<i>*</i> 1	T/K	×3 ^(s)	<b>*</b> 1	
307.65	0.0000	0.0606	343.55	0.5000	0.5629	
313.85	0.0000	0.0819	360.85	0.5000	0.8177	
319.65	0.0000	0.1093				
321.85	0.0000	0.1228	307.95	0.7000	0.2041	
325.85	0.0000	0.1530	314.65	0.7000	0.2567	
333.25	0.0000	0.2430	324.55	0.7000	0.3521	
339.55	0.0000	0.3568	351.55	0.7000	0.6910	
		D 11/0	362.65	0.7000	0.8556	
312.25	0.3000	0.1469	310 75	1.0000	0.2815	
320.25	0.3000	0.2123	312.75		0.3128	
326.85	0.3000	0.2800	316.75 325.25	1.0000		
353.75	0.3000	0.7018		1.0000	0.3958	
360.65	0.3000	0.8147	334.75	1.0000	0.4949	
			341.85	1.0000	0.5771	
305.35	0.5000	0.1503	342.15	1.0000	0.5792	
318.65	0.5000	0.2503				
327.25	0.5000	0.3415				
^a x ₃ ^(s) : i solubilit	nitial mole : y of the sol	fraction of binary ute.	solvent mix	ture; x ₁ : mo]	le fraction	
···		AUXILIARY	INFORMATION			
METHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND	PURITY OF M	IATERIALS:	
thermometer. Solubilities	were measure od. Mixtures	of known concen-	(1) 98.7 %, Eastern Chemical Company, Smithtown, New York, USA, was passed over activated alumina and then recrystallized from toluene.			
temperature t were rotated	o equilibrat at a speed o	in a constant e. Samples were f 0.25 rps while slowly increased	(2) Gold Label, 99.9+ %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was used as received.			
by 0.1 K ever determined by ature at whic	y 1200 secon visually no the last t beared. At le	ds. Solubility ting the temper- race of solid ast two measure-			- %, Aldrich Chemical as received.	
			ESTIMATED	ERRORS :		
			$\begin{array}{c c} T/K: & \text{prec} \\ x_3^{(s)}: \pm 0 \\ x_1^{(s)}: \pm 0.0 \end{array}$	$\pm 0.1.$		

COMPONENTS :			ORIGINAL MEASUREMENTS:			
(1) Phenanthr			Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E.			
(2) Benzene;	C ₆ H ₆ ; [71-43	-2]				
(3) Pyridine;	C5H5N; [110-	-86-1]			<u>987</u> , <i>32</i> , 233-240.	
			Choi, P.B.; McLaughlin, E. Ind. Chem. Eng. Fundam. <u>1983</u> , 22, 46-51. PREPARED BY:			
VARIABLES:						
Temperature,	Solvent comp	osition	W.E. Acre	e, Jr.		
EXPERIMENTAL V	ALUES		4		9999	
T/K	x3 ^(s)	<i>x</i> 1	T/K	x3 ^(s)	<i>*</i> 1	
312.75	0.0000	0.2815	299.8	1.0000	0.2459	
316.75	0.0000	0.3128	307.7	1.0000	0.3011	
325.25	0.0000	0.3958	314.4	1.0000	0.3513	
334.75	0.0000	0.4949	316.6	1.0000	0.3690	
341.85	0.0000	0.5771	323.4	1.0000	0.4283	
342.15	0.0000	0.5792	342.8	1.0000	0.6170	
			349.6	1.0000	0.6961	
313.4	0.3000	0.2983	355.6	1.0000	0.7651	
325.2	0.3000	0.3993	361.0	1.0000	0.8349	
334.3	0.3000	0.5014	366.5	1.0000	0.9111	
342.6	0.3000	0.5968				
351.8	0.3000	0.7033				
359.2	0.3000	0.8075				
Bolubilit	y of the sol	fraction of binary ute.				
		AUXILIARY	INFORMATION	1		
METHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:	
Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.		<ul> <li>(1) 98.7 %, Eastern Chemical Company, Smithtown, New York, USA, was passed over activated alumina and then recrystallized from toluene</li> <li>(2) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, was used as received.</li> <li>(3) Gold Label, 99.9+ %, Aldrich Chemica Company, was used as received.</li> </ul>				
			ESTIMATED	ERRORS :	<u></u>	

(1) Phenanthr	COMPONENTS:			ORIGINAL MEASUREMENTS:			
<ol> <li>(1) Phenanthrene; C₁₄H₁₀; [85-01-8]</li> <li>(2) Cyclohexane; C₆H₁₂; [110-82-7]</li> </ol>			Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409.				
(2) Cyclohexa	ine; C ₆ H ₁₂ ; [1	10-82-7]	Coon, J.E J. Chem.	Coon, J.E.; Troth, M.; McLaughlin, E. J. Chem. Eng. Data <u>1987</u> , 32, 233-240.			
(3) Pyridine;	; C ₅ H ₅ N; [110-	·86-1]	J. Chem. Eng. Data <u>1987</u> , 32, 233-240. Choi, P.B.; McLaughlin, E. Ind. Chem. Eng. Fundam. <u>1983</u> , 22, 46-51. PREPARED BY:				
VARIABLES:							
Temperature,	Solvent comp	osition	W.E. Acre	e, Jr.			
EXPERIMENTAL \	/ALUES ^a		<b> </b>				
T/K	x3 ^(s)	<b>x</b> 1	T/K	x3 ^(s)	<b>x</b> 1		
307.65	0.0000	0.0606	345.7	0.3000	0.6059		
313.85	0.0000	0.0819	355.4	0.3000	0.7267		
319.65	0.0000	0.1093					
321.85	0.0000	0.1228	299.8	1.0000	0.2459		
325.85	0.0000	0.1530	307.7	1.0000	0.3011		
333.25	0.0000	0.2430	314.3	1.0000	0.3513		
339.55	0.0000	0.3568	316.6	1.0000	0.3690		
			323.4	1.0000	0.4283		
325.6	0.3000	0.3442	342.8	1.0000	0.6170		
328.5	0.3000	0.3830	349.6	1.0000	0.6961		
338.2	0.3000	0.5036	355.6	1.0000	0.7651		
00012	015000		361.0	1.0000	0.8349		
			366.5	1.0000	0.9111		
	ty of the sol						
		AUXILIARY	INFORMATIO	N			
METHOD: APPARJ	TUS/PROCEDUR		1	N D PURITY OF M	TATERIALS:		
Constant temp thermometer. Solubilities dynamic metho trations were glass ampould temperature t were rotated the bath temp by 0.1 K even determined by ature at whit solute disapp	perature bath were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was cy 1200 secon y visually no ch the last t	E and a precision of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	SOURCE ANI (1) 98.7 Smith passe then (2) Gold Compa was a (3) Gold	D PURITY OF M %, Eastern C htown, New Yc ed over activ recrystalliz Label, 99.9+ any, Milwauke used as recei Label, 99.9+	themical Company, ork, USA, was ated alumina and ed from toluene. **, Aldrich Chemica e, Wisconsin, USA,		

Components:			ORIGINAL M	EASUREMENTS:		
(1) Phenanthr			Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E. J. Chem. Eng. Data <u>1987</u> , 32, 233-240.			
(2) Benzene;						
(3) Thiophene	; C ₄ H ₄ S; [110	J-02-1 }		8.; McLaughli n. Eng. Funda	n, E. <i>m. <u>1983</u>, 22,</i> 46-51.	
VARIABLES:			PREPARED BY:			
Temperature,	Solvent comp	osition	W.E. Acre	ee, Jr.		
EXPERIMENTAL V	ALUES ⁸		ł			
T/K	x3 ^(s)	<b>x</b> 1	T/K	x3 ^(s)	<i>x</i> 1	
312.75	0.0000	0.2815	347.8	0.3000	0.6550	
316.75	0.0000	0.3128	356.5	0.3000	0.7673	
325.25	0.0000	0.3958				
334.75	0.0000	0.4949	299.4	1.0000	0.2379	
341.85	0.0000	0.5771	304.9	1.0000	0.2742	
342.15	0.0000	0.5792	310.0	1.0000	0.3146	
			321.2	1.0000	0.4016	
306.5	0.3000	0.2479	340.9	1.0000	0.5907	
311.6	0.3000	0.2888	348.3	1.0000	0.6757	
316.1	0.3000	0.3223	355.0	1.0000	0.7541	
324.8	0.3000	0.4024				
331.5	0.3000	0.4710				
338.7	0.3000	0.5455				
	y of the sol					
		AUXILIARY	INFORMATION	I		
THOD: APPARA	TUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:	
Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while the bath temperature was slowly increased by 0.1 K every 1200 seconds. Solubility determined by visually noting the temper- ature at which the last trace of solid solute disappeared. At least two measure- ments were performed for each mixture composition.		<ul> <li>(1) 98.7 %, Eastern Chemical Company, Smithtown, New York, USA, was was passed over activated alumina and then recrystallized from toluend</li> <li>(2) Gold Label, 99.9+ %, Aldrich Chemica Company, Milwaukee, Wisconsin, USA, was used as received.</li> <li>(3) Gold Label, 99.9+ %, Aldrich Chemica Company, was used as received.</li> </ul>				
			ESTIMATED T/K: prec x ₃ ^(s) : <u>+</u> 0 x ₁ : <u>+</u> 0.0	rision + 0.1.		

