

<p>COMPONENTS:</p> <p>(1) Propane; C_3H_8; [74-98-6] Butane; C_4H_{10}; [106-97-8] 2-Methylpropane; C_4H_{10}; [75-28-5] (2) Polar solvents excluding water, alcohols and nitrogen-containing compounds</p>	<p>EVALUATOR:</p> <p>Walter Hayduk Department of Chemical Engineering University of Ottawa Ottawa, Canada K1N 9B4 March, 1984</p>
<p>CRITICAL EVALUATION:</p> <p>In only one instance in this section is there a check on a solubility by two independent groups of workers. Hence, because it was impossible to independently ascertain their accuracy, most of the data listed are classified as tentative. Some of the data of Lenoir et al. (1) were previously shown to be from 6% to 46% <u>too high</u> (2); the error was ascribed, in part, to the extrapolation of data, obtained at effectively very low gas partial pressures using gas chromatography, to atmospheric pressure by means of Henry's law. The Lenoir data, which may be useful for qualitative purposes, are classified as doubtful. Other data for the solubility of <i>propane</i> and <i>2-methylpropane</i> in <i>ethyl hexyl sebacate</i> of Carter and Esterson (3) may be subject to the same uncertainty since they also were obtained by gas chromatography at low gas partial pressures. Consistency tests were performed with most of the data to check for the presence of gross deviations (in excess of 20%) from most probable solubility behavior. In certain cases significant deviations were apparent, and the data, in those instances, were classified as doubtful.</p> <p>A consistency check, or method of extrapolation for solubility data was developed by Linford and Hildebrand (4) for gases of similar chemical nature such as alkanes, in solvents which formed regular solutions. A linear relation was expected when the log of the solubility at constant temperature was plotted as a function of the energy of vaporization at the gas normal boiling points. For solvents which do not form regular solutions, a consistent (nonlinear) relation is usually observed (5). Thus such a plot provides a useful consistency check especially if data are available for several of the alkane gases. Because data are available for solubilities of <i>ethane</i> in many solvents (2), it is possible to compare with those of <i>propane</i>, <i>2-methylpropane</i> and <i>butane</i>. A plot of mole fraction solubility at 298.15 K on a log scale is shown as a function of the energy of vaporization of the gases at their normal boiling points in Figure 1. The solubilities of the four gases in butanol are shown in Figure 1, designated as solvent "h" as an example for comparison. The latter data are those of Kretschmer and Wiebe (6).</p> <p>Table 1 shows the solubility at 298.15 K of one or more of the gases in various solvents along with the classification of the data. If extrapolation to 298.15 K was required, it is so indicated. The letter designation for each solvent in Table 1 corresponds to the solvent in Figure 1. The numbers in Table 1 and in Figure 1 refer to the data sources.</p> <p>The single value for the solubility of <i>propane</i> in (j) <i>acetone</i> of Rosenthal (11) is approximately 5% higher than that of Reference (10). It is considered that the latter data, spanning a wider temperature range, are the more accurate.</p> <p>The data of Gerrard (7,8) appear to be frequently <u>too high</u> (see Critical Evaluation for alcohols and Critical Evaluation for non-polar solvents) although some data are of acceptable accuracy. It may be interpreted from Figure 1 that the solubilities of <i>2-methylpropane</i> in (c) <i>hexanoic acid</i> and of <i>butane</i> in (g) <i>dioxane</i> of Gerrard (7) are probably <u>too high</u> based on the additional available data. The data of Ezheleva and Zorin (12) for the solubility of <i>2-methylpropane</i> in (k) <i>furfural</i> appear to be identical to that of <i>propane</i> in the same solvent, a most unlikely possibility. The latter data are considered doubtful. The variation of solubility of <i>2-methylpropane</i> with temperature also appears inconsistent.</p> <p>Data not listed in Table 1 include those of Lebeau (14) for all three gases in <i>diethylether</i>. As with the other early data of Lebeau, discussed elsewhere in this volume, the values are considered <u>too low</u> and are rejected. Solubilities of <i>propane</i> and <i>butane</i> in <i>dipentyl ether</i> and <i>acetophenone</i> of Gerrard (7) are classified as tentative as are the solubilities of <i>butane</i> in <i>benzyl alcohol</i>. Finally, the solubilities of <i>propane</i> and <i>butane</i> in the various esters of phosphoric acid of Lenoir et al. (1) and of <i>2-methylpropane</i> in <i>propylene carbonate</i> are classified as doubtful.</p>	

COMPONENTS:

