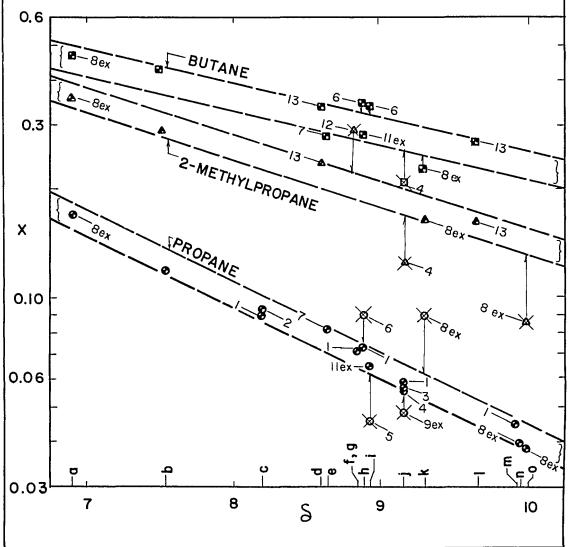
COMPONENTS :	EVALUATOR:		
<pre>(1) Propane; C₃H₈; [74-98-6] Butane; C₄H₁₀; [106-97-8] 2-Methylpropane; C₄H₁₀; [75-28-5]</pre>	Walter Hayduk Department of Chemical Engineering University of Ottawa Ottawa, Canada KIN 9B4		
(2) Non-polar solvents excluding alkanes and organohalides	March, 1984		

CRITICAL EVALUATION:

The solubilities of propane, butane and 2-methylpropane in nonpolar solvents excluding the alkanes and organohalides (dealt with elsewhere in this volume) were tested for consistency using solvent solubility parameters (14). The source of the solubility parameters was mainly that prepared by Martin (15). The consistency test involved plotting the mole fraction solubility on a logarithmic scale as a function of solubility parameter. For solvents which form regular solutions with the solute gases, a consistent relation is expected for each gas. While not expected to indicate the accuracy of particular solubilities, the consistency test is considered helpful in revealing major deviations from normal solubility behavior and hence possible major errors. The diagram below shows the mole fraction solubility at 298.15 K and a gas partial pressure of 101.325 kPa, x, for the three gases as a function of the solvent solubility parameter, δ . When extrapolation was required to a temperature of 298.15 K, "ex" is shown on the diagram next to the reference number. For comparison, the solubility in normal octane, as estimated from data or equations

Solubility at 298.15 K as a function of solubility parameter



COMPONENTS :	EVALUATOR:
<pre>(1) Propane; C₃H₈; [74-98-6] Butane; C₄H₁₀; [106-97-8] 2-Methylpropane; C₄H₁₀; [75-28-5]</pre>	Walter Hayduk Department of Chemical Engineering University of Ottawa Ottawa, Canada KlN 9B4
(2) Non-polar solvents excluding alkanes and organohalides	March, 1984

CRITICAL EVALUATION: continued

available for the low molecular weight alkane solvents, are included in the diagram (see Critical Evaluation in alkane solvents). Furthermore, because of the lack of data for solubilities of *butane* and *2-methylpropane*, some additional data, representing solubilities in the organohalides, <u>tetrachloromethane</u> and <u>chlorobenzene</u> (13) were also used. The latter data are discussed in more detail in the Critical Evaluation of solubilities in organohalide solvents.

The sources of data and letter code for reference to the diagram are listed in order of increasing solubility parameter: (a) octamethylcyclotetrasiloxane (OMTS)(8), (b) n-octane, (c) cyclohexane (1,2), (d) tetrachloromethane (13), (e) decahydronaphthalene (decalin)(8), (f) ethylbenzene (1), (g) 1,3,5-trimethylbenzene (mesitylene)(12), (h) 1,3-dimethylbenzene (m-xylene)(1,6), (i) methylbenzene (toluene) (5,6,11), (j) benzene (1,3,4,9), (k) 1,1'-bicyclohexyl (8), (l) chlorobenzene (13), (m) carbon disulfide (1), (n) 1,1'-methylenebisbenzene (diphenylmethane)(8), (o) 1-methylnaphthalene(8) and 1,1'-oxybismethane (diethylether)(9,10).

Because of the scarcity of data, dashed lines, 20% apart, indicate an approximate range of solubilities for the three gases as a function of solubility parameter. There are more data for *propane* solubilities than for the other two gases.

Because the solubility of *propane* in (i) toluene of Waters et al. (5) is much lower than the extrapolated value of Hannaert et al. (11) and those of other solvents of comparable solubility parameter, it is rejected. The solubilities of Gerrard (6,12) involving all three gases in the aromatic solvents (h) <u>m-xylene</u>, (i) toluene and (g) <u>mesitylene</u> appear too high, especially for the propane and 2-methylpropane gases as previously observed for other solubilities reported by that author (see Critical Evaluation in alkane solvents). These data in the latter two solvents are rejected. The data of Jadot (4) for solubilities of *butane* and 2-methylpropane in <u>benzene</u> are classified as doubtful. The data of Chappelow and Prausnitz (8) for the solubilities of propane in <u>bicyclohexyl</u> and of 2-methylpropane in <u>methylnaphthalene</u> appear much different than would be expected for the particular solvent solubilities of Lebeau (9,10) in <u>diethylether</u>, of historic interest only, appear much too low and are rejected. The solubility of propane in <u>benzene</u> by that worker, while rejected, is at least of the correct order.

The remaining data are classified as tentative.

The data of Chappelow and Prausnitz (8) cover a large temperature range, from 300 K to 425 or 475 K. Those workers used high boiling solvents in order to extend the temperature range normally used for solubility measurements.

A summary of the evaluation of the solubility data is given below; included are tentative values for the solubilities at 298.15 K when applicable.

The summary is in the form of a table (next page).

COMPO	DNENTS:			EVALUATOR	:		
	Propane; C ₃ H ₈ ; Butane; C ₄ H ₁₀ ; 2-Methylpropar Non-polar solv alkanes and or	e [106-97 ne; C ₄ H ₁₀ vents exc	-8] ;[75-28-5] luding	Depart Univer	Hayduk ment of Che sity of Ott , Canada K 1984	awa	ngineering
CRIT	CAL EVALUATION:		Solubilit	ies at 2	98.15 K		<u>,</u>
Sol	lvent (Ref.)		Propane	But	ane	2-Met	thylpropane
		<i>x</i>	class.	<i>x</i>	class.	<i>x</i>	class.
(a)	OMCTS (8)	0.170 ¹	tentative	0.476 ¹	tentative	0.349 ¹	tentative
(b)	n-octane	0.119	-	0.436	-	0.291	-
(c)	Cyclohexane (1,2)	0.0910²	tentative	-	-	-	-
(d)	Carbon tetra- chloride(13)	-	-	0.339	-	0.238	-
(e)	Decalin(7)	0.0826	tentative	0.280	tentative	-	-
(f)	Ethyl- benzene(1)	0.0724	tentative	-	-	-	-
(g)	Mesitylene(12)	-	-	-	-	-	rejected
(h)	M-xylene(l)	0.0731	tentative	-	-	-	-
	M-xylene(6)	-	rejected	0.3531	tentative	-	-
(i)	Toluene (11)	0.0651	tentative	0.2851	tentative	-	-
Į	Toluene (15)	-	rejected	-	-	-	-
(j)	Benzene(1,3)	0.0573 ²	tentative	-	-	-	-
	Benzene(4,9)	-	rejected	-	rejected	-	rejected
(k)	Bicyclohexyl(8)) –	rejected	0.2261	tentative	0.1641	tentative
(1)	Chlorobenzene (13) -	-	0.269	-	0.162	-
(m)	Carbon disulfide(1)	0.0446	tentative	-	-	-	-
(n)	Diphenyl- methane(8)	0.03951	tentative	-	-	-	-
(0)	Methyl- naphthalene(8)	0.03801	tentative	-	-		rejected
	Diethylether (9,10)	-	rejected	-	rejected	-	rejected
				···· • • · · · ·			

Extrapolated or estimated.

²Average value.

	Non-polar Solvents Excluding	Aikanes and Organonalides	221
COMPC	NENTS:	EVALUATOR:	
	Propane; C ₃ H ₈ ; [74-98-6] Butane; C ₄ H ₁₀ ; [106-97-8] 2-Methylpropane; C ₄ H ₁₀ ;[75-28-5] Non-polar solvents excluding alkanes and organohalides	Walter Hayduk Department of Chemical Engineerin University of Ottawa Ottawa, Canada KlN 9B4 March, 1984	g
CRITI	CAL EVALUATION:		
Rei	erences		
1.	Fleury, D.; Hayduk, W. Can. J. C	hem. Eng. <u>1975</u> , 53, 195-199.	
2.	Miller, K.W. J. Phys. Chem. 1968	, 72, 2248-2249.	
3.	Thomsen, E.S.; Gjaldbaek, J.C. A	eta Chem. Scand. <u>1963</u> , 17, 134-138.	
4.	Jadot, R. J. Chim. Phys. <u>1972</u> , 6.	9, 1036-1040.	
5.	Waters, J.A.; Mortimer, G.A.; Clo <u>1970</u> , <i>15</i> , 174-176.	ements, H.E. J. Chem. Eng. Data	
6.	Gerrard, W. J. Appl. Chem. Bioted	chnol. <u>1973</u> , 23, 1-17.	
7.	Lenoir, JY.; Renault, P.; Reno 340-342.	n, H. J. Chem. Eng. Data <u>1971</u> , 16,	
8.	Chappelow, C.C.; Prausnitz, J.M.	A.I.Ch.E.J. <u>1974</u> , 20, 1097-1104.	
9.	Lebeau, P. Compt. Rend. 1905, 140,	1454-1456 and 1572.	
10.	Lebeau, P.Bull. Acad. Roy. Belg.	<u>1908</u> , 300-304.	
11.	Hannaert, H.; Haccuria, M.; Math: 32, 156-164.	ieu, M.P. Ind. Chem. Belge 1967,	
12.	Gerrard, W. Solubility of Gases of York <u>1976</u> , Chapter 12.	and Liquids, Plenum Press, New	
13.	Blais, C.; Hayduk, W. J. Chem. En	ng. Data <u>1983</u> , 28, 181-183.	
14.	Hildebrand, J.H.; Prausnitz, J.M Solutions, Van Nostrand Reinhold	; Scott, R.L. <i>Regular and Related</i> , New York <u>1970</u> , Chapter 8.	
15.	Martin, R.A. <i>Table of Solubility</i> Carbide Corporation, Tarrytown, M		

COMPONENTS :			ORIGINAL ME	ASUREMENTS:		
(1) Brong	ло. С. Н Г74-98	-61	Floury	D . Howdy	1- W	
	ne; C ₃ H ₈ ; [74-98	1	Fleury, D.; Hayduk, W. Can. J. Chem. Eng. <u>1975</u> , 53.			
(2) Carbo [75-1	n disulfide; CS ₂ 5-0]	;	195-199		. <u>1975</u>	
	5 0 1		193-199	•		
VARIABLES:			PREPARED BY	:		
· ·	: 258.15-308.15		W. Hayd	uk		
P/kPa	: 101.325		-			
EXPERIMENTAL V	ALUES:					· · · · · · · · · · · · · · · · · · ·
<i>Т/</i> К	Ostwald Coeffic	iont ¹ B	unson Coo	fficient ²	Mole	Fraction ¹
171	$L/cm^3 cm^{-3}$		cm ³ (STP)		MOLE	
		u/				<i>x</i> ₁
258.15	61.4		65			$(0.1440)^{3}$
273.15 298.15	34.3 18.4			.3 .9		2 (0.0862) 6 (0.0435)
308.15	14.5			.9		5 (0.0348)
¹ Origina						
	ted by compiler.					
³ The mol the fol	e fraction solub lowing equations	ility of t for ΔG° a	he origin nd ln <i>x₁</i>	al data wa and table	is used of smoo	to determine othed values:
∆G°∕J	$mol^{-1} = -RT \ln x$, = 611.03	T - 78.5	81 T ln T	- 4092	D
	$\ln x_1 = 4921.83/$					
	eviation for ∆G°					
<i>T/</i> K	$\Delta G^{\circ}/J \text{ mol}^{-1}$	<u>x</u>	<i>T</i> /K	∆G°/J mc	<u>1-1</u>	<i>x</i> ₁
258.15	4159	0.1440	293.15	7342		0.0492
263.15	4636	0.1202	298.15	7769		0.0435
273.15 283.15	5566 6468	0.0862 0.0641	303.15 308.15	8190 8603		0.0388 0.0348
		AUXILIARY	INFORMATION	ſ		
METHOD/APPARAT	TUS/PROCEDURE:		SOURCE AND	PURITY OF M	ATERIALS	:
A volumetr	ic method using	a glass	1. Mat	heson Co.	Speci	fied as
apparatus	was employed. D	egassed	ins	trument gr	ade of	minimum
	ntacted the gas a thin film, at		pur	ity 99.5 p	er cen	t.
constant r	ate, through an	absorption				Specified
	o a solution bur olvent flow was		min	imum purit	y 99.0	per cent.
	of a calibrated s					
	solution at the		1			
	was considered s maintained at					
ric pressu	re in a gas bure	t by	ESTIMATED	ERROR:		
	ly raising the π he buret at an a			= 0.1		
rate. The	solubility was	calculated	$\delta x_1/x_1$	= 0.01		
	onstant slope of solved and volum		REFERENCES			
solvent in	jected.		ALFERENCES	•		
Degassing	was accomplished	using a	1. C	lever, H.I	.; Bat	tino, R.;
two stage	vacuum process d		1	aylor, J.H		
by Clever	et al. (1).			. Phys. Ch 078.	iem. 19	11,61,
L			I			

			Aikalles al	nd Organohali	des 22
COMPONENTS:	<u> </u>		ORIGINAL M	EASUREMENTS:	
	ne; C ₃ H ₈ ; [74-98 hexane; C ₆ H ₁₂ ; [-		k, W. . <u>1975</u> , <i>53</i> ,
	283.15-343.15 101.325		PREPARED B		
EXPERIMENTAL V	ALUES:		l <u>. "</u> ,		
T/K	Ostwald Coeffic L/cm ³ cm ⁻³			ficient ² cm ⁻³ atm ⁻¹	Mole Fraction ¹
283.15 298.15 323.15 343.15	33.5 22.6 13.6 9.49		29. 20. 11. 7.	7 5	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Std. de <u>T/K</u> 283.15 293.15	ΔG°/J mol ⁻¹ 4705 5483	$= 36.9 \text{ J m}$ $\frac{x_{1}}{0.1356}$ 0.1054	<i>T/K</i> 313.15 323.15	ΔG°/J mol 7039 7817	0.0670 0.0545
298.15 303.15	5872 6261	0.0936 0.0834	333.15 343.15	8596 9374	0.0449 0.0374
		AUXILIARY	INFORMATIO	N	
METHOD/APPARA	TUS/PROCEDURE:		SOURCE AND	PURITY OF MA	TERIALS:
apparatus solvent co flowing as constant r spiral int constant s by means co pump. The the spiral Dry gas wa ric pressu mechanical level in t rate. The from the co of gas dis solvent in	ntacted the gas a thin film, at ate, through an o a solution bus olvent flow was of a calibrated s solution at the was considered is maintained at are in a gas bure ly raising the r the buret at an solubility was sonstant slope of solved and volur jected.	Degassed while t a absorption ret. A obtained syringe e end of saturated. atmosphe- et by mercury adjustable calculated f volume me of d using a	in pu 2. Fi mi ESTIMATED $\delta T/K$ $\delta x_1/x_1$ REFERENCE 1. Cl	strument gr rity 99.5 p sher Scient nimum purit ERROR: = 0.1 = 0.01 S: ever, H.L.;	Specified as rade of minimum er cent. fific. Specified by 99.0 per cent. Battino, R.; Gross, P.M.
two stage	vacuum process (et al. (1).		J.	-	g. 1971, <i>61</i> ,

COMPONENTS:	ORIGINAL MEASUREMENTS:		
(1) Propane; C ₃ H ₈ ; [74-98-6]	Miller, K. W.		
(2) Cyclohexane; $C_6^{H_{12}};$ [110-82-7]	J. Phys. Chem. <u>1968</u> , 72, 2248 - 2249.		
VARIABLES: T/K: 280.15 - 305.25 p ₁ /kPa: 101.325 (1 atm)	PREPARED BY: H. L. Clever		
EXPERIMENTAL VALUES:			
Temperature Mol Fraction	Bunsen Ostwald		
$\frac{t}{t}$	Coefficient Coefficient cm ³ (STP) cm ⁻³ atm ⁻¹ L/cm ³ cm ⁻³		
	31.97 32.79		
12.8 285.95 0.1155 18.7 291.85 0.1016	27.31 28.59 23.48 25.09		
25.0 298.15 0.0896	20.28 22.14		
28.5 301.65 0.0833 32.1 305.25 0.0776	18.65 20.60		
32.1 305.25 0.0776	17.19 19.21		
The Bunsen and Ostwald coefficients w assuming ideal gas behavior and Henry Smoothed Data: For use between 280.1 $\ln x_{\tau} = -8.4498 + 17.$'s law is obeyed. 5 and 305.25 K.		
1	regression line is 1.75×10^{-4} .		
	Fraction [#] 1		
	1230		
	1102 0990		
	0894		
303.15 0.	0809		
AUXILIARY	INFORMATION		
METHOD/APPARATUS/PROCEDURE: The liquid is saturated with the gas at a partial pressure of one atm. The apparatus is that described by Dymond and Hildebrand (1). It uses an all-glass pumping system to spray slugs of degassed solvent into the	 SOURCE AND PURITY OF MATERIALS: (1) Propane. Phillips Petroleum Co. Research grade. Dried before use. (2) Cyclohexane. Matheson, Coleman and Bell. "Spectroquality". Used as received. 		
gas. The amount of gas dissolved is calculated from the initial and final gas pressures.	used as received.		
	ESTIMATED ERROR:		
	REFERENCES :		
	1. Dymond, J. H.; Hildebrand, J. H. Ind. Eng. Chem. Fundam. <u>1967</u> , 6, 130.		

COMPONENTS:	
	ORIGINAL MEASUREMENTS:
(1) Propane; C ₃ H ₈ ; [74-98-6]	Thomsen, E.S.; Gjaldbaek, J.C.
(2) Benzene; C ₆ H ₆ ; [71-43-2]	Acta Chem. Scand. <u>1963</u> , 17, 134-138.
VARIABLES:	PREPARED BY:
<i>T/K</i> : 298.15 <i>P/</i> kPa: 101.325	E.S. Thomsen, W. Hayduk
EXPERIMENTAL VALUES:	
•	unsen Coefficient ¹ Mole Fraction ²
$\frac{L/\mathrm{cm}^3 \mathrm{cm}^{-3}}{2}$	m^3 (STP) m^{-3} atm^{-1} x_1
298.15 16.13	14.7 0.0564
¹ Original data.	
² Calculated by compilers using a real	gas molar volume.
	INFORMATION
METHOD/APPARATUS/PROCEDURE:	
	SOURCE AND PURITY OF MATERIALS:
	1. Phillips Petroleum Co.
The method utilizes a combined glass	 Phillips Petroleum Co. Specified as research grade and
The method utilizes a combined glass manometer and bulb enclosed in an	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent
manometer and bulb enclosed in an air thermostat which is shaken until	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per
manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities.
manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid.	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent
manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing
manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid. Details in reference 1. The absorbed gas volume is calcula-	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing
<pre>manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid. Details in reference 1. The absorbed gas volume is calcula- ted from the initial dry gas, and</pre>	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing and fractionation.
<pre>manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid. Details in reference 1. The absorbed gas volume is calcula- ted from the initial dry gas, and final solvent vapor-saturated gas volume. The amount of solvent is</pre>	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing and fractionation. ESTIMATED ERROR: δT/K = 0.05
 manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid. Details in reference 1. The absorbed gas volume is calculated from the initial dry gas, and final solvent vapor-saturated gas volume. The amount of solvent is determined by measuring the mass of 	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing and fractionation.
 manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid. Details in reference 1. The absorbed gas volume is calculated from the initial dry gas, and final solvent vapor-saturated gas volume. The amount of solvent is 	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing and fractionation. ESTIMATED ERROR: δT/K = 0.05 δx₁/x₁ = 0.015
 manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid. Details in reference 1. The absorbed gas volume is calculated from the initial dry gas, and final solvent vapor-saturated gas volume. The amount of solvent is determined by measuring the mass of 	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing and fractionation. ESTIMATED ERROR: δT/K = 0.05
 manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid. Details in reference 1. The absorbed gas volume is calculated from the initial dry gas, and final solvent vapor-saturated gas volume. The amount of solvent is determined by measuring the mass of 	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing and fractionation. ESTIMATED ERROR: δT/K = 0.05 δx₁/x₁ = 0.015
 manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid. Details in reference 1. The absorbed gas volume is calculated from the initial dry gas, and final solvent vapor-saturated gas volume. The amount of solvent is determined by measuring the mass of 	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing and fractionation. ESTIMATED ERROR: δT/K = 0.05 δx₁/x₁ = 0.015 REFERENCES:
 manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid. Details in reference 1. The absorbed gas volume is calculated from the initial dry gas, and final solvent vapor-saturated gas volume. The amount of solvent is determined by measuring the mass of 	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing and fractionation. ESTIMATED ERROR: δT/K = 0.05 δx₁/x₁ = 0.015 REFERENCES: Gjaldbaek, J.C.
 manometer and bulb enclosed in an air thermostat which is shaken until equilibrium is established. Mercury is used for calibrating the volumes and as the confining liquid. Details in reference 1. The absorbed gas volume is calculated from the initial dry gas, and final solvent vapor-saturated gas volume. The amount of solvent is determined by measuring the mass of 	 Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. Merck. Purified by freezing and fractionation. ESTIMATED ERROR: δT/K = 0.05 δx₁/x₁ = 0.015 REFERENCES: Gjaldbaek, J.C.

COMPONENTS :	ORIGINAL MEASUREMENTS:	
(1) Propane; C ₃ H ₈ ; [74-98-6]	Jadot, R.	
(2) Benzene; C_6H_6 ; [71-43-2]	J. Chim. Phys. 1972,	69. 1036-40
(2)		,
VARIABLES:		
T/K: 298.15	PREPARED BY:	
P/kPa: 101.3	C.L. Young	
EXPERIMENTAL VALUES:		
T/K Henry's Law Constant, H/atm	Mole fraction ⁺ at partial pressure of 101.3 kPa, ^x C ₃ H ₈	#ΔH∞ /cal mol ⁻¹ (/J mol ⁻¹)
298.15 18.165	0.05505	730 (3054)
+ Calculated by compiler assuming	$x_{} = 1/H$	
		ai Inti an
# Excess partial molar enthalpy of the second se	or solution at infinite	dilution.
AUXILIARY	INFORMATION	
METHOD APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATER	IALS:
The conventional gas chromatographic technique was used. The carrier		
gas was helium. The value of Henry's		
law constant was calculated from the retention time. The value applies to		Lven.
very low partial pressures of gas and there may be a substantial difference		
from that measured at 1 atm. pressure		
There is also considerable uncertain-		
ty in the value of Henry's constant		
since no allowance was made for		
	ESTIMATED ERROR:	• δH = +2%
since no allowance was made for		; $\delta H = \pm 2\%$
since no allowance was made for	ESTIMATED ERROR: $\delta T/K = \pm 0.05$; $\delta H = \pm 2$ %
since no allowance was made for	ESTIMATED ERROR:	; ôH = ±2%
since no allowance was made for	ESTIMATED ERROR: $\delta T/K = \pm 0.05$; $\delta H = \pm 2$ %
since no allowance was made for	ESTIMATED ERROR: $\delta T/K = \pm 0.05$; $\delta H = \pm 2$ %
since no allowance was made for	ESTIMATED ERROR: $\delta T/K = \pm 0.05$; δ <i>H</i> = ±2%

COMPONENTS:			-	AL MEASUREMENTS:	
	ane; C ₃ H ₈ ;[74-9 ene; C ₆ H ₆ ; [71-		Can	ury, D.; Haydu . J. Chem. Eng -199.	
	K: 283.15-343. a: 101.325 VALUES:	15	PREPARI W.	ED BY: Hayduk	
Т/К 283.15 298.15 323.15	Ostwald Coeff <u>L/cm³ cm⁻³</u> 23.0 16.6 10.8 7.61	<u></u> α		Coefficient ² TP) cm ⁻³ atm ⁻¹ 22.2 15.2 9.13	Mole Fraction ¹ $10^4 x_1$ 813 (815) ³ 581 (586) 370 (361)
³ The mole the fol ΔG°/J n Std. de	ted by compiler e fraction solub lowing equation $mol^{-1} = -RT$ ln ln $x_1 = 1860.8/$	ility of th s for ΔG° a $x_{1} = 75.483$ T - 9.0790 $x^{\circ} = 44.1 \text{ J}$ $\frac{10^{4}x_{1}}{815}$	$T - 15$ $mol^{-1};$	471	used to determine smoothed values: coefficient = 0.9998 $\frac{10^{4}x_{1}}{434}$ 361
298.15 303.15	7034 7412	586 3	33.15 43.15	9676 10430	304 258
METHOD/APPARA	TUS/PROCEDURE:			AND PURITY OF MA	TERIALS:
METHOD/APPARATUS/PROCEDURE: A volumetric method using a glass apparatus was employed. Degassed solvent contacted the gas while flowing as a thin film, at a constant rate, through an absorption spiral into a solution buret. A constant solvent flow was obtained by means of a calibrated syringe pump. The solution at the end of the spiral was considered saturated. Dry gas was maintained at atmosphe- ric pressure in a gas buret by mechanically raising the mercury level in the buret at an adjustable		1. 1. 2. ΕΣΤΙΜΑ δT/	Matheson Co. instrument gr purity 99.5 p Phillips Petr minimum purit TED ERROR:	Specified as ade of minimum	
rate. The from the o of gas dis solvent in Degassing two stage	e solubility wa constant slope ssolved and vol	s calculate of volume ume of ed using a			

-			
COMPONENTS:	_	ORIGINAL MEASUREMENTS:	
(1) Propane; C ₃ H ₈ ;		Lebeau, P.	
(2) Water, Benzene, Diethylether, Ch Turpentine		Compt. Rend. <u>1905</u> , 140, 1454-6 and 1572.	
-		Bull. Soc. Chim. [3] <u>1905</u> , 33, 1137-9.	
VARIABLES:		PREPARED BY:	
T/K = 290.8 p/kPa = 100.4	- 294.8 - 100.9	H. L. Clever	
EXPERIMENTAL VALUES:			
 Temperat	ure Pressure ^a	Solubility	
t/°C		Volume propane/100 Volumes Solvent	
Water:	H ₂ O; [7732-18-5	1	
	.91.0 753	6.5	
Benzene;	С ₆ Н ₆ 0; [71-43-2		
	94.7 757	1452	
Ethanol;	C ₂ H ₆ O; [64-17-5]	
16.6 2		790	
1,1'-Oxy	bisethane or die	thylether; C ₄ H ₁₀ O; [60-29-7]	
16.6 2	90.8 757	926	
Chlorofc	orm or trichlorom	ethane; CHCl ₃ ; [67-66-3]	
21.6 2	94.8 757	1299	
Oil of t	urpentine		
17.7 2	90.9 757	1587	
	· · · · · · · · · · · · · · · · · · ·		
		s is total pressure or propane is probably total pressure.	
	AUXILIARY	INFORMATION	
METHOD/APPARATUS/PROCEDURI	E:	SOURCE AND PURITY OF MATERIALS:	
Details not give The data are rep papers.		<pre>(1) Propane. Prepared by author from carefully purified propyl iodide by reaction with sodium in liquid ammonia. Melting point/°C = -195</pre>	
		Boiling point/°C = -44.5 Critical temperature/°C = 102.	
		(2) Solvents. No information.	
		ESTIMATED ERROR:	
		REFERENCES :	

·			225
COMPONENTS: (1) Butane; C ₄ H ₁₀ ; [106-97-8]	ORIGINAL MEASUREMENTS: Jadot, R.		
(2) Benzene; C_6H_6 ; [71-43-2]	J. Chim. Phys. <u>1972</u> ,	69,1036-40	
14 DT AD7 20.		<u> </u>	
VARIABLES: <i>T</i> /K: 298.15	PREPARED BY: C.L. Young		
P/kPa: 101.3			
EXPERIMENTAL VALUES:	I	<u> </u>	
T/K Henry's Law Constant,	Mole fraction ⁺	#∆H∞	·
H/atm	at partial pressure of 101.3 kPa, $x_{C_4H_{10}}$	/cal mol ⁻¹ (/J mol ⁻¹)	
298.15 4.82	0.207	850 (3556)	
AUXILIARY	INFORMATION		
METHOD /APPARATUS / PROCEDURE :	SOURCE AND PURITY OF MATERIA	LS;	
The conventional gas chromatographic technique was used. The carrier gas was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at l atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no	No details give	en	
allowance was made for surface adsorption.	ESTIMATED ERROR: $\delta T/K = \pm 0.05;$	δ <i>H</i> = ±2%	
	REFERENCES:		

230		Vents Excluding	Alkanes and Organic	manues	
COMPONENTS:		ORIGINAL MEASUREMENTS:			
(1) Propane; C ₃ H ₈ ; [74-98-6]		Waters, J.A.; M Clements, H.E.	ortimer, G.A	• †	
(2) Methylber [108-88-3	nzene (tolue 3]	ne); C ₇ H ₈ ;	J. Chem. Eng. D 174-176.	ata 1970, 15	,
VARIABLES:			PREPARED BY:		
	253.15-298.	15			
P/kPa: 101.325		W. Ha	yauk		
EXPERIMENTAL VALU	UES:				
T/K Solu	ubility ¹	Ostwald	Bunsen	Mole	Method
mol	<i>c</i> 1/ dm ⁻³ atm ⁻¹	Coefficient ² L/cm ³ cm ⁻³	² Coefficient ¹ ³ α/	Fraction ² $\frac{x_1}{1}$	
253.15	3.228	66.61	72.35	0.2473	A
253.15	3.175	65.51	71.16	0.2443	В
273.15	1.107	24.81	24.81	0.1030	A
273.15 294.15	1.177 0.450	26.38 10.94	26.38 10.09	0.1089	B
294.15	0.452	11.04	10.12	0.0456 0.0458	A B
298.15	0.446	10.99	9.99	0.0454	Ā
¹ Original dat ² Calculated H		³ α/cm ³ (STP) cm	n ⁻³ atm ⁻¹		
equations for $\Delta G^{\circ}/J \mod^{-1}$ ln x	or ΔG° and 1: = $-RT \ln x$ = = 11.088 ln	n x and table = $716.83T - 9$ T + 5939.8/2	ed using method A e of smoothed val $92.18 T \ln T - 49$ T - 84.2224 0.0020; correlat	ues: 383.3	
	∆G°/J mol ⁻¹	<i>x</i> ₁	T/K ΔG°/J mo		
					-
253.15 263.15	2942.6 4069.7		33.15 6220.3 33.15 7246.1		
273.15	5161.9		98.15 7747.2		
		AUXILIARY	INFORMATION		
METHOD/APPARATUS	/PROCEDURE:		SOURCE AND PURITY O	F MATERIALS:	
1	ds (A and B) considered : B was utili		l. Matheson	Co. Research as 99.99 moi	
Method A: A removable 500-cm ³ glass absorption cell was used for the gas solubility measurements. The gas was supplied from a steel reservoir equipped with a pressure gauge and two pressure regulators. The pres- sure change in the reservoir was used to determine the quantity of gas dissolved. The solvent was degassed in the equilibrium cell. A correction was applied for non- ideality of the gas.		grade, of	. Spectropho unspecified		
		ESTIMATED ERROR: $\delta T/K = 0.1$ $\delta P/kPa = 0.1$ $\delta c_1/c_1 = 0.02$	(compiler fo Method A)	or	
				neenou ny	
Method B: TI the solvent wing the abso it before and determination	he increase was determin orption cell d after a so	ed by remo- and weighing	REFERENCES :		

Non-polar Solvents Excluding Alkanes and Organohalides

· · · · · · · · · · · · · · · · · · ·				
	ORIGINAL MEASUREMENTS:			
(1) Propane; C ₃ H ₈ ; [74-98-6]	Hannaert, H.; Haccuria, M.; Mathieu, M. P.			
(2) Methylbenzene or toluene Dimethylbenzene	Ind. Chim. Belge <u>1967</u> , 32, 156 - 164.			
VARIABLES:	PREPARED BY:			
	E.L. Boozer, H.L. Clever			
T/K = 243.15 - 293.15				
EXPERIMENTAL VALUES:				
Temperature Propane $K\pi\nu$, Interval of Mol & Range Measurements $10^2 x_1$ /mol & 293 T/K	/atm ¹ Enthalpy of Constant at Dissolution .15 K ΔH/kcal mol ⁻¹ A			
Methylbenzene or toluene; C7H8	; [108-88-3]			
243.15-293.15 1 - 10 1	2.8 3.79 3.93			
Dimethylbenzene mixture; C ₈ H ₁₀	; [1330-20-7]			
243.15-293.15 1 - 10 1	2.5 4.15 4.20			
¹ log ($K\pi\nu/atm$) = A - ($\Delta H/cal$ mo	$1^{-1})/(2.3R(T/K))$			
The author's definitions are:				
$K = y_1 / x_1 = \frac{\text{mole fraction gas in gas phase}}{\text{mole fraction gas in liquid phase}}$				
$\pi/atm = total pressure$	е,			
v = coefficient of fugacity.				
The function, $K\pi\nu/atm$, is equivalent $H_{1,2}/atm = (f_1/atm)/x_1$ where f_1 is the	to a Henry's constant in the form e fugacity.			
AUXILIARY	INFORMATION			
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:			
The authors describe three methods:	(1) Propane. Matheson. C. P.			
1.A. [Saturat. nº 1]. A measure of	Purified on fractionation column. Purity > 99 %.			
the static pressure of satura- tion in an apparatus which gave a precision of 10 - 15 %.	(2) Methylbenzene. Qualite UCB. Density $\rho^{2} {}^{0}/g {}$ cm ⁻³ = 0.8689.			
1.B. [Saturat. n° 2]. A measure of the static pressure of satura- tion in an apparatus which gave a precision of 2 - 5 %.	Dimethylbenzene. Merck. Mixture of 90% dimethylbenzenes, 5 % methyl benzene, and 5 % ethylbenzene.			
 [Chromato]. A Gas liquid chroma- tographic method estimated to have a precision of 2 - 5 %. 	ESTIMATED ERROR:			
3. [Anal. directe]. Direct analysis of the gaseous and liquid phases.				
Method l.A. was used for these systems.	REFERENCES :			

COMPONENTS :		0	RIGINAL ME	ASUREMENTS:		
(1) Propane	e; C ₃ H ₈ [74-98-6]		Fleurv	, D.; Haydu	k, W.	
		.41	-	. Chem. Eng		53,
(2) Echyibe	enzene; C ₈ H ₁₀ [100-41-		195-199	9.		
VARIABLES:			REPARED BY	/•		
т/к: 2	273.15-323.15		W. Hay			
P/kPa: 1	101.325		w. nay	uun		
EXPERIMENTAL VAL	.UES:	·				
<i>Т/</i> К Оз	stwald Coefficient ¹	Bun	sen Coef:	ficient ²	Mole H	Fraction ¹
				cm ⁻³ atm ⁻¹	a	° 1
			20			
273.15 298.15	28.6 15.3		28. 14.			(0.133) ³ (0.0734)
323.15	9.87		8.	34	0.0447	(0.0444)
¹ Original d	data.					
² Calculated	d by compiler.					
³ The mole	fraction solubility of	the	origina	l data was	used to	determine
	wing equations for ΔG°		-	nd table of	SMOOTH	ed values:
	$1^{-1} = -RT \ln x_1 = 75.7$ $x_1 = 1936.4/T - 9.106$		- 10099			
	$a_1 = 1950.471 = 9.100$ iation for $\Delta G^\circ = 29.6$		1^{-1} ; Cor:	relation co	efficier	ht = 0.9999
<i>T</i> /K	$\frac{\Delta G^{\circ}/J \text{ mol}^{-1}}{2} \qquad x_{1}$		<i>T</i> /K	∆G°/J mo	1-1	<i>x</i> ₁
273.15	4852 0.133		303.15	6853	0	.0659
283.15 293.15	5339 0.104 6096 0.0820		313.15 323.15	7610 8367		.0538 .0444
298.15	6474 0.0734		525.15	0507	0	.0444
	AUXILI	IARY I	NFORMATION	1		·····
METHOD/APPARATUS	S/PROCEDURE:	[:	SOURCE AND	PURITY OF MA	TERIALS:	
	c method using a glass			theson Co.		
	as employed. Degassed tacted the gas while	-		strument gr rity 99.5 p		
	a thin film, at a	tion	2. Ph:	illips Petr	oloum	Spacifial
constant rate, through an absorption spiral into a solution buret. A			z. Ph. mi:	nimum purit	y 99.0 p	per cent.
	lvent flow was obtaine a calibrated syringe					
pump. The	solution at the end of	E				
	was considered saturat maintained at atmosph		ESTIMATED	EDDOD-		<u></u>
	e in a gas buret by y raising the mercury		δT/K	= 0.1		
level in the	e buret at an adjustab	ole	•	= 0.01		
	solubility was calcula nstant slope of volume		1' 1			
	olved and volume of	ſ	REFERENCES	i:		
			1. C1	ever, H.L.;	Battin	D. R
	as accomplished using acuum process describe		Sa	ylor, J.H.;	Gross,	P.M.
by Clever e				Phys. Chem	. 1971,	61,
			10	78.		
L						

COMPONENTS		ORIGINAL MEASUREMENTS:		
(1) Propane; C ₃ H ₈ ; [74-98-6]		Fleury, D.; Hayduk, W.		
(2) 1 ,3-D: C ₈ H ₁₀	imethylbenzene (m-xylene); ; [108-38-3]	Can. J. Chem. Eng. <u>1975</u> , 53, 195–199.		
WARTARI PC -				
VARIABLES:	: 273.15-323.15	PREPARED BY:		
	: 101.325	W. Hayduk		
EXPERIMENTAL V				
т/к		nsen Coefficient ² Mole Fraction ¹ m ³ , (STP) cm ⁻³ atm ⁻¹ x_1		
273.15	29.3	29.3 0.136 $(0.135)^3$		
298.15 323.15	15.5 9.83	14.2 0.0731 (0.0744) 8.31 0.0454 (0.0450)		
323.13	2.03	0.51 0.0454 (0.0450)		
¹ Original	data.			
	ed by compiler.			
³ The mole	fraction solubility of the	e original data was used to determine		
the foll	owing equations for ΔG° and	d ln \tilde{x}_1 and table of smoothed values:		
	$x_{1}^{-1} = RT \ln x_{1} = 75.551 T$	- 16084		
	n $x_1 = 1934.6 T - 9.0872$			
Std. de	viation for $\Delta G^\circ = 37.6 \text{ Jm}$	ol^{-1} ; Correlation coefficient = 0.9999		
T/K	$\Delta G^{\circ}/J \text{ mol}^{-1} x_{1}$	$T/K \Delta G^{\circ}/J \text{ mol}^{-1} x_1$		
273.15	4553 0.1347	303.15 6819 0.0668		
283.15		313.15 7575 0.0545 323.15 8330 0.0450		
293.15 298.15	6064 0.0831 6441 0.0744			
······································	AUXILIARY	INFORMATION		
METHOD/APPARA	TUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:		
}				
	ic method using a glass	1. Matheson Co. Specified as		
	was employed. Degassed intacted the gas while	instrument grade of minimum purity 99.5 per cent.		
flowing as	a thin film, at a			
	ate, through an absorption to a solution buret. A	2. Phillips Petroleum. Specified minimum purity 99.0 per cent.		
constant solvent flow was obtained				
	of a calibrated syringe solution at the end of			
the spiral was considered saturated. Dry gas was maintained at atmosphe- ric pressure in a gas buret by				
		ESTIMATED ERROR:		
mechanical	ly raising the mercury the buret at an adjustable	$\delta T/K = 0.1$		
rate. The	solubility was calculated	$\delta x_1 / x_1 = 0.01$		
	onstant slope of volume solved and volume of	REFERENCES :		
solvent in				
Degassing	was accomplished using a	1. Clever, H.L.; Battino, R.; Saylor, J.H.; Gross, P.M.		
two stage	vacuum process described	J. Phys. Chem. 1971, 61,		
by Clever	et al. (1).	1078.		
L				

Non-polar Solvents Excluding Alkanes and Organohalides

COMPONENTS:		LODICINAL MEACUDEMENTER.
	77 . [74 00 6]	ORIGINAL MEASUREMENTS:
(1) Propane; C ₃		Gerrard, W.
	<pre>benzene (m-xylene);</pre>	J. Appl. Chem. Biotechnol.
C ₈ H ₁₀ ; [108	-38-3]	1973, 23, 1-17.
VARIABLES:		UDEDADED DV
	8.2-293.2	PREPARED BY:
<i>P/</i> kPa: 10		C. L. Young
EXPERIMENTAL VALUES:	:	
	Total pressu	re = 101.3 kPa
т/к	Mole ratio	Mole fraction of propane [#]
268.2	0.190	0.160
278.2	0.169	0.145
283.2 293.2	0.154 0.113	0.133 0.102
22018		0 . 20 M
	AUXILIARY	INFORMATION
METHOD APPARATUS / PR		INFORMATION SOURCE AND PURITY OF MATERIALS:

	ORIGINAL MEASUREMENTS:
(1) Propano: C H : [74-99-6]	
(1) Propane; C ₃ H ₈ ; [74-98-6]	Chappelow, C.C.; Prausnitz, J.M.
<pre>(2) Octamethylcyclotetrasiloxane; C_{8^H24^O4}Si₄; [556-67-2]</pre>	A.I.Ch.E.J. <u>1974</u> , 20, 1097-1104.
VARIABLES:	PREPARED BY:
<i>T/</i> K: 300-425 <i>P/</i> kPa: 101.325	C.L. Young
EXPERIMENTAL VALUES:	
	stant ^a Mole fraction ^b of propane
T/K Henry's Cons H/atm	
300 6.09	0.1642
325 9.72	0.1029
350 14.5	0.0690
375 19.9	0.0503
400 25.2	0.0397
425 30.0	0.0333
AUXILIARY	INFORMATION
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Volumetric apparatus similar to that described by Dymond and Hildebrand (1). Pressure measured with a null detector and precision gauge. Details in ref. (2).	Solvent degassed; no other details given.
	ESTIMATED ERROR:
	$\delta T/K = \pm 0.1; \ \delta x_{C_3H_8} = \pm 1\%$
	<pre>REFERENCES: 1. Dymond, J.; Hildebrand, J.H. Ind. Eng. Chem. Fundam. <u>1967</u>, 6, 130.</pre>
	 Cukor, P.M.; Prausnitz, J.M. Ind. Eng. Chem. Fundam. <u>1971</u>, 10, 638.

	, <u> </u>
Components :	ORIGINAL MEASUREMENTS:
 Propane; C₃H₈; [74-98-6] (2) Decahydronaphthalene, (Decalin); C₁₀H₁₈; [91-17-8] 	Lenoir, JY.; Renault, P.; Renon, H. J. Chem. Eng. Data <u>1971</u> , 16, 340-2.
VARIABLES: T/K: 298,323 P/kPa: 101.325 EXPERIMENTAL VALUES:	PREPARED BY: C.L. Young
EARENIEL VALUES.	
T/K Henry's const ^H C ₃ H ₈ /atm	
298 12.1	0.0826
323 16.4	0.0610
AUXILIARY	INFORMATION
METHOD/APPARATUS/PROCEDURE: A conventional gas-liquid chromatographic unit fitted with a thermal conductivity detector was used. The carrier gas was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since surface adsorption was not allowed for although its possible existence was noted.	<pre>SOURCE AND PURITY OF MATERIALS: 1. L'Air Liquide sample, minimum purity 99.9 mole per cent. 2. Touzart and Matignon or Serlabo sample, purity 99 mole per cent. ESTIMATED ERROR:</pre>

(1) Propane; C ₃ H ₈ ; [74-98-6]		ORIGINAL MEASUREMENTS:
3 8, 1 4 4		Chappelow, C.C.; Prausnitz, J.M.
(2) 1-Methylnaphthalene; C _{11^H10} ; [1321-94-4]		A.I.Ch.E.J. <u>1974</u> , 20, 1097-1104.
VARIABLES:		PREPARED BY:
T/K: 300-475 K/kPa: 101.325		C.L. Young
EXPERIMENTAL VALUES:		
T/K Henry	s Const #/atm	ant ^a Mole fraction ^b of propane at 1 atm. partial pressure, ^x C ₃ H ₈
300	27.1	0.0369
325	41.1	0.0243
350	58.0	0.0172
375	77.1	0.0130
400	97.7	0.0102
425	118	0.00847
450	135	0.00741
475	146	0.00685
^b Calculated by compiler assum fraction and pressure.	ning lir	near relationship between mole
Calculated by compiler assum fraction and pressure.		INFORMATION
fraction and pressure.	UXILIARY CO Sured	

COMPONENTS :	ORIGINAL MEASUREMENTS:
(1) Propane; C ₃ H ₈ ; [74-98-6]	Chappelow, C.C.; Prausnitz, J.M.
(2) 1,1'-Bicyclohexyl; C ₁₂ H ₂₂ ; [92-51-3]	A.I.Ch.E.J. <u>1974</u> , 20, 1097-1104.
VARIABLES: <i>T</i> /K: 300-475	PREPARED BY:
<i>P/</i> kPa: 101.325	C.L. Young
EXPERIMENTAL VALUES:	
T/K Henry's Con H/atm	
300 11.7	0.0855
325 19.0	0.0526
350 28.4	0.0352
375 40.0	0.0250
400 53.1	0.0188
425 66.4	0.0151
450 77.3	0.0129
475 76.6	0.0131
 ^a Authors stated measurements were m of solubility used were all within ^b Calculated by compiler assuming li fraction and pressure. 	the Henry's law region. near relationship between mole
METHOD /APPARATUS / PROCEDURE :	INFORMATION SOURCE AND PURITY OF MATERIALS:
Volumetric apparatus similar to that described by Dymond and Hilderbrand (1). Pressure measured with a null detector and precision gauge. Details in ref. (2).	Solvent degassed; no other details given.
	ESTIMATED ERROR: $\delta T/K = \pm 0.1; \ \delta x_{C_3H_8} = \pm 1\%.$ REFERENCES: 1. Dymond, J.; Hildebrand, J.H. Ind. Eng. Chem. Fundam. <u>1967</u> , 6, 130. 2. Cukor, P.M.; Prausnitz, J.M. Ind. Eng. Chem. Fundam. <u>1971</u> , 10 638.

COMPONENTS :	ORIGINAL MEASUREMENTS:
 (1) Propane; C₃H₈; [74-98-6] (2) Diphenylmethane, (1,1'-Methylenebisbenzene); C₁₃H₁₂; [101-81-5] 	Chappelow, C.C.; Prausnitz, J.M. A.I.Ch.E.J. <u>1974</u> , 20, 1097-1104.
VARIABLES:	PREPARED BY:
<i>T/</i> K: 300-475 <i>P/</i> kPa: 101.325	C.L. Young
EXPERIMENTAL VALUES:	
T/K Henry's Con H/atm	stant ^a Mole fraction ^b of propane at 1 atm. partial pressure, ^x C ₃ H ₈
300 26.0	0.0385
325 37.4	0.0267
350 51.1	0.0196
375 66.2	0.0151
400 82.1	0.0122
425 98.6	0.0101
450 115	0.00870
475 132	0.00758
 of solubility used were all within ^b Calculated by compiler assuming li fraction and pressure. 	
AUXILIARY	INFORMATION
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Volumetric apparatus similar to that described by Dymond and Hildebrand (1). Pressure measured with a null detector and precision gauge. Details in ref. (2).	Solvent degassed; no other details given.
	ESTIMATED ERROR: $\delta T/K = \pm 0.1; \ \delta x_{C_3H_8} = \pm 1\%$ REFERENCES: 1. Dymond, J.; Hildebrand, J.H. Ind. Eng. Chem. Fundam. <u>1967</u> , 6, 130. 2. Cukor, P.M.; Prausnitz, J.M. Ind. Eng. Chem. Fundam. 1971,

240 Non-polar Solvents Excluding	Alkanes and Organohalides
COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Butane; C ₄ H ₁₀ ; [106-97-8]	Hannaert, H.; Haccuria, M.; Mathieu, M. P.
(2) Methylbenzene or toluene or phenylmethane Dimethylbenzenes	Ind. Chim. Belge <u>1967</u> , 32, 156-164.
VARIABLES: T/K = 243.15 - 293.15	PREPARED BY: E. L. Boozer H. L. Clever
EXPERIMENTAL VALUES:	
Temperature Butane Κπν	Vatm Enthalpy of Constant at Dissolution A .15 K $\Delta H/k$ cal mol ⁻¹ A
Methylbenzene or toluene or phen	ylmethane; C ₇ H ₈ ; [108-88-3]
243.15-293.15 3 - 20	3.0 4.84 4.08
Dimethylbenzenes; C ₈ H ₁₀ ; [1330-2	0-7]
243.15-293.15 3 - 20	3.2 4.94 4.18
v = coefficient of fu The function, $K\pi v/\text{atm}$, is equivalent $H_{1,2}/\text{atm} = (f_1/\text{atm})/x_1$ where f_1 is th	to a Henry's constant in the form
AUXILIARY	INFORMATION
METHOD / APPARATUS / PROCEDURE :	SOURCE AND PURITY OF MATERIALS:
The authors describe three methods: 1.A. [Saturat. n°1]. A measure of the static pressure of satura- tion in an apparatus which gave	 Butane. Matheson Co., Inc. Fractionated, purity > 99.5 per cent. Methylbenzene. Qualité UCB.
a precision of 10 - 15 %. 1.B. [Saturat. n°2]. A measure of the static pressure of satura- tion in an apparatus which gave a precision of 2 - 5 %.	Density, $\rho^2 0/g \text{cm}^{-3} = 0.8689$. Dimethylbenzenes. Merck and Co. Mixture of 90% dimethylbenzenes, 5% methylbenzene, and 5% ethyl benzene.
 [Chromato]. A Gas liquid chromatographic method estimated to have a precision of 2 - 5 %. 	ESTIMATED ERROR:
 [Anal. directe]. Direct analysis of the gaseous and liquid phases. 	REFERENCES :
Method l.A. was used for these systems.	
	L

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Butane; C ₄ H ₁₀ ; [106-97-8]	Gerrard, W.
(2) Methylbenzene (toluene); C ₇ H ₈ ;	J. Appl. Chem. Biotechnol.
[108-88-3]	<u>1973</u> , 23, 1-17.
VARIABLES:	
T/K: 283.2	PREPARED BY:
<i>P/</i> kPa: 101.3	C. L. Young
EXPERIMENTAL VALUES:	L
Total pressu	ure = 101.3 kPa
T/K Mole ratio	Mole fraction of butane [#]
283.2 1.45	0.592
	INFORMATION
METHOD / APPARATUS / PROCEDURE :	SOURCE AND PURITY OF MATERIALS:
Gas was passed into a known weight	
of pure liquid in a bubbler tube	No details given except that
at a total pressure measured using	"all compounds were purified
a manometer assembly. The amount	by conventional procedures".
of absorbed gas was estimated by	
weighing. The temperature was	
controlled to within 0.2 K. The apparatus and procedure are	ESTIMATED ERROR: $\delta T/K = \pm 0.1; \delta x/x = \pm 3\%$
described by Gerrard, ref. (1).	(estimated by compiler).
	(Colonation 2, Compile).
	REFERENCES:
	l. Gerrard, W.
	J. Appl. Chem. Biotechnol.
	<u>1972</u> , 22, 623.

g Alkanes and Organonalides
ORIGINAL MEASUREMENTS:
Gerrard, W. J. Appl. Chem. Biotechnol. <u>1973</u> , 23, 1-17.
PREPARED BY: C. L. Young
re = 101.3 kPa
Mole fraction of butane [#]
0.800 0.605 0.412
INFORMATION
SOURCE AND PURITY OF MATERIALS:
No details given except that "all compounds were purified by conventional procedures". ESTIMATED ERROR: $\delta T/K = \pm 0.1; \delta x/x = \pm 3\%$ (estimated by compiler).
REFERENCES: 1. Gerrard, W.
J. Appl. Chem. Biotechnol. <u>1972</u> , 22, 623.

Non-polar Solvents Excluding	Alkanes and Organohalides 243
COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Butane; C ₄ H ₁₀ ; [106-97-8]	Chappelow, C.C.; Prausnitz, J.M.
<pre>(2) Octamethylcyclotetrasiloxane; C₈^H24^O4^{Si}4; [556-67-2]</pre>	A.I.Ch.E.J. <u>1974</u> , 20, 1097-1104.
VARIABLES:	PREPARED BY:
<i>T/</i> K: 300-425	C.L. Young
<i>P/</i> kPa: 101.325	-
EXPERIMENTAL VALUES:	
T/K Henry's Cons H/atm	tant ^a Mole fraction ^b of butane at 1 atm. partial pressure, ${}^{x}C_{4}{}^{H}10$
300 2.19	0.4566
325 3.81	0.2625
350 6.32	0.1582
375 9.40	0.1064
400 12.7	0.0787
425 16.0	0.0625
fraction and pressure.	
AUXILIARY	INFORMATION
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Volumetric apparatus similar to that described by Dymond and Hildebrand (1). Pressure measured with a null detector and precision gauge. Details in ref. (2).	Solvent degassed; no other details given.
	ESTIMATED ERROR:
	$\delta T/K = \pm 0.1; \ \delta x_{C_4 H_{10}} = \pm 1\%$
	<pre>REFERENCES: 1. Dymond, J.; Hildebrand, J.H. Ind. Eng. Chem. Fundam. 1967, 6, 130. 2. Cukor, P.M.; Prausnitz, J.M. Ind. Eng. Chem. Fundam. 1971, 10, 638.</pre>

I.

I

ORIGINAL MEASUREMENTS: Lenior, J-Y.; Renault; P. Renon, H.
J. Chem. Eng. Data <u>1971</u> , 16, 340-2
PREPARED BY:
C.L. Young
Constant Mole fraction at 1 atm* /atm ^x C ₄ H ₁₀
0.280
0.204
INFORMATION
SOURCE AND PURITY OF MATERIALS: (1) L'Air Liquide sample; minimum purity 99.9 mole per cent. (2) Touzart and Matignon or Serlabo sample, purity 99 mole per cent. ESTIMATED ERROR:

COMPONENTS:	ORIGINA	ORIGINAL MEASUREMENTS:		
(1) Butane; C ₄ H ₁₀ ; [106-97-	-8] Chapp	Chappelow, C.C.; Prausnitz, J.M.		
(2) 1,1'-Bicyclohexyl; C ₁₂ E [92-51-3]		A.I.Ch.E.J. <u>1974</u> , 20, 1097-1104.		
VARIABLES:	PREPARI	ED BY:		
<i>T/</i> K: 300-475 <i>P/</i> kPa: 101.325	C.L.	Young		
EXPERIMENTAL VALUES:	······································			
т/к не	enry's Constant ^a #/atm	Mole fraction ^b of butane at 1 atm. partial pressure, ${}^{x}C_{4}{}^{H}_{10}$		
300	4.59	0.2179		
325	7.34	0.1362		
350	11.4	0.0877		
375	17.2	0.0581		
400	24.3	0.0421		
425	31.9	0.0313		
450	39.5	0.0253		
475 ^a Authors stated measuremer	46.4 hts were made at	0.0216 several pressures and values		
475	46.4 nts were made at all within the He	0.0216 several pressures and values enry's law region. elationship between mole		
475 ^a Authors stated measuremen of solubility used were a ^b Calculated by compiler as	46.4 hts were made at all within the He ssuming linear re AUXILIARY INFORMA	0.0216 several pressures and values enry's law region. elationship between mole		
475 ^a Authors stated measuremen of solubility used were a ^b Calculated by compiler as fraction and pressure.	46.4 Ats were made at all within the He assuming linear re AUXILIARY INFORMA AUXILIARY INFORMA SOURCE Solve ar to bd measured recision	0.0216 several pressures and values enry's law region. elationship between mole ATION AND PURITY OF MATERIALS: vent degassed; no other details		
475 ^a Authors stated measuremer of solubility used were a ^b Calculated by compiler as fraction and pressure. <u>METHOD/APPARATUS/PROCEDURE:</u> Volumetric apparatus simila that described by Dymond ar Hildebrand (1). Pressure m with a null detector and pr	46.4 this were made at all within the He assuming linear re- AUXILIARY INFORMA AUXILIARY INFORMA SOURCE ar to bd measured recision	0.0216 several pressures and values enry's law region. elationship between mole ATION AND PURITY OF MATERIALS: Yent degassed; no other details en.		
475 ^a Authors stated measuremer of solubility used were a ^b Calculated by compiler as fraction and pressure. <u>METHOD/APPARATUS/PROCEDURE:</u> Volumetric apparatus simila that described by Dymond ar Hildebrand (1). Pressure m with a null detector and pr	46.4 Ats were made at all within the He assuming linear re- AUXILIARY INFORMA AUXILIARY INFORMA AUXILIARY SOURCE Source Source Source Source Source Source Source Source Source	0.0216 several pressures and values enry's law region. elationship between mole ATION AND PURITY OF MATERIALS: vent degassed; no other details		
475 ^a Authors stated measuremer of solubility used were a ^b Calculated by compiler as fraction and pressure. <u>METHOD/APPARATUS/PROCEDURE:</u> Volumetric apparatus simila that described by Dymond ar Hildebrand (1). Pressure m with a null detector and pr	46.4 Ats were made at all within the He assuming linear re- AUXILIARY INFORMA AUXILIARY INFORMA AUXILIARY SOURCE Source Source Source Source Source Source Source Source Source	0.0216 several pressures and values enry's law region. elationship between mole MIION AND PURITY OF MATERIALS: vent degassed; no other details en. TED ERROR: $\zeta = \pm 0.1; \ \delta x_{C_4H_{10}} = \pm 1\%$		
475 ^a Authors stated measuremer of solubility used were a ^b Calculated by compiler as fraction and pressure. METHOD/APPARATUS/PROCEDURE: Volumetric apparatus simila that described by Dymond ar Hildebrand (1). Pressure m with a null detector and pr	46.4 Ats were made at all within the He assuming linear re AUXILIARY INFORMA AUXILIARY INFORMA SOURCE Solve Solve Solve Solve Solve Solve Contained Con	0.0216 several pressures and values enry's law region. elationship between mole MIION AND PURITY OF MATERIALS: vent degassed; no other details en. TED ERROR: $\zeta = \pm 0.1; \ \delta x_{C_4H_{10}} = \pm 1\%$		

i.

	ORIGINAL MEASUREMENTS:
 2-Methylpropane; C₄H₁₀; 	Jadot, R.
[75-28-5]	J. Chim. Phys. <u>1972</u> , 69, 1036-40
(2) Benzene; C_6H_6 ; [71-43-2]	J. Chim. Phys. <u>1972</u> , 89, 1036-40
<u></u>	
VARIABLES:	PREPARED BY:
T/K: 298.15	C.L. Young
<i>P/</i> kPa: 101.325	
EXPERIMENTAL VALUES:	
	Mole fraction ⁺ #∆H∞
T/K Henry's Law Constant, H/atm	at partial pressure /cal mol ⁻¹
	of 101.3 kPa, $x_{C_{4}H_{10}}$ (/J mol ⁻¹)
298.15 8.160	0.1225 1100 (4602)
+ Calculated by compiler assumi	ng $x_{C,He} = 1/H$.
# Excess partial molar enthalpy	of solution at infinite dilution.
	INFORMATION
METHOD / APPARATUS / PROCEDURE :	SOURCE AND PURITY OF MATERIALS:
The conventional gas chromatographic	
Linghadawa waa waad . Mha asymian gog	
technique was used. The carrier gas	
was helium. The value of Henry's	
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas	No details given.
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial	No details given.
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also	No details given.
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the	No details given.
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no	No details given.
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the	No details given.
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no allowance was made for surface	ESTIMATED ERROR:
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no allowance was made for surface	
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no allowance was made for surface	ESTIMATED ERROR:
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no allowance was made for surface	ESTIMATED ERROR: $\delta T/K = \pm 0.05; \ \delta H = \pm 2\%$
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no allowance was made for surface	ESTIMATED ERROR:
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no allowance was made for surface	ESTIMATED ERROR: $\delta T/K = \pm 0.05; \ \delta H = \pm 2\%$
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no allowance was made for surface	ESTIMATED ERROR: $\delta T/K = \pm 0.05; \ \delta H = \pm 2\%$
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no allowance was made for surface	ESTIMATED ERROR: $\delta T/K = \pm 0.05; \ \delta H = \pm 2\%$
was helium. The value of Henry's law constant was calculated from the retention time. The value applies to very low partial pressures of gas and there may be a substantial difference from that measured at 1 atm. pressure. There is also considerable uncertainty in the value of Henry's constant since no allowance was made for surface	ESTIMATED ERROR: $\delta T/K = \pm 0.05; \ \delta H = \pm 2\%$

Non	-polar	Solvents	Excluding	Alkanes	and	Organohalides
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				Alkanes and Organohalides 247
COMPONE	COMPONENTS:			ORIGINAL MEASUREMENTS:
<pre>(1) 2-Methylpropane, (isobutane); C.H; [75-28-5]</pre>			ane);	Gerrard, W.
C ₄ H ₁₀ ; [75-28-5] (2) 1,3,5-Trimethylbenzene, (mesitylene); C ₉ H ₁₂ ; [108-67-8]		8-67-8]	Solubility of Gases and Liquids, Plenum, New York, <u>1976</u> , Chapter 12.	
VARIABI	LES:			PREPARED BY:
	<i>T</i> /K:			C.L. Young
	P/kPa:	13.3-101.3		
EXPERIN	MENTAL VALUES:			
	Т/К	P/mmHg	P/kPa	Mole fraction of 2-methyl propane in liquid, $x_{C_4H_{10}}$
	273.15	100	13.3	0.058
ļ		200	26.7	0.117
1		300	40.0	0.180
		400	53.3	0.245
		500	66.7	0.322
		600	80.0	0.404
		700	93.3	0.496
		760	101.3	0.568
			AUXILIARY	INFORMATION
METHOD/APPARATUS/PROCEDURE: Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured by a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was manually controlled to within 0.2K. The apparatus and procedure are described by Gerrard (1, 2).			tube d by amount ed re was in ocedure	SOURCE AND PURITY OF MATERIALS: No details given.
				ESTIMATED ERROR:
				$\delta T/K = \pm 0.1; \delta x/x = \pm 3\%$
ł				(estimated by compiler)
				<pre>REFERENCES: 1. Gerrard, W. J. Appl. Chem. Biotechnol. <u>1972</u>, 22, 623-650. 2. Gerrard, W. Solubility of Gases and Liquids, Plenum Press, New York, <u>1976</u>, Chapter 1.</pre>

COMPONENTS:	ORIGINAL MEASUREMENTS:		
<pre>(1) 2-Methylpropane; C₄H₁₀;</pre>	Chappelow, C.C.; Prausnitz, J.M.;		
[75-28-5]	A.I.Ch.E.J. 1974, 20, 1097-1104.		
(2) 1-Methylnaphthalene; C ₁₁ H ₁₀ ; [1321-94-4]	n.1.00.1.0. 1974, 20, 1997 1104.		
VARIABLES:	PREPARED BY:		
T/K: 300-475 P/kPa: 101.325	C.L. Young		
P/KF4: 101.525			
EXPERIMENTAL VALUES:			
T/K Henry's C H/a	onstant ^a Mole fraction ^b of 2- methyl propane at 1 atm. partial pressure, ^x C4 ^H 10		
300 12	.0 0.0833		
325 19	.9 0.0503		
350 30	.3 0.0330		
375 42	.8 0.0234		
400 57	.1 0.0175		
425 72	.1 0.0139		
450 86	.8 0.0115		
475 92	.9 0.0108		
 ^a Authors stated measurements were made at several pressures and values of solubility used were all within the Henry's law region. ^b Calculated by compiler assuming linear relationship between mole fraction and pressure. 			
AUXILIARY	INFORMATION		
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:		
Volumetric apparatus similar to that described by Dymond and Hilderbrand (1). Pressure measured with a null detector and precision gauge. Details in ref. (2).	Solvent degassed; no other details given.		
	ESTIMATED ERROR: $\delta T/K = \pm 0.1; \ \delta x_{C_4}H_{10} = \pm 1\%$ REFERENCES: 1. Dymond, J.; Hilderbrand, J.H. Ind. Eng. Chem. Fundam. <u>1967</u> , 6, 130. 2. Cukor, P.M.; Prausnitz, J.M. Ind. Chem. Eng. Fundam. 1971,		

COMPONENTS:	ORIGINAL MEASUREMENTS:
<pre>(1) 2-Methylpropane; (isobutane);</pre>	Chappelow, C.C, Prausnitz, J.M.
C ₄ H ₁₀ ; [75-28-5]	A.I.Ch.E.J. <u>1974</u> , 20, 1097-1104.
(2) 1,1'-Bicyclohexyl; C ₁₂ H ₂₂ ; [92-51-3]	<u>A.1.0,1510.</u> <u>1971</u> , 20, 1037 12011
VARIABLES:	
T/K: 300-475	PREPARED BY: C.L. Young
P/kPa: 101.325	C.D. Ioung
EXPERIMENTAL VALUES:	
T/K Henry's Co H/at	
300 6.4	3 0.158
325 10.5	0.0952
350 16.3	0.0613
375 23.0	0.0435
400 31.3	0.0319
425 41.4	0.0242
450 50.6	0.0198
475 55.7	0.0180
 ^a Authors stated measurements were may of solubility used were all within ^b Calculated by compiler assuming lin fraction and pressure. 	the Henry's law region.
AUXILIARY	INFORMATION
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Volumetric apparatus similar to that described by Dymond and Hildebrand (1). Pressure measured with a null detector and precision gauge. Details in ref. (2).	Solvent degassed; no other details given.
	ESTIMATED ERROR:
	$\delta T/K = \pm 0.1; \ \delta x_{C_4 H_{10}} = \pm 1$ %.
	REFERENCES: 1. Dymond, J.; Hildebrand, J.H. Ind. Eng. Chem. Fundam. 1967,
	 6 ,130. 2. Cukor, P.M.; Prausnitz, J.M. Ind. Chem. Eng. Fundam. <u>1971</u>, 10, 638.

COMPONENTS:	ORIGINAL MEASUREMENTS:
<pre>(1) 2-Methylpropane, (isobutane); C₄H₁₀; [75-28-5]</pre>	Chappelow, C.C.; Prausnitz, J.M.
<pre>(2) Octamethylcyclotetrasiloxane; C₈H₂,O₄Si₄; [556-67-2]</pre>	A.I.Ch.E.J. <u>1974</u> , 20, 1097-1104.
VARIABLES:	PREPARED BY:
T/K: 300-425	
<i>P/</i> kPa: 101.325	C.L. Young
EXPERIMENTAL VALUES:	
T/K Henry's Con /atm	
300 2.9	8 0.336
325 5.0	5 0.198
350 7.9	6 0.126
375 11.4	0.0877
400 15.4	0.0649
425 20.3	0.0493
^b Calculated by compiler assuming a fraction and pressure. (This intr the mole fraction value for mole f	oduces additional uncertainty into
AUXILIARY	INFORMATION
METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
	SOURCE AND FURTH OF PATERIALS;
Volumetric apparatus similar to that described by Dymond and Hildebrand (1). Pressure measured with a null detector and preci- sion gauge. Details in ref. (2).	Solvent degassed, no other details given.
	ESTIMATED ERROR:
	$\delta T/K = \pm 0.1; \delta x_{C_4H_{10}} = \pm 1\%$
	REFERENCES :
	 Dymond, J.; Hildebrand, J.H. Ind. Eng. Chem. Fundam. <u>1967</u>, 6, 130.
	 Cukor, P.M.; Prausnitz, J.M. Ind. Eng. Chem. Fundam. <u>1971</u>, 10, 638.