Components :		ORIGINAL MEASUREMENTS:				
(1) Phenanth	rene; C ₁₄ H ₁₀ ;	[85-01-8]	Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E. J. Chem. Eng. Data <u>1987</u> , 32, 233-240. Choi, P.B.; McLaughlin, E. Ind. Chem. Eng. Fundam. <u>1983</u> , 22, 46-51. PREPARED BY: W.E. Acree, Jr.			
(2) Cyclohex	ane; C ₆ H ₁₂ ; [1	.10-82-7]				
(3) Thiophen	e; C ₄ H ₄ S; [110	0-02-1]				
	•••					
ARIABLES:						
Temperature,	Solvent comp	osition				
XPERIMENTAL	VALUES ⁸		<b>.</b>	·····		
T/K	*3 ^(s)	<b>x</b> 1	T/K	x3 ^(\$)	×1	
307.65	0.0000	0.0606	340.3	0.3000	0.5165	
313.85	0.0000	0.0819	351.6	0.3000	0.7007	
319.65	0.0000	0.1093				
321.85	0.0000	0.1228	299.4	1.0000	0.2379	
325.85	0.0000	0.1530	304.9	1.0000	0.2742	
333.25	0.0000	0.2430	310.0	1.0000	0.3146	
339.55	0.0000	0.3568	321.2	1.0000	0.4016	
			340.9	1.0000	0.5907	
301.9	0.3000	0.1168	348.3	1.0000	0.6757	
309.2	0.3000	0.1558	355.0	1.0000	0.7541	
316.5	0.3000	0.2096				
323.3	0.3000	0.2759				
330.7	0.3000	0.3731				
	ty of the sol					
		AUXILIARY	INFORMATION	r		
				-		
ETHOD: APPAR	ATUS/PROCEDUR	E	SOURCE AND	PURITY OF M	ATERIALS:	
Constant tem thermometer. Solubilities dynamic meth trations werr glass ampoul temperature i were rotated the bath tem by 0.1 K eve determined b ature at whis solute disapp	perature bath were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t	and a precision d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	<ul> <li>(1) 98.7 Smith passe then</li> <li>(2) Gold Compa was u</li> <li>(3) Gold</li> </ul>	PURITY OF M %, Eastern C town, New Yo ed over activ. recrystalliz Label, 99.9+ my, Milwauke. Bed as recei Label, 99.9+	hemical Company, rk, USA, was ated alumina and ed from toluene. %, Aldrich Chemical s, Wisconsin, USA,	

Components :			ORIGINAL M	EASUREMENTS:		
(1) Phenanth:	rene; C ₁₄ H ₁₀ ;	[85-01-8]	Choi, P.B.; Williams, C.P.; Buehring, K.G.; McLaughlin, E. J. Chem. Eng. Data <u>1985</u> , 30, 403-409. Coon, J.E.; Troth, M.; McLaughlin, E.			
(2) Thiophene	e; C ₄ H ₄ S; [110	0-02-1]				
(3) Pyridine	; C ₅ H ₅ N; [110-	-86-1]	Choi, P.B	.; McLaughli	<u>987</u> , <i>32</i> , 233-240. n, E. m. 1983 <i>, 22,</i> 46-51.	
<u></u>	<u></u>		Ind. Chem. Eng. Fundam. <u>1983</u> , 22, 46-51. PREPARED BY:			
VARIABLES:	<b>-</b> -1					
Temperature,	Solvent comp	OBICION	W.E. Acre	ie, Jr.		
EXPERIMENTAL	VALUES ^a		•			
T/K	x3 ⁽⁸⁾	<i>x</i> 1	T/K	x3 ⁽⁸⁾	<b>x</b> 1	
299.4	0.0000	0.2379	299.8	1.0000	0.2459	
304.9	0.0000	0.2742	307.7	1.0000	0.3011	
310.0	0.0000	0.3146	314.3	1.0000	0.3513	
321.2	0.0000	0.4016	316.6	1.0000	0.3690	
340.9	0.0000	0.5907	323.4	1.0000	0.4283	
348.3	0.0000	0.6757	342.8	1.0000	0.6170	
355.0	0.0000	0.7541	349.6	1.0000	0.6961	
			355.6	1.0000	0.7651	
308.3	0.3000	0.3038	361.0	1.0000	0.8349	
309.7	0.3000	0.3136	366.5	1.0000	0.9111	
327.7	0.3000	0.4599				
344.4	0.3000	0.6296				
351.0	0.3000	0.7157				
351.1	0.3000	0.7157				
a x3 ^(s) ; j Bolubili	initial mole ty of the sol	fraction of binary ute.	solvent mix	ture; x ₁ : mol	e fraction	
		AUXILIARY	INFORMATION	1		
	ATUS/PROCEDUR	E	SOURCE AND	D PURITY OF M	ATERIALS:	
ETHOD: APPARATUS/PROCEDURE						
Constant tem	Constant temperature bath and a precision thermometer.			%, Eastern C	hemical Company,	
Constant tem thermometer.	-	-	Smith passe	%, Eastern C ntown, New Yo ed over activ	rk, USA, was ated alumina and	
Constant tem thermometer. Solubilities dynamic meth	- were measure od. Mixtures	d using a of known concen-	Smith passe	%, Eastern C ntown, New Yo ed over activ	rk, USA, was	
Constant tem thermometer. Solubilities dynamic meth trations wer glass ampoul	were measure od. Mixtures e sealed in t es and placed	d using a of known concen- hick-walled i in a constant	(2) Gold	%, Eastern C htown, New Yo d over activ recrystalliz Label, 99.9+	rk, USA, was ated alumina and ed from toluene.	
Constant tem thermometer. Solubilities dynamic meth trations wer glass ampoul temperature t were rotated	were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o	d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while	(2) Gold Compa	%, Eastern C htown, New Yo d over activ recrystalliz Label, 99.9+	rk, USA, was ated alumina and ed from toluene. *, Aldrich Chemica e, Wisconsin, USA,	
Constant tem thermometer. Solubilities dynamic meth trations were glass ampoul temperature were rotated the bath tem by 0.1 K eve	were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon	d using a of known concen- hick-walled in a constant e. Samples were of 0.25 rps while slowly increased ds. Solubility	(2) Gold Compa was t (3) Gold	%, Eastern C htown, New Yo ed over activ recrystalliz Label, 99.94 any, Milwauke used as recei Label, 99.94	rk, USA, was ated alumina and ed from toluene. *, Aldrich Chemica: e, Wisconsin, USA, ved. *, Aldrich Chemica:	
Constant tem thermometer. Solubilities dynamic meth- trations wer- glass ampoul temperature were rotated the bath tem by 0.1 K eve determined by ature at whi	were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t	d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid	(2) Gold Compa was t (3) Gold	%, Eastern C htown, New Yo ed over activ recrystalliz Label, 99.94 any, Milwauke used as recei Label, 99.94	rk, USA, was ated alumina and ed from toluene. %, Aldrich Chemical e, Wisconsin, USA, ved.	
Constant tem thermometer. Solubilities dynamic meth trations wer glass ampoul temperature were rotated the bath tem by 0.1 K eve: determined by ature at whi solute disap ments were p	were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t peared. At le erformed for	d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	(2) Gold Compa was t (3) Gold	%, Eastern C htown, New Yo ed over activ recrystalliz Label, 99.94 any, Milwauke used as recei Label, 99.94	rk, USA, was ated alumina and ed from toluene. *, Aldrich Chemical e, Wisconsin, USA, ved. *, Aldrich Chemical	
Constant tem thermometer. Solubilities dynamic meth trations wer glass ampoul temperature ' were rotated the bath tem by 0.1 K eve determined b ature at whi solute disap	were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t peared. At le erformed for	d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	(2) Gold Compa was t (3) Gold	%, Eastern C htown, New Yo ed over activ recrystalliz Label, 99.94 any, Milwauke used as recei Label, 99.94	rk, USA, was ated alumina and ed from toluene. *, Aldrich Chemical e, Wisconsin, USA, ved. *, Aldrich Chemical	
Constant tem thermometer. Solubilities dynamic meth trations wer glass ampoul temperature were rotated the bath tem by 0.1 K eve: determined by ature at whi solute disap ments were p	were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t peared. At le erformed for	d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	(2) Gold Compa was u (3) Gold Compa	<pre>%, Eastern C htown, New Yc ed over activ recrystalliz Label, 99.9+ any, Milwauke used as recei Label, 99.9+ any, was used</pre>	rk, USA, was ated alumina and ed from toluene. *, Aldrich Chemical e, Wisconsin, USA, ved. *, Aldrich Chemical	
Constant tem thermometer. Solubilities dynamic meth trations wer glass ampoul temperature were rotated the bath tem by 0.1 K eve: determined by ature at whi solute disap ments were p	were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t peared. At le erformed for	d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	(2) Gold Compa was u (3) Gold Compa ESTIMATED	<pre>%, Eastern C htown, New Yo dover activ recrystalliz Label, 99.9+ any, Milwauke used as recei Label, 99.9+ any, was used Easter, was used</pre>	rk, USA, was ated alumina and ed from toluene. *, Aldrich Chemical e, Wisconsin, USA, ved. *, Aldrich Chemical as received.	
Constant tem thermometer. Solubilities dynamic meth trations wer glass ampoul temperature were rotated the bath tem by 0.1 K eve: determined by ature at whi solute disap ments were p	were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t peared. At le erformed for	d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	(2) Gold Compa was u (3) Gold Compa <b>ESTIMATED</b>	<pre>%, Eastern C htown, New Yo dover activ recrystalliz Label, 99.9+ any, Milwauke used as recei Label, 99.9+ any, was used Eastern, was used ERRORS: Cision + 0.1</pre>	rk, USA, was ated alumina and ed from toluene. *, Aldrich Chemical e, Wisconsin, USA, ved. *, Aldrich Chemical as received.	
Constant tem thermometer. Solubilities dynamic meth trations wer glass ampoul temperature were rotated the bath tem by 0.1 K eve: determined by ature at whi solute disap ments were p	were measure od. Mixtures e sealed in t es and placed to equilibrat at a speed o perature was ry 1200 secon y visually no ch the last t peared. At le erformed for	d using a of known concen- hick-walled in a constant e. Samples were f 0.25 rps while slowly increased ds. Solubility ting the temper- race of solid ast two measure-	(2) Gold Compa was u (3) Gold Compa ESTIMATED	<pre>%, Eastern C htown, New Yo dover activ recrystalliz Label, 99.9+ any, Milwauke used as recei Label, 99.9+ any, was used Eastern, was used ERRORS: Cision + 0.1</pre>	rk, USA, was ated alumina and ed from toluene. *, Aldrich Chemical e, Wisconsin, USA, ved. *, Aldrich Chemical as received.	

COMPONENTS :			ORIGINAL MEA	SUREMENTS:		
(1) Phenanthr	ene; C ₁₄ H ₁₀ ;	[85-01-8]	Coon, J.E.; Auwaerter, J.E.; McLaughlin, E. Fluid Phase Equilibr. <u>1989</u> , 44, 305-345.			
(2) 1,2,3,4-T C ₁₀ H ₁₂ ; [1	etrahydronap 19-64-2]	hthalene;				
(3) Decahydro [91-17-8]	onaphthalene;	C ₁₀ H ₁₈ ;				
ARIABLES:			PREPARED BY:			
Temperature,	Solvent comp	osition	W.E. Acree,	Jr.		
EXPERIMENTAL V	VALUES ⁸		4			
T/K	x3 ^(s)	<b>x</b> 1	T/K	x3 ^(s)	<i>x</i> ₁	
309.7	0.0000	0.2843	348.6	0.5000	. 0.6540	
316.2	0.0000	0.3343	352.2	0.5000	0.6973	
325.8	0.0000	0.4175				
333.1	0.0000	0.4887	314.4	1.0000	0.1593	
340.6	0.0000	0.5681	320.1	1.0000	0.2020	
			326.2	1.0000	0.2554	
312.7	0.5000	0.2522	331.9	1.0000	0.3283	
324.4	0.5000	0.3530	337.4	1.0000	0.4030	
333.0	0.5000	0.4583	341.2	1.0000	0.4751	
341.6	0.5000	0.5542	345.6	1.0000	0.5612	
		AUXILIARY	INFORMATION	· · · · · · · · · · · · · · · · · · ·		
ETHOD: APPARA	TUS/PROCEDUR	E	SOURCE AND P	URITY OF M	ATERIALS:	
METHOD: APPARATUS/PROCEDURE Constant temperature bath and a precision thermometer. Solubilities were measured using a dynamic method. Mixtures of known concen- trations were sealed in thick-walled glass ampoules and placed in a constant temperature to equilibrate. Samples were were rotated at a speed of 0.25 rps while			<ul> <li>(1) 98.6 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, was passed over activated alumina and then recrystallized from solution.</li> <li>(2) 99.6+ %, Aldrich Chemical Company.</li> <li>(3) 99+ %, Aldrich Chemical Company,</li> </ul>			
by 0.1 K ever determined by ature at which	y 1200 secon visually no th the last t weared. At le	slowly increased ds. Solubility ting the temper- race of solid ast two measure- each mixture	and 39. Compone	4 % trans. nts 2 and :	ratio of 60.6 % cis 3 were stored over to remove trace	
			ESTIMATED ER	RORS: ion <u>+</u> 0.1.		

PYRENE SOLUBILITIES IN BINARY SOLVENT MIXTURES

I. <u>Alkane + Alkane (including cycloalkanes</u>

n-hexane + cyclohexane n-heptane + cyclohexane n-octane + cyclohexane 2,2,4-trimethylpentane + cyclohexane cyclohexane + cyclooctane

## II. Alkane + Aromatic Hydrocarbon

n-hexane + benzene n-heptane + benzene n-octane + benzene cyclohexane + benzene 2,2,4-trimethylpentane + benzene cyclooctane + benzene

III. Alkane + Ester

None

## IV. Alkane + Ether

n-hexane + 1,1-oxybisbutane n-heptane + 1,1-oxybisbutane n-octane + 1,1-oxybisbutane cyclohexane + 1,1-oxybisbutane methylcyclohexane + 1,1-oxybisbutane 2,2,4-trimethylpentane + 1,1-oxybisbutane t-butylcyclohexane + 1,1-oxybisbutane

### V. <u>Alkane + Chloroalkane</u>

n-hexane + 1,4-dichlorobutane n-heptane + 1,4-dichlorobutane n-octane + 1,4-dichlorobutane cyclohexane + 1,4-dichlorobutane methylcyclohexane + 1,4-dichlorobutane 2,2,4-trimethylpentane + 1,4-dichlorobutane

# VI. Ether + Chloroalkane

None

# VII. <u>Miscellaneous</u>

methylbenzene + 2-propanone
methylbenzene + ethanol
methylbenzene + pyridine

ORIGINAL MEASUREMENTS: COMPONENTS: Judy, C.L.; Pontikos, N.M.; Acree, W.E., (1) Pyrene; C₁₆H₁₀; [129-00-0] Jr. (2) Cyclohexane; C₆H₁₂; [110-82-7] J. Chem. Eng. Data 1987, 32, 60-62. (3) n-Hexane; C₆H₁₄; [110-54-3] VARIABLES: PREPARED BY: T/K = 299, Solvent composition W.E. Acree, Jr. EXPERIMENTAL VALUES^a t = 26.0 °C x,(s) ×z x₁ 0.0000 0.0000 0.00852 0.2195 0.2174 0.00942 0.4321 0.4365 0.01016 0.5513 0.5455 0.01049 0.6018 0.5954 0.01057 0.6503 0.6434 0.01066 0.7687 0.7604 0.01077 0.8300 0.8209 0.01099 1.0000 0.9891 0.01089 *  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute:  $x_2$ : mole fraction of component 2 in the ternary solution. AUXILIARY INFORMATION SOURCE AND PURITY OF MATERIALS: METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric (1) 99 %, Aldrich Chemical Company, thermometer, and an ultraviolet/visible Milwaukee, Wisconsin, USA, recrystalspectrophotometer. lized 3 times from absolute ethanol. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) 99 %, Aldrich Chemical Company. was verified by several repetitive measurements and by approaching equili-brium from supersaturation. Aliquots of Components 2 and 3 were stored over molecular sieves and distilled shortly saturated solutions transferred through before use. a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-metrically at 372 nm. ESTIMATED ERRORS:  $T/K: \pm 0.05.$  $x_2^{(5)}: \pm 0.0001.$  $x_1: \pm 1$  % (relative error).

Components :	ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]	Judy, C.L.; Pontikos, N.M.; Acree, W.E.,
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	Jr. J. Chem. Eng. Data <u>1987</u> , 32, 60-62.
(3) n-Heptane; C ₇ H ₁₆ ; [142-82-5]	J. Chem. Eng. Data <u>1307</u> , 52, 60-62.
VARIABLES:	PREPARED BY:
T/K = 299, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ⁸ $t = 26.0 \ ^{\circ}C$	
x2 ^(\$) x2	x ₁
0.0000 0.0000	0.01101
0.1506 0.1489	0.01121
0.2572 0.2543	0.01145
0.4685 0.4631	0.01152
0.5682 0.5616	0.01156
0.6592 0.6516	0.01151
0.8382 0.8287	0.01134
1.0000 0.9891	0.01089
	·
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of	<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>(2) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.7+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly</li> </ul>

Components:	ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]	Judy, C.L.; Pontikos, N.M.; Acree, W.E., Jr.
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	J. Chem. Eng. Data <u>1987</u> , 32, 60-62.
(3) n-Octane; C ₈ H ₁₈ ; [111-65-9]	
VARIABLES:	PREPARED BY:
T/K = 299, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a $t = 26.0 ^{\circ}C$	
x2 ^(s) x2	×1
0.0000 0.0000	0.01379
0.1751 0.1727	0.01369
0.2840 0.2802	0.01350
0.5005 0.4939	0.01314
0.5532 0.5460	0.01299
0.6063 0.5985	0.01281
0.6938 0.6852	0.01246
0.8577 0.8477	0.01171
1.0000 0.9891	0.01089
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant	(2) HPLC Grade, 99.9+ %, Aldrich Chemical Company.
temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili-	(3) Gold Label, 99+ %, Aldrich Chemical Company.
brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 372 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$T/K_{2} + 0.05$
	$x_2^{(3)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]	Judy, C.L.; Pontikos, N.M.; Acree, W.E., Jr.
(2) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]	J. Chem. Eng. Data <u>1987</u> , 32, 60-62.
(3) 2,2,4-Trimethylpentane; C ₈ H ₁₈ ; [540-84-1]	<i>b. Chem. Eng. paca</i>
VARIABLES:	PREPARED BY:
T/K = 299, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 26.0 °C	
x ₂ ^(s) x ₂	<i>*</i> 1
0.0000 0.0000	0.00721
0.2874 0.2851	0.00803
0.4993 0.4949	0.00887
0.5579 0.5528	0.00909
0.6003 0.5947	0.00926
0.7007 0.6940	0.00958
0.7022 0.6954	0.00962
0.8533 0.8445	0.01027
1.0000 0.9891	0.01089
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 372 nm.	<ul> <li>(2) HPLC Grade, 99.9+ %, Aldrich Chemical Company.</li> <li>(3) HPLC Grade, 99.7+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>
	ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

ORIGINAL MEASUREMENTS: COMPONENTS : Judy, C.L.; Pontikos, N.M.; Acree, W.E., (1) Pyrene; C₁₆H₁₀; [129-00-0] Jr. (2) Cyclohexane; C₆H₁₂; [110-82-7] J. Chem. Eng. Data <u>1987</u>, 32, 60-62. (3) Cyclooctane; C₈H₁₆; [292-64-8] VARIABLES: PREPARED BY: T/K = 299, Solvent composition W.E. Acree, Jr. EXPERIMENTAL VALUES^a t = 26.0 °C x,(s) ×2 x₁ 0.0000 0.0000 0.01956 0.2387 0.2344 0.01780 0.4680 0.4606 0.01572 0.5624 0.5540 0.01489 0.6638 0.6544 0.01409 0.6655 0.6562 0.01400 0.8363 0.8258 0.01250 1.0000 0.9891 0.01089 ^a  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_2$ : mole fraction of component 2 in the ternary solution. AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE SOURCE AND PURITY OF MATERIALS: Constant temperature bath, calorimetric (1) 99 %, Aldrich Chemical Company, thermometer, and an ultraviolet/visible spectrophotometer. Milwaukee, Wisconsin, USA, recrystal-lized 3 times from absolute ethanol. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. Attainment of equilibrium (3) Gold Label, 99+ %, Aldrich Chemical temperature. was verified by several repetitive Company. measurements and by approaching equilibrium from supersaturation. Aliquots of Components 2 and 3 were stored over saturated solutions transferred through molecular sieves and distilled shortly a coarse filter into tared volumetric before use. flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-metrically at 372 nm. ESTIMATED ERRORS:  $T/K: \pm 0.05.$  $x_2^{(s)}: \pm 0.0001.$  $x_1: \pm 1$  % (relative error).

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ;	[129-00-0]	Judy, C.L.; Pontikos, N.M.; Acree, W.E., Jr.
(2) n-Hexane; C ₆ H ₁₄	; [110-54-3]	Phys. Chem. Liq. <u>1987</u> , 16, 179-187.
(3) Benzene; C ₆ H ₆ ; [71-43-2]		
VARIABLES:		PREPARED BY:
T/K = 299, Solvent	composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES t = 26.0 °C	8	
x3 ^(S)	x3	<b>x</b> 1
0.0000	0.0000	0.00852
0.1993	0.1965	0.01386
0.2833	0.2786	0.01676
0.4016	0.3927	0.02225
0.4977	0.4840	0.02756
0.6008	0.5804	0.03389
0.6824	0.6554	0.03961
0.8451	0.9489	0.05107
1.0000	0.9368	0.06316
	AUXILIARY	INFORMATION
METHOD: APPARATUS/P	ROCEDURE	SOURCE AND PURITY OF MATERIALS:
thermometer, and a spectrophotometer.		<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> </ul>
weight. Excess sol	tures were prepared by ute and solvent placed tles and allowed to	(2) 99 %, Aldrich Chemical Company.
equilibrate for se	veral days at constant inment of equilibrium	(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.
brium from supersa saturated solution a coarse filter in flasks, weighed an	y approaching equili- turation. Aliquots of s transferred through to tared volumetric d diluted with methanol. ermined spectrophoto-	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
		POTINATED BODODA
		ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_{3}^{(6)}: \pm 0.0001.$ $x_{1}: \pm 1.5 $ % (relative error).

ORIGINAL MEASUREMENTS: COMPONENTS: (1) Pyrene; C₁₆H₁₀; [129-00-0] Judy, C.L.; Pontikos, N.M.; Acree, W.E., Jr. (2) n-Heptane; C₇H₁₆; [142-82-5] Phys. Chem. Liq. 1987, 16, 179-187. (3) Benzene; C₄H₆; [71-43-2] VARIABLES: PREPARED BY: T/K = 299, Solvent composition W.E. Acree, Jr. EXPERIMENTAL VALUES⁸ t = 26.0 °Cx,⁽⁸⁾ x₃ x₁ 0.0000 0.0000 0.01101 0.2076 0.2111 0.01640 0.3091 0.3028 0.02049 0.5277 0.5113 0.03102 0.6219 0.5989 0.03702 0.7213 0.6899 0.04352 0.8627 0.05280 0.8171 1.0000 0.9368 0.06316 ^a  $x_{\tau}^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_{1}$ : mole fraction solubility of the solute;  $x_3$ : mole fraction of component 3 in the ternary solution. AUXILIARY INFORMATION SOURCE AND PURITY OF MATERIALS: METHOD: APPARATUS/PROCEDURE (1) 99 %, Aldrich Chemical Company, Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible Milwaukee, Wisconsin, USA, recrystalspectrophotometer. lized 3 times from absolute ethanol. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed (2) Gold Label, 99.7+ %, Aldrich Chemical in amber glass bottles and allowed to Company. equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili-brium from supersaturation. Aliquots of (3) HPLC Grade, 99.9+ %, Aldrich Chemical Company. Components 2 and 3 were stored over a coarse filter into tared volumetric molecular sieves and distilled shortly before use. flasks, weighed and diluted with methanol. Concentrations determined spectrophotometrically at 372 nm. ESTIMATED ERRORS:  $T/K: \pm 0.05.$  $x_3^{(s)}: \pm 0.00$  $x_3^{(S)}$ :  $\pm$  0.0001.  $x_1$ :  $\pm$  1.5 % (relative error).

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]	Judy, C.L.; Pontikos, N.M.; Acree, W.E., Jr.
(2) n-Octane; C ₈ H ₁₈ ; [111-65-9]	Phys. Chem. Liq. <u>1987</u> , 16, 179-187.
(3) Benzene; C ₆ H ₆ ; [71-43-2]	
VARIABLES:	PREPARED BY:
T/K = 299, Solvent composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ^a t = 26.0 °C	
x ₃ ^(s) x ₃	×1
0.0000 0.0000	0.01379
0.2031 0.1990	0.02028
0.3288 0.3207	0.02455
0.5434 0.5249	0.03398
0.6549 0.6287	0.04006
0.7355 0.7029	0.04428
0.8729 0.8255	0.05432
1.0000 0.9368	0.06316
AUXILIAR	Y INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> </ul>
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant	(2) Gold Label, 99+ %, Aldrich Chemical Company.
temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili-	(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.
brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 372 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_3^{(6)}: \pm 0.0001.$ $x_1: \pm 1.5$ % (relative error).

COMPONENTS: ORIGINAL MEASUREMENTS: (1) Pyrene; C₁₆H₁₀; [129-00-0] Judy, C.L.; Pontikos, N.M.; Acree, W.E., (2) Cyclohexane; C₆H₁₂; [110-82-7] Phys. Chem. Liq. 1987, 16, 179-187. (3) Benzene; C₆H₆; [71-43-2] VARIABLES: PREPARED BY: T/K = 299, Solvent composition W.E. Acree, Jr. EXPERIMENTAL VALUES⁸ t = 26.0 °Cx3⁽⁸⁾ x₃ X1 0.0000 0.0000 0.01089 0.2504 0.2452 0.02058 0.3502 0.3413 0.02541 0.4420 0.4282 0.03118 0.5524 0.03680 0.5321 0.6525 0.6245 0.04289 0.8196 0.7766 0.05243 1,0000 0.9368 0.06316 *  $x_3^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ ; mole fraction solubility of the solute;  $x_3$ ; mole fraction of component 3 in the ternary solution. AUXILIARY INFORMATION SOURCE AND PURITY OF MATERIALS: METHOD: APPARATUS/PROCEDURE (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible lized 3 times from absolute ethanol. spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed (2) HPLC Grade, 99.9+ %, Aldrich Chemical in amber glass bottles and allowed to Company. equilibrate for several days at constant temperature. Attainment of equilibrium (3) HPLC Grade, 99.9+ %, Aldrich Chemical temperature. Actainment of equilibrium was verified by several repetitive measurements and by approaching equili-brium from supersaturation. Aliquots of saturated solutions transferred through Company. Components 2 and 3 were stored over molecular sieves and distilled shortly a coarse filter into tared volumetric flasks, weighed and diluted with methanol. before use. Concentrations determined spectrophoto-metrically at 372 nm. ESTIMATED ERRORS:  $T/K: \pm 0.05.$  $x_3^{(s)}: \pm 0.0001.$  $x_1: \pm 1.5 %$  (relative error).

COMPONENTS :		ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ;	[129-00-0]	Judy, C.L.; Pontikos, N.M.; Acree, W.E.,
(2) 2,2,4-Trimethylpentane; C ₆ H ₁₂ ;		Jr.
[540-84-1]		Phys. Chem. Liq. <u>1987</u> , 16, 179-187.
(3) Benzene; C ₆ H ₆ ;	[71-43-2]	
VARIABLES:		PREPARED BY:
T/K = 299, Solvent	composition	W.E. Acree, Jr.
EXPERIMENTAL VALUES ⁸ t = 26.0 °C		
x3 ^(s)	x3	x ₁
0.0000	0.0000	0.00721
0.2301	0.2274	0.01177
0.3021	0.2980	0.01373
0.5482	0.5348	0.02446
0.6520	0.6314	0.03165
0.7444	0.7157	0.03854
0.8799	0.8345	0.05160
1.0000	0.9368	0.06316
fraction solubi the ternary sol	lity of the solute; x3: 1	solvent mixture; x ₁ : mole mole fraction of component 3 in
fraction solubi	lity of the solute; x ₃ : a ution.	mole fraction of component 3 in
fraction solubi	lity of the solute; x ₃ : a ution.	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION
fraction solubi the ternary sol the ternary sol METHOD: APPARATUS/PI Constant temperatur thermometer, and ar spectrophotometer. Binary solvent mixt weight. Excess solu in amber glass bott equilibrate for set temperature. Attai was verified by set measurements and by brium from supersat saturated solutions a coarse filter int flasks, weighed and	AUXILIARY AUXILIARY ROCEDURE The bath, calorimetric in ultraviolet/visible cures were prepared by the and solvent placed thes and allowed to veral days at constant imment of equilibrium veral repetitive y approaching equili- curation. Aliquots of a transferred through to tared volumetric d diluted with methanol. brmined spectrophoto-	mole fraction of component 3 in

COMPONENTS: ORIGINAL MEASUREMENTS: (1) Pyrene; C₁₆H₁₀; [129-00-0] Judy, C.L.; Pontikos, N.M.; Acree, W.E., Jr. (2) Cyclooctane; C₈H₁₆; [292-64-8] Phys. Chem. Liq. 1987, 16, 179-187. (3) Benzene; C₆H₆; [71-43-2] VARIABLES: PREPARED BY: T/K = 299, Solvent composition W.E. Acree, Jr. EIPERIMENTAL VALUES^a t = 26.0 °Cx,^(s) Xz X1 0.0000 0.01956 0.0000 0.2007 0.02763 0.1952 0.2969 0.2873 0.03236 0.5031 0.4868 0.04327 0.6026 0.5731 0.04898 0.6982 0.6607 0.05371 0.8517 0.8007 0.05993 1.0000 0.9368 0.06316 ^a  $x_{\tau}^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_{1}$ : mole fraction solubility of the solute;  $x_3$ : mole fraction of component 3 in the ternary solution. AUXILIARY INFORMATION SOURCE AND PURITY OF MATERIALS: METHOD: APPARATUS/PROCEDURE (1) 99 %, Aldrich Chemical Company, Constant temperature bath, calorimetric Milwaukee, Wisconsin, USA, recrystal-lized 3 times from absolute ethanol. thermometer, and an ultraviolet/visible spectrophotometer. Binary solvent mixtures were prepared by Binary Bolvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili-brium from supersaturation. Aliquots of (2) Gold Label, 99+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. before use. Concentrations determined spectrophoto-metrically at 372 nm. ESTIMATED ERRORS:  $T/K: \pm 0.05.$  $x_3^{(6)}: \pm 0.0001.$  $x_1: \pm 1.5$  % (relative error).

COMPONENTS: (1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0] (2) n-Hexane; C ₆ H ₁₄ ; [110-54-3] (3) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]	
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3] (3) 1,1-Oxybisbutane; C ₈ H ₁₈ O;	ORIGINAL MEASUREMENTS: Wallach, J.R.; Tucker, S.A.; Oswalt, B.M.;
(3) 1,1-Oxybisbutane; C ₈ H ₁₈ O;	Murral, D.J.; Acree, W.E., Jr.
[142-96-1]	J. Chem. Eng. Data <u>1989</u> , 34, 70-73.
VARIABLES:	PREPARED BY:
T/K = 299, Solvent composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALUES ^a t = 26.0 °C	
x2 ^(s) x2	x1
0.0000 0.0000	0.0298
0.1879 0.1831	0.0255
0.2536 0.2475	0.0242
0.4650 0.4561	0.0190
0.5694 5598	0.0168
0.6635 0.6537	0.0148
0.8350 0.8256	0.0113
1.0000 0.9914	0.0086
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.
Binary solvent mixtures were prepared by	(2) 99 %, Aldrich Chemical Company.
weight. Excess solute and solvent placed	(3) Gold Label, 99+ %, Aldrich Chemical
in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium	Company.
in amber glass bottles and allowed to equilibrate for several days at constant	
in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	Company. Components 2 and 3 were stored over molecular sieves and distilled shortly

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COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]	Wallach, J.R.; Tucker, S.A.; Oswalt, B.M.; Murral, D.J.; Acree, W.E., Jr.
(2) n-Heptane; C ₇ H ₁₆ ; [142-82-5]	J. Chem. Eng. Data <u>1989</u> , 34, 70-73.
(3) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]	
VARIABLES:	PREPARED BY:
T/K = 299, Solvent composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALUES ^a t = 26.0 °C	
x3 ⁽⁶⁾ x3	×1
0.0000 0.0000	0.0112
0.1915 0.1888	0.0143
0.3678 0.3615	0.0170
0.4995 0.4896	0.0198
0.5744 0.5622	0.0213
0.7708 0.7512	0.0254
0.8733 0.8495	0.0273
1.0000 0.9702	0.0298
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> </ul>
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to	(2) HPLC Grade, 99.7+ %, Aldrich Chemical Company.
equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive	<ul> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> </ul>
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 372 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS1
	$\frac{T/Kr \pm 0.05.}{x_{3}^{(2)}; \pm 0.0001.}$ x ₁ : $\pm 1$ % (relative error).

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Components :	ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]	Wallach, J.R.; Tucker, S.A.; Oswalt, B.M.;
(2) n-Octane; C ₈ H ₁₈ ; [111-65-9]	Murral, D.J.; Acree. W.E., Jr.
(3) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]	J. Chem. Eng. Data <u>1989</u> , 34, 70-73.
VARIABLES:	PREPARED BY:
T/K = 299, Solvent composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALUES ⁸ $t = 26.0 \ ^{\circ}C$	
x2 ^(s) x2	×1
0.0000 0.0000	0.0298
0.2133 0.2078	0.0259
0.3501 0.3419	0.0233
0.5155 0.5049	0.0205
0.6123 0.6007	0.0190
0.8146 0.8013	0.0163
1.0000 0.9858	0.0142
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant	(2) Gold Label, 99+ %, Aldrich Chemical Company.
temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili-	(3) Gold Label, 99+ %, Aldrich Chemical Company.
measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 372 nm.	Components 2 and 3 were stored over molecular sieves and distilled shortly before use.
	ESTIMATED ERRORS:
	$\begin{array}{l} T/K: \pm 0.05. \\ x_{2}^{(s)}: \pm 0.0001. \\ x_{1}^{(s)}: \pm 1 \ \ \text{(relative error)}. \end{array}$

Components:		ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁	0; [129-00-0]	Wallach, J.R.; Tucker, S.A.; Oswalt, B.M. Murral, D.J.; Acree, W.E., Jr.
<pre>(2) Cyclohexane; C₆H₁₂; [110-82-7] (3) 1,1-Oxybisbutane; C₈H₁₈O;     [142-96-1]</pre>		J. Chem. Eng. Data <u>1989</u> , 34, 70-73.
T/K = 299, Solvent composition		W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALU t = 26.0 °C	ES ^a	••••••••••••••••••••••••••••••••••••••
x2 ^(s)	*2	x ₁
0.0000	0.0000	0.0298
0.1519	0.1477	0.0274
0.2944	0.2870	0.0251
0.5097	0.4989	0.0211
0.6078	0.5961	0.0192
0.7017	0.6896	0.0172
0.7038	0.6918	0.0171
0.8620	0.8502	0.0137
1.0000 ^a x ₂ ^(s) : initi fraction solution the ternary :	0.9890 Lal mole fraction of binary ubility of the solute; x ₂ : solution.	0.0110 solvent mixture; x ₁ : mole mole fraction of component 2 in
a x2 ^(s) : initi fraction solu	Lal mole fraction of binary ubility of the solute; $x_2$ :	Bolvent mixture: y , male
a x ₂ ^(s) : initi fraction solu	Lal mole fraction of binary ubility of the solute; x ₂ : solution.	Bolvent mixture: y , male
a _{X2} ^(s) : initi fraction solution the ternary the ternary	Lal mole fraction of binary ubility of the solute; x ₂ : solution. AUXILIARY /PROCEDURE	Solvent mixture; x ₁ : mole mole fraction of component 2 in (INFORMATION SOURCE AND PURITY OF MATERIALS:
<pre>a _{x2}^(s): initi fraction solution the ternary the ternary Constant temperative thermometer, and spectrophotometer</pre>	Lal mole fraction of binary ubility of the solute; x ₂ : solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r.	Bolvent mixture; x ₁ : mole mole fraction of component 2 in ? INFORMATION
<ul> <li>a x2^(s): initial fraction solution fraction solution the ternary in the ternary solution ternary soluti ternary solution ternary solution ternary solution ternary so</li></ul>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company.
<pre>a x2^(s); initi fraction solution the ternary in the ternary in the ternary in the ternary in the ternary in the ternary in the ternary in the ternary in the ternary in the ternary</pre>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical
<pre>a x2^(s): initi fraction sol the ternary the ternary methop: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess so in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed a</pre>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol.	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical
<pre>a x2^(s): initi fraction sol the ternary the ternary Constant temperat thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass b equilibrate for temperature. At was verified by measurements and brium from super saturated solution a coarse filter flasks, weighed Concentrations do</pre>	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by olute and solvent placed ottles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol.	Solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, lized 3 times from absolute ethanol. (2) HPLC Grade, 99.9+ %, Aldrich Chemical Company. (3) Gold Label, 99+ %, Aldrich Chemical Components 2 and 3 were stored over molecular sieves and distilled shown

ORIGINAL MEASUREMENTS:
Wallach, J.R.; Tucker, S.A.; Oswalt, B.M.;
Murral, D.J.; Acree, W.E., Jr. J. Chem. Eng. Data <u>1989</u> , 34, 70-73.
5. Chem. Eng. Data <u>1907</u> , 54, 10-75.
PREPARED BY:
W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
<b>v</b> .
×1 0.0298
0.0278
0.0260
0.0259
0.0223
0.0206
0.0187
0.0159
0.0130
Y INFORMATION
SOURCE AND PURITY OF MATERIALS:
<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> </ul>
<ul> <li>(2) Gold Label, 99+ %, anhydrous, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>
ESTIMATED ERRORS: $T/K: \pm 0.05.$ $x_2^{(s)}: \pm 0.0001.$ $x_1: \pm 1$ % (relative error).

ORIGINAL MEASUREMENTS: Wallach, J.R.; Tucker, S.A.; Oswalt, B.M.; Murral, D.J.; Acree, W.E., Jr.
J. Chem. Eng. Data <u>1989</u> , 34, 70-73.
<b>PREPARED BY:</b> W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
<i>x</i> 1
0.0298
0.0237
0.0180
0.0156
0.0134
0.0100
0.0071
INFORMATION
<ul> <li>SOURCE AND PURITY OF MATERIALS:</li> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>(2) HPLC Grade, 99.7+ %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]	Wallach, J.R.; Tucker, S.A.; Oswalt, B.M.;
(2) t-Butylcyclohexane; C ₁₀ H ₂₀ ; [3178-22-1]	Murral, D.J.; Acree, W.E., Jr.
(3) 1,1-Oxybisbutane; C ₈ H ₁₈ O; [142-96-1]	J. Chem. Eng. Data <u>1989</u> , 34, 70-73.
VARIABLES:	PREPARED BY:
T/K = 299, Solvent composition	W.E. Acree, Jr., P.R. Naidu and S.A. Tucker
EXPERIMENTAL VALUES ⁸ t = 26.0 °C	
x2 ^(s) x2	<b>x</b> 1
0.0000 0.0000	0.0298
0.1970 0.1915	0.0278
0.3882 0.3785	0.0250
0.4961 0.4844	0.0235
0.5987 0.5852	0.0225
0.7905 0.7752	0.0194
1.0000 0.9841	0.0159
AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE	
Constant temperature bath, calorimetric	SOURCE AND PURITY OF MATERIALS:
thermometer, and an ultraviolet/visible spectrophotometer.	SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.
spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.
spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant	<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>(2) 99 %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over</li> </ul>
spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	<ol> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>(2) 99 %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly</li> </ol>
spectrophotometer. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in amber glass bottles and allowed to equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto-	<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> <li>(2) 99 %, Aldrich Chemical Company.</li> <li>(3) Gold Label, 99+ %, Aldrich Chemical Company.</li> <li>Components 2 and 3 were stored over molecular sieves and distilled shortly before use.</li> </ul>

Components:		ORIGINAL MEASUREMENTS: Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne, A.I. J. Chem. Soc., Faraday Trans. 1990, 86, 2197-2201. PREPARED BY: W.E. Acree, Jr., P.R. Naidu, S.A. Tucker and A.I. Zvaigzne			
(1) Pyrene; $C_{16}H_{10}$ ; [129-00-0] (2) n-Hexane; $C_6H_{14}$ ; [110-54-3] (3) 1,4-Dichlorobutane; $C_4H_8Cl_2$ ; [110-56-5] VARIABLES: T/K = 299, Solvent composition					
			EXPERIMENTAL VALUE t = 26.0 °C	S ^a	
			x3 ^(s)	<i>X</i> 3	×
			0.0000	0.0000	0.0085
			0.0928	0.0913	0.0162
0.1745	0.1703	0.0243			
0.2383	0.2307	0.0317			
0.4437	0.4170	0.0602			
0.5420	0.5023	0.0733			
0.6579	0.6001	0.0879			
0.8223	0.7365	0.1044			
0.9093					
1.0000 ^a x. ^(s) : initi		0.1084 0.1097 solvent mixture; x ₁ : mole mole fraction of component 3 in			
1.0000 ^a x ₃ ^(s) : initi. fraction solu	0.8903 al mole fraction of binary bility of the solute; $x_3$ : r	0.1097 golvent mixture; x.: mole			
1.0000 ^a x ₃ ^(s) : initi. fraction solu	0.8903 al mole fraction of binary bility of the solute; $x_3$ : r solution.	0.1097 golvent mixture; x.: mole			
1.0000 ^a x ₃ ^(s) : initi. fraction solu	0.8903 al mole fraction of binary bility of the solute; x ₃ : r solution. AUXILIARY	0.1097 solvent mixture; x ₁ : mole mole fraction of component 3 in			
1.0000 a x3 ^(s) : initia fraction solu the ternary solution <b>METHOD: APPARATUS/</b> Constant temperate thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for solution temperature. Att was verified by so measurements and brium from supers saturated solution a coarse filter if flasks, weighed a	0.8903 al mole fraction of binary bility of the solute; x ₃ : r solution. AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible c. ixtures were prepared by blute and solvent placed bitles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	0.1097 Bolvent mixture; x ₁ : mole mole fraction of component 3 in TINFORMATION			

		510
COMPONENTS :	<u></u>	ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]		Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne,
(2) n-Heptane; C ₇ H ₁₆ ; [142-82-5]		A.I.
(3) 1,4-Dichlorobutane; C ₄ H ₈ Cl ₂ ; [110-56-5]		J. Chem. Soc., Faraday Trans. <u>1990</u> , 86, 2197-2201.
VARIABLES: T/K = 299, Solvent composition		PREPARED BY:
		W.E. Acree, Jr., P.R. Naidu, S.A. Tucker and A.I. Zvaigzne
EXPERIMENTAL VALUE t = 26.0 °C	2S ⁸	
x3 ^(S)	×3	×1
0.0000	0.0000	0.0110
0.1019	0.0999	0.0199
0.1946	0.1886	0.0306
0.2541	0.2449	0.0361
0.4668	0.4360	0.0660
0.5695	0.5233	0.0811
0.6673	0.6053	0.0929
0.8323	0.7425	0.1079
1.0000	0.8903	0.1097
	AUXILIARY	INFORMATION
METHOD: APPARATUS	/PROCEDURE	SOURCE AND PURITY OF MATERIALS:
Constant temperat	ture bath, calorimetric an ultraviolet/visible	<ul> <li>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.</li> </ul>
weight. Excess so in amber glass bo equilibrate for a temperature. Att was verified by a measurements and brium from superr saturated solution a coarse filter a flasks, weighed a	ixtures were prepared by olute and solvent placed obtles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto- 2 nm.	<pre>(2) HPLC Grade, 99+ %, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York, USA. Components 2 and 3 were stored over molecular sieves and distilled shortly before use. ESTIMATED ERRORS: T/K: ± 0.05. x₃⁽⁶⁾: ± 0.0001. x₁: ± 1.5 % (relative error).</pre>
		l

		OPTOTNET MERCIDEMENTS.
COMPONENTS:	. (100-00-01	ORIGINAL MEASUREMENTS: Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne,
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0] (2) n-Octane: C _{-H-1} ; [111-65-9]		Acree, W.E., Jr.; Tucker, S.A.; Zvalgzne, A.I. J. Chem. Soc., Faraday Trans. <u>1990</u> , 86, 2197-2201.
(2) n-Octane; $C_8H_{18}$ ; [111-65-9] (3) 1 4-Dichlorobutane; C.H.Cl.;		
(3) 1,4-Dichlorobutane; C ₄ H ₈ Cl ₂ ; [110-56-5]		
VARIABLES: T/K = 299, Solvent composition		PREPARED BY:
		W.E. Acree, Jr., P.R. Naidu, S.A. Tucker and A.I. Zvaigzne
EXPERIMENTAL VALU t = 26.0 °C	ES ^a	
x3 ^(s)	x3	<b>*</b> 1
0.0000	0.0000	0.0141
0.1130	0.1104	0.0233
0.2119	0.2047	0.0338
0.2735	0.2621	0.0415
0.4930	0.4593	0.0683
0.5937	0.5460	0.0803
0.6867	0.6234	0.0922
0.8519	0.7604	0.1074
1.0000	0.8903	0.1097
a x3 ^(\$) : initi fraction solution the ternary (	al mole fraction of binary ubility of the solute; x ₃ : m solution.	solvent mixture; $x_1$ : mole mole fraction of component 3 in
fraction solu	ubility of the solute; x3: n	solvent mixture; x ₁ : mole nole fraction of component 3 in
fraction solu	bility of the solute; x ₃ : n solution.	solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION
fraction solution the ternary of ternary o	AUXILIARY	nole fraction of component 3 in
fraction solution the ternary of ETHOD: APPARATUS, Constant temperat	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company,
fraction solution the ternary of the ternary of the ternary of thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo	AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-
fraction soluthe ternary of the ternary solution	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible c. ixtures were prepared by oblute and solvent placed oblutes and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili-	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) 99+ %, anhydrous, Aldrich Chemical
fraction solution the ternary of the ternary of the ternary of the ternary of thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for a temperature. At was verified by of measurements and brium from super saturated solution a coarse filter of flasks, weighed a	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by oblute and solvent placed obtles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophto-	<pre>INFORMATION INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) 99+ %, anhydrous, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York,</pre>
fraction solution the ternary of the ternary of the ternary of the ternary of the ternary of thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass be equilibrate for of temperature. Att was verified by temperature. Att was verified by the ternary of the saturated solution a coarse filter i flasks, weighed a Concentrations do	AUXILIARY AUXILIARY /PROCEDURE ture bath, calorimetric an ultraviolet/visible r. ixtures were prepared by oblute and solvent placed obtles and allowed to several days at constant tainment of equilibrium several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) 99+ %, anhydrous, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York, USA. Components 2 and 3 were stored over molecular sieves and distilled shortl</pre>

(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-		
(1) Pyrene; C ₁₄ H ₁₀ ; [129-00-		ORIGINAL MEASUREMENTS:
- 1010**	-0]	Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne, A.I.
(2) Cyclohexane; $C_6H_{12}$ ; [110-82-7]		J. Chem. Soc., Faraday Trans. <u>1990</u> , 86,
(3) 1,4-Dichlorobutane; C ₄ [110-56-5]	i ₈ Cl ₂ ;	2197-2201.
VARIABLES: T/K = 299, Solvent composition		PREPARED BY:
		W.E. Acree, Jr., P.R. Naidu, S.A. Tucker and A.I. Zvaigzne
EXPERIMENTAL VALUES ⁸ t = 26.0 °C		
$x_3^{(s)}$ $x_3$		<b>x</b> 1
0.0000 0.00	00	0.0110
0.0792 0.07	76	0.0200
0.1475 0.14	33	0.0283
0.1952 0.18	в3	0.0351
0.3914 0.36	74	0.0613
0.4909 0.45	49	0.0734
0.5860 0.53	60	0.0854
0.7949 0.71	42	0.1015
1.0000 0.89	03	0.1097
	AUXILIARY	INFORMATION
METHOD: APPARATUS/PROCEDURE		INFORMATION SOURCE AND PURITY OF MATERIALS:
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and an ultrav. spectrophotometer. Binary solvent mixtures we	calorimetric iolet/visible	r

Components:		ORIGINAL MEASUREMENTS:	
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]		Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne, A.I.	
(2) Methylcyclohexane; C ₇ H ₁₄ ; [108-87-2]		J. Chem. Soc., Faraday Trans. <u>1990</u> , 86,	
<pre>(3) 1,4-Dichlorobutane; C₄H₈Cl₂; [110-56-5]</pre>		2197-2201.	
VARIABLES:		PREPARED BY:	
T/K = 299, Solvent composition		W.E. Acree, Jr., P.R. Naidu, S.A. Tucker and A.I. Zvaigzne	
t = $26.0$ °C	25 ⁸		
x3 ^(s)	x3	×1	
0.0000	0.0000	0.0130	
0.0955	0.0933	0.0233	
0.1782	0.1724	0.0328	
0.2270	0.2182	0.0389	
0.4328	0.4042	0.0661	
0.5356	0.4940	0.0777	
0.6323	0.5765	0.0882	
0.7915	0.7104	0.1025	
1.0000 ^a x ₃ ^(s) : initi fraction solu the ternary s	0.8903 al mole fraction of binary bility of the solute; $x_3$ : molution.	0.1097 solvent mixture; x ₁ : mole mole fraction of component 3 in	
^a x ₃ ^(s) : initi fraction solu	al mole fraction of binary bility of the solute; $x_3$ :	solvent mixture; x,: mole	
^a x ₃ ^(s) : initi fraction solu	al mole fraction of binary ability of the solute; $x_3$ : nolution.	solvent mixture; x,: mole	
<pre>* x3^(s): initi fraction solution the ternary s</pre>	al mole fraction of binary ability of the solute; x ₃ : n solution. AUXILIARY	Bolvent mixture; x1: mole mole fraction of component 3 in	
<pre>* x₃^(S): initi fraction solu the ternary s the ternary s ETHOD: APPARATUS/ Constant temperat</pre>	al mole fraction of binary ability of the solute; x ₃ : n solution. AUXILIARY PROCEDURE sure bath, calorimetric an ultraviolet/visible	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company,	
<ul> <li>* x3⁽⁵⁾; initi fraction solution the ternary solution</li> <li>* ETHOD: APPARATUS/</li> <li>Constant temperation</li> <li>Constant temperation</li> <li>* and spectrophotometer</li> <li>* Binary solvent minimized</li> <li>* and spectrophotometer</li> </ul>	al mole fraction of binary ability of the solute; x ₃ : r solution. AUXILIARY PROCEDURE ture bath, calorimetric an ultraviolet/visible to an ultraviolet/visible to an ultraviolet/visible to blute and solvent placed obttles and allowed to	Solvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND FURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-	
<ul> <li>* x₃^(S); initi fraction solution the ternary solution the ternary solution</li> <li>* THOD: APPARATUS/</li> <li>Constant temperature/</li> <li>Constant temperature/</li> <li>Binary solvent mi weight. Excess so in amber glass be equilibrate for so temperature. Att was verified by some asurements and</li> </ul>	al mole fraction of binary ability of the solute; x ₃ : r solution. AUXILIARY PROCEDURE cure bath, calorimetric an ultraviolet/visible cures were prepared by blute and solvent placed obtels and allowed to several days at constant calmment of equilibrium several repetitive by approaching equili-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND FURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) 99+ %, anhydrous, Aldrich Chemical</pre>	
* x3 ^(S) : initi fraction solu the ternary solution the ternary solution the ternary solution the ternary solution thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for so temperature. Att was verified by so measurements and brium from supers saturated solution a coarse filter if flasks, weighed a	AUXILIARY AUXILIARY PROCEDURE Sure bath, calorimetric an ultraviolet/visible C. xtures were prepared by plute and solvent placed by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND FURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) 99+ %, anhydrous, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York, USA. Components 2 and 3 were stored over</pre>	
<ul> <li>* x3^(S): initi fraction solution the ternary solution the ternary solution t</li></ul>	AUXILIARY AUXILIARY PROCEDURE Sure bath, calorimetric an ultraviolet/visible C. xtures were prepared by plute and solvent placed by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. etermined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND FURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) 99+ %, anhydrous, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York, USA. Components 2 and 3 were stored over molecular sieves and distilled short!</pre>	

Components :		ORIGINAL MEASUREMENTS:				
<ol> <li>Pyrene; C₁₆H₁₀; [129-00-0]</li> <li>2,2,4-Trimethylpentane; C₈H₁₈; [540-84-1]</li> <li>1,4-Dichlorobutane; C₄H₈Cl₂;</li> </ol>		Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne, A.I. J. Chem. Soc., Faraday Trans. <u>1990</u> , 86,				
				2197-2201.		
		[110-56-5]				
VARIABLES: T/K = 299, Solvent composition EXPERIMENTAL VALUES ^a t = 26.0 °C		PREPARED BY: W.E. Acree, Jr., P.R. Naidu, S.A. Tucker and A.I. Zvaigzne				
				*3 ⁽⁸⁾	*3	<b>x</b> 1
				0.0000	0.0000	0.0071
0.1163	0.1147	0,0136				
0.2129	0.2083	0.0214				
0.2737	0.2661	0.0277				
0.4940	0.4671	0.0545				
0.6464	0.5971	0.0763				
0.6898	0.6324	0.0832 0.1032				
0.8535	0.7654					
1.0000 ^a x3 ^(s) : init fraction sol the ternary	0.8903 ial mole fraction of binary lubility of the solute; $x_3$ ; r solution.	0.1097 Bolvent mixture; x ₁ : mole mole fraction of component 3 in				
^a x ₃ ^(s) : init fraction sol	ial mole fraction of binary lubility of the solute; $x_3$ :	solvent mixture; x.: mole				
^a x ₃ ^(s) : init fraction sol	ial mole fraction of binary lubility of the solute; $x_3$ : r solution.	solvent mixture; x.: mole				
^a x ₃ ^(s) : init fraction sol	ial mole fraction of binary lubility of the solute; x ₃ : r solution.	Bolvent mixture; x ₁ : mole mole fraction of component 3 in				
a x3 ^(s) ; init fraction sol the ternary the ternary <b>GETHOD: APPARATUS</b> Constant tempera	ial mole fraction of binary lubility of the solute; x ₃ : r solution. AUXILIARY S/PROCEDURE ature bath, calorimetric i an ultraviolet/visible	Bolvent mixture; x ₁ : mole nole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company,				
a x3 ^(s) : init fraction sol the ternary the ternary <b>GETHOD: APPARATUS</b> Constant tempers thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass t	ial mole fraction of binary lubility of the solute; x3: r solution. AUXILIARY B/PROCEDURE ature bath, calorimetric d an ultraviolet/visible er. mixtures were prepared by solute and solvent placed pottles and allowed to	Bolvent mixture; x ₁ : mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.				
a x3 ^(s) : init fraction sol the ternary the ternary <b>GETHOD: APPARATUS</b> Constant tempers thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass t equilibrate for temperature. At was verified by measurements and	ial mole fraction of binary lubility of the solute; x3: r solution. AUXILIARY AUXILIARY S/PROCEDURE Ature bath, calorimetric d an ultraviolet/visible er. Mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant trainment of equilibrium several repetitive d by approaching equili-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.7 %, Aldrich Chemical</pre>				
<pre>a x₃^(s); init fraction sol the ternary the ternary GETHOD: APPARATUS Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass t equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed</pre>	ial mole fraction of binary lubility of the solute; x ₃ : r solution. AUXILIARY B/PROCEDURE ature bath, calorimetric d an ultraviolet/visible sr. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ctainment of equilibrium several repetitive d by approaching equili- resaturation. Aliquots of cons transferred through into tared volumetric and diluted with methanol. letermined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York,</pre>				
a x3 ^(s) : init fraction sol the ternary the ternary <b>GETHOD: APPARATUS</b> Constant tempera thermometer, and spectrophotomete Binary solvent m weight. Excess s in amber glass h equilibrate for temperature. At was verified by measurements and brium from super saturated soluti a coarse filter flasks, weighed Concentrations d	ial mole fraction of binary lubility of the solute; x ₃ : r solution. AUXILIARY B/PROCEDURE ature bath, calorimetric d an ultraviolet/visible sr. mixtures were prepared by solute and solvent placed bottles and allowed to several days at constant ctainment of equilibrium several repetitive d by approaching equili- resaturation. Aliquots of cons transferred through into tared volumetric and diluted with methanol. letermined spectrophoto-	<pre>solvent mixture; x₁: mole mole fraction of component 3 in INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) puriss, 99+ %, Fluka Chemical Corporation, Ronkonkoma, New York, USA. Components 2 and 3 were stored over molecular sieves and distilled short:</pre>				

COMPONENTS:	
	ORIGINAL MEASUREMENTS:
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]	Krezewki, R.; Smutek, M.
(2) Methylbenzene; C ₇ H ₈ ; [108-88-3]	Collection Czech. Chem. Commun. <u>1967</u> , 32, 1258-1259.
(3) 2-Propanone; C ₃ H ₆ O; [67-64-1]	
VARIABLES:	PREPARED BY:
T/K = 293, Solvent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne
EXPERIMENTAL VALUES ⁸ $t = 20.0  ^{\circ}C$	
x2 ^{(s),b} x2	×1
0.000 0.000	0.0284
0.136 0.131	0.0395
0.296 0.281	0.0513
0.486 0.456	0.0609
0.596 0.558	0.0635
0.716 0.669	0.0656
1.000 0.943	0.0567
AUXILIARY	
	INFORMATION
METHOD: APPARATUS/PROCEDURE Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at constant temperature. Aliquots of satur- ated solutions were transferred into tared containers and weighed. Solubili- ties were calculated from the weight of the solid residue which remained after the solvent had evaporated.	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 95 % initial purity, source not specified, was recrystallized several times from toluene and ethanol to give a melting point temperature of 150.5-150.9 °C. (2) 99 %, Urxovy Zavody, Czech., was used as received. (3) Commercial sample, purity and source not specified, was dehydrated and distilled shortly before use.</pre>

Components :		
	ORIGINAL MEASUREMENTS:	
(1) Pyrene; C ₁₆ H ₁₀ ; [129-00-0]	Krezewki, R.; Smutek, M.	
(2) Methylbenzene; C ₇ H ₈ ; [108-88-3]	Collection Czech. Chem. Commun. <u>1967</u> , 32, 1258-1259.	
(3) Ethanol; C ₂ H ₆ O; [64-17-5]		
VARIABLES:	PREPARED BY:	
T/K = 293, Solvent composition	W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne	
EXPERIMENTAL VALUES ⁸ t = 20.0 °C	4	
x2 ^{(s),b} x2	<i>x</i> 1	
0.000 0.000	0.00288	
0.111 0.110	0.00584	
0.250 0.247	0.0117	
0.428 0.419	0.0221	
0.667 0.641	0.0385	
0.819 0.778	0.0495	
1.000 0.943	0.0567	
AUXILIARY	INFORMATION	
AUXILIARY METHOD: APPARATUS/PROCEDURE	INFORMATION SOURCE AND PURITY OF MATERIALS:	

ORIGINAL MEASUREMENTS: COMPONENTS: Krezewki, R.; Smutek, M. (1) Pyrene; C₁₆H₁₀; [129-00-0] (2) Methylbenzene; C7H8; [108-88-3] Collection Czech. Chem. Commun. 1967, 32, 1258-1259. (3) Pyridine; C₅H₅N; [110-86-1] VARIABLES: PREPARED BY: T/K = 293, Solvent composition W.E. Acree, Jr., P.R. Naidu and A.I. Zvaigzne EXPERIMENTAL VALUES^a  $t = 20.0 \,^{\circ}C$ x,^{(s),b} **x**2 x₁ 0.000 0.000 0.0873 0.177 0.161 0.0884 0.364 0.333 0.0858 0.563 0.518 0.0798 0.774 0.719 0.0715 1.000 0.943 0.0567 ^a  $x_2^{(s)}$ : initial mole fraction of binary solvent mixture;  $x_1$ : mole fraction solubility of the solute;  $x_2$ : mole fraction of component 2 in the ternary solution. ^b computed by compiler. AUXILIARY INFORMATION METHOD: APPARATUS/PROCEDURE SOURCE AND PURITY OF MATERIALS: 95 % initial purity, source not specified, was recrystallized several times from toluene and ethanol to Constant temperature bath, thermometer, and a precision balance. Binary solvent mixtures were prepared by weight. Excess solute and solvent placed in closed glass containers and allowed to equilibrate for several hours at give a melting point temperature of 150.5-150.9 °C. (2) 99 %, Urxovy Zavody, Czech., was constant temperature. Aliquots of saturused as received. ated solutions were transferred into tared containers and weighed. Solubili-ties were calculated from the weight of (3) Purity not specified, Urxovy Zavody, was treated with potassium permanga-nate, dried over potassium hydroxide and then distilled before use. the solid residue which remained after the solvent had evaporated. ESTIMATED ERRORS: T/K: precision  $\pm$  0.05.  $x_2$ :  $\pm$  0.001 (compiler).  $x_1$ :  $\pm$  3 % (relative error; compiler).

THIANTHRENE SOLUBILITIES IN BINARY SOLVENT MIXTURES

I. Alkane + Alkane (including cycloalkanes)

n-hexane + cyclohexane n-heptane + cyclohexane n-octane + cyclohexane methylcyclohexane + cyclohexane cyclooctane + cyclohexane 2,2,4-trimethylpentane + cyclohexane

#### II. <u>Alkane + Aromatic Hydrocarbon</u>

None

III. Alkane + Ester

None

IV. Alkane + Ether

None

V. <u>Alkane + Chloroalkane</u>

None

VI. Ether + Chloroalkane

None

VII. Miscellaneous

None

JZZ	·····	
Components:	ORIGINAL MEASUREMENTS:	
(1) Thianthrene; C ₁₂ H ₈ S ₂ ; [92-85-3]	Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne, A.I.	
(2) n-Hexane; C ₆ H ₁₄ ; [110-54-3]	Phys. Chem. Liq. <u>1990</u> , 21, 45-49.	
(3) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]		
VARIABLES:	PREPARED BY:	
T/K = 298, Solvent composition	W.E. Acree, Jr., P.R. Naidu, S.A. Tucker, and A.I. Zvaigzne	
EXPERIMENTAL VALUES ^a t = 25.0 °C		
x2 ^(s) x2	×1	
0.0000 0.0000	0.00587 .	
0.1754 0.1744	0.00543	
0.3094 0.3078	0.00505	
0.4494 0.4473	0.00464	
0.5538 0.5514	0.00432	
0.7567 0.7538	0.00380	
0.8677 0.8647	0.00351	
1.0000 0.9968	0.00320	
AUXILIARY	INFORMATION	
METHOD: APPARATUS/PROCEDURE	SOURCE AND PURITY OF MATERIALS:	
Constant temperature bath, calorimetric thermometer, and an ultraviolet/visible spectrophotometer.	(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.	
Binary solvent mixtures were prepared by weight. Excess solute and solvent placed	(2) 99 %, Aldrich Chemical Company.	
in amber glass bottles and allowed to equilibrate for several days at constant	(3) HPLC Grade, 99.9+ %, Aldrich Chemical	
temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 255 nm.	Company. Components 2 and 3 were stored over molecular sieves and distilled shortly before use.	
	ESTIMATED ERRORS:	
	T/K: $\pm 0.05$ . $x_2^{(8)}$ : $\pm 0.0001$ . $x_1$ : $\pm 1$ % (relative error).	

COMPONENTS :		ORIGINAL MEASUREMENTS:	
(1) Thianthrene; C ₁₂ H ₈ S ₂ ; [92-85-3]		Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne, A.I.	
(2) n-Heptane; $C_7H_{16}$ ; [142-82-5]			
(3) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]		Phys. Chem. Liq. <u>1990</u> , 21, 45-49. PREPARED BY:	
EXPERIMENTAL VALUE	5S ^a		
x ₂ ^(s)	<b>x</b> ₂	<b>x</b> 1	
0.0000	0.0000	0.00587	
0.1593	0.1584	0.00550	
0.3263	0.3246	0.00508	
0.4260	0.4239	0.00485	
0.5284	0.5260	0.00455	
0.5284	0.7448	0.00400	
0.7478	0.8626	0.00375	
1.0000	0.9965	0.00346	
* x ₂ ^(s) ; initi fraction solution the ternary s		solvent mixture; $x_1$ : mole mole fraction of component 2 in	
fraction solu	ibility of the solute; x ₂ ; solution.	mole fraction of component 2 in	
fraction solution the ternary f	ability of the solute; x ₂ : solution.	mole fraction of component 2 in	
fraction solu the ternary solution <b>METHOD: APPARATUS</b> Constant temperati thermometer, and spectrophotometer Binary solvent mi weight. Excess so in amber glass bo equilibrate for s temperature. Att was verified by s measurements and brium from super saturated solution a coarse filter is flasks, weighed a	AUXILIARY //PROCEDURE ture bath, calorimetric an ultraviolet/visible tures were prepared by plute and solvent placed ottles and allowed to several allowed to several repetitive by approaching equili- saturation. Aliquots of ons transferred through into tared volumetric and diluted with methanol. atermined spectrophoto-	mole fraction of component 2 in	

Components :		ORIGINAL MEASUREMENTS:	
(1) Thianthrene; C ₁₂ H ₈ S ₂ ; [92-85-3]		Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne,	
(2) n-Octane; C ₈ H ₁₈ ; [111-65-9]		A.I. Phys. Chem. Liq. <u>1990</u> , 21, 45-49.	
(3) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]			
WINTIN BO.		PREPARED BY:	
VARIABLES:		W.E. Acree, Jr., P.R. Naidu, S.A. Tucker	
T/K = 298, Solvent composition		and A.I. Zvaigzne	
EXPERIMENTAL VALUE	rs ^a		
x ₂ ^(\$)	x,	×1	
0.0000	0.0000	0.00587	
0.1444	0.1436	0.00552	
0.3019	0.3003	0.00517	
0.4010	0.3990	0.00498	
0.5006	0.4982	0.00478	
0.6683	0.6653	0.00447	
0.7228	0.7196	0.00439	
0.8528	0.8493	0.00416	
1.0000	0.9961	0.00392	
	AUXILIARY		
METHOD: APPARATUS	PROCEDURE	SOURCE AND PURITY OF MATERIALS:	
thermometer, and spectrophotometer		(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absoute ethanol.	
weight. Excess so in amber glass bo	ixtures were prepared by plute and solvent placed ottles and allowed to	(2) 99+ %, anhydrous, Aldrich Chemical Company.	
temperature. At	several days at constant tainment of equilibrium	(3) HPLC Grade, 99.9+ %, Aldrich Chemical	
was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 255 nm.		Company. Components 2 and 3 were stored over molecular sieves and distilled shortly before use.	
		ESTIMATED ERRORS:	
		$T/K: \pm 0.05. x_2^{($)}: \pm 0.0001. x_1: \pm 1 % (relative error).$	

COMPONENTS :		ORIGINAL MEASUREMENTS:	
(1) Thianthrene; C ₁₂ H ₈ S ₂ ; [92-85-3] (2) Methylcyclohexane C ₇ H ₁₄ ;		Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne, A.I.	
<pre>(3) Cyclohexane;</pre>	C ₆ H ₁₂ ; [110-82-7]		
VARIABLES: T/K = 298, Solvent composition		PREPARED BY: W.E. Acree, Jr., P.R. Naidu, S.A. Tucker and A.I. Zvaigzne	
x2 ⁽⁸⁾	×2	<b>x</b> 1	
0.0000	0.0000	0.00587	
0.1789	0.1778	0.00591	
0.3552	0.3531	0.00601	
0.4599	0.4571	0.00610	
0.5625	0.5590	0.00616	
0.7633	0.7585	0.00623	
0.8816	0.8761	0.00626	
1.0000	0.9937	0.00631	
	AUXILIARY	INFORMATION	
METHOD: APPARATUS/	PROCEDURE	SOURCE AND PURITY OF MATERIALS:	
thermometer, and spectrophotometer		(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol.	
weight. Excess so in amber glass bo	xtures were prepared by plute and solvent placed pttles and allowed to	(2) 99+ %, anhydrous, Aldrich Chemical Company.	
equilibrate for several days at constant temperature. Attainment of equilibrium was verified by several repetitive measurements and by approaching equili- brium from supersaturation. Aliquots of saturated solutions transferred through a coarse filter into tared volumetric flasks, weighed and diluted with methanol. Concentrations determined spectrophoto- metrically at 255 nm.		(3) HPLC Grade, 99.9+ %, Aldrich Chemical Company.	
		Components 2 and 3 were stored over molecular sieves and distilled shortl before use.	
		ESTIMATED ERRORS:	
		$\begin{array}{rcl} T/K: \pm 0.05. \\ x_2^{(5)}: \pm 0.0001. \\ x_1: \pm 1 & (relative error). \end{array}$	
		1	

ORIGINAL MEASUREMENTS:	
Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne, A.I.	
Phys. Chem. Lig. 1990, 21, 45-49.	
PREPARED BY: W.E. Acree, Jr., P.R. Naidu, S.A. Tucker and A.I. Zvaigzne	
* ₁	
0.00587	
0.00701	
0.00815	
0.00881	
0.00950	
0.00994	
0.01080	
0.01133	
0.01232	
INFORMATION	
SOURCE AND PURITY OF MATERIALS:	
<pre>(1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) 99+ %, Aldrich Chemical Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortly before use. ESTIMATED ERRORS: T/K: ± 0.05. x₂^(%): ± 0.0001. x₁: ± 1 % (relative error).</pre>	

COMPONENTS: (1) Thianthrene; C ₁₂ H ₈ S ₂ ; [92-85-3] (2) 2,2,4-Trimethylpentane; C ₈ H ₁₈ ; [540-84-1] (3) Cyclohexane; C ₆ H ₁₂ ; [110-82-7]		ORIGINAL MEASUREMENTS: Acree, W.E., Jr.; Tucker, S.A.; Zvaigzne, A.I. Phys. Chem. Liq. <u>1990</u> , 21, 45-49.					
				VARIABLES: T/K = 298, Solvent composition		PREPARED BY: W.E. Acree, Jr., P.R. Naidu, S.A. Tucker and A.I. Zvaigzne	
				x2 ^(s)	<b>x</b> 2	<b>x</b> 1	
0.0000	0.0000	0.00587					
0.1472	0.1464	0.00516					
0.3035	0.3021	0.00452					
0.3973	0.3956	0.00420					
0.4961	0.4942	0.00391					
0.6314	0.6292	0.00353					
0.7157	0.7133	0.00332					
0.8528	0.8502	0.00301					
1.0000	0.9973	0.00273					
a x2 ⁽⁸⁾ : initial r fraction solubil the ternary solu	nole fraction of binary ity of the solute; x ₂ : r tion.	solvent mixture; $x_i$ : mole nole fraction of component 2 in					
" x2 ⁽⁸⁾ : initial r fraction solubil the ternary solu	nole fraction of binary ity of the solute; x ₂ : r tion.	solvent mixture; x ₁ : mole nole fraction of component 2 in					
" x2 ⁽⁸⁾ ; initial r fraction solubil the ternary solu		solvent mixture; x ₁ : mole mole fraction of component 2 in INFORMATION					
the ternary solu	Lion.						
<b>GETHOD: APPARATUS/PRO</b> Constant temperature thermometer, and an spectrophotometer.	AUXILIARY CEDURE bath, calorimetric ultraviolet/visible	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company,					
<b>GETHOD:</b> APPARATUS/PRO Constant temperature thermometer, and an spectrophotometer. Binary solvent mixtu weight. Excess solut in amber glass bottl equilibrate for seve	AUXILIARY CEDURE bath, calorimetric ultraviolet/visible res were prepared by e and solvent placed es and allowed to ral days at constant	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal-					
The ternary solu THE THOD: APPARATUS/PRO Constant temperature thermometer, and an spectrophotometer. Binary solvent mixtu weight. Excess solut in amber glass bottl	AUXILIARY CEDURE bath, calorimetric ultraviolet/visible res were prepared by e and solvent placed es and allowed to ral days at constant ment of equilibrium ral repetitive	INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company.					
The ternary solu The ternary solu ACTHOD: APPARATUS/PRO Constant temperature thermometer, and an spectrophotometer. Binary solvent mixtu weight. Excess solut in amber glass bottl equilibrate for seve temperature. Attain was verified by seve measurements and by brium from supersatu saturated solutions a coarse filter into	AUXILIARY CEDURE bath, calorimetric ultraviolet/visible res were prepared by e and solvent placed es and allowed to ral days at constant ment of equilibrium ral repetitive approaching equili- ration. Aliquots of transferred through tared volumetric diluted with methanol. mined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemical Company. Components 2 and 3 were stored over</pre>					
METHOD: APPARATUS/PRO Constant temperature thermometer, and an spectrophotometer. Binary solvent mixtu weight. Excess solut in amber glass bottl equilibrate for seve temperature. Attain was verified by seve measurements and by brium from supersatu saturated solutions a coarse filter into flasks, weighed and Concentrations deter	AUXILIARY CEDURE bath, calorimetric ultraviolet/visible res were prepared by e and solvent placed es and allowed to ral days at constant ment of equilibrium ral repetitive approaching equili- ration. Aliquots of transferred through tared volumetric diluted with methanol. mined spectrophoto-	<pre>INFORMATION SOURCE AND PURITY OF MATERIALS: (1) 99 %, Aldrich Chemical Company, Milwaukee, Wisconsin, USA, recrystal- lized 3 times from absolute ethanol. (2) HPLC Grade, 99.7 %, Aldrich Chemical Company. (3) HPLC Grade, 99.9+ %, Aldrich Chemical Company. Components 2 and 3 were stored over molecular sieves and distilled shortl</pre>					

SYSTEM INDEX

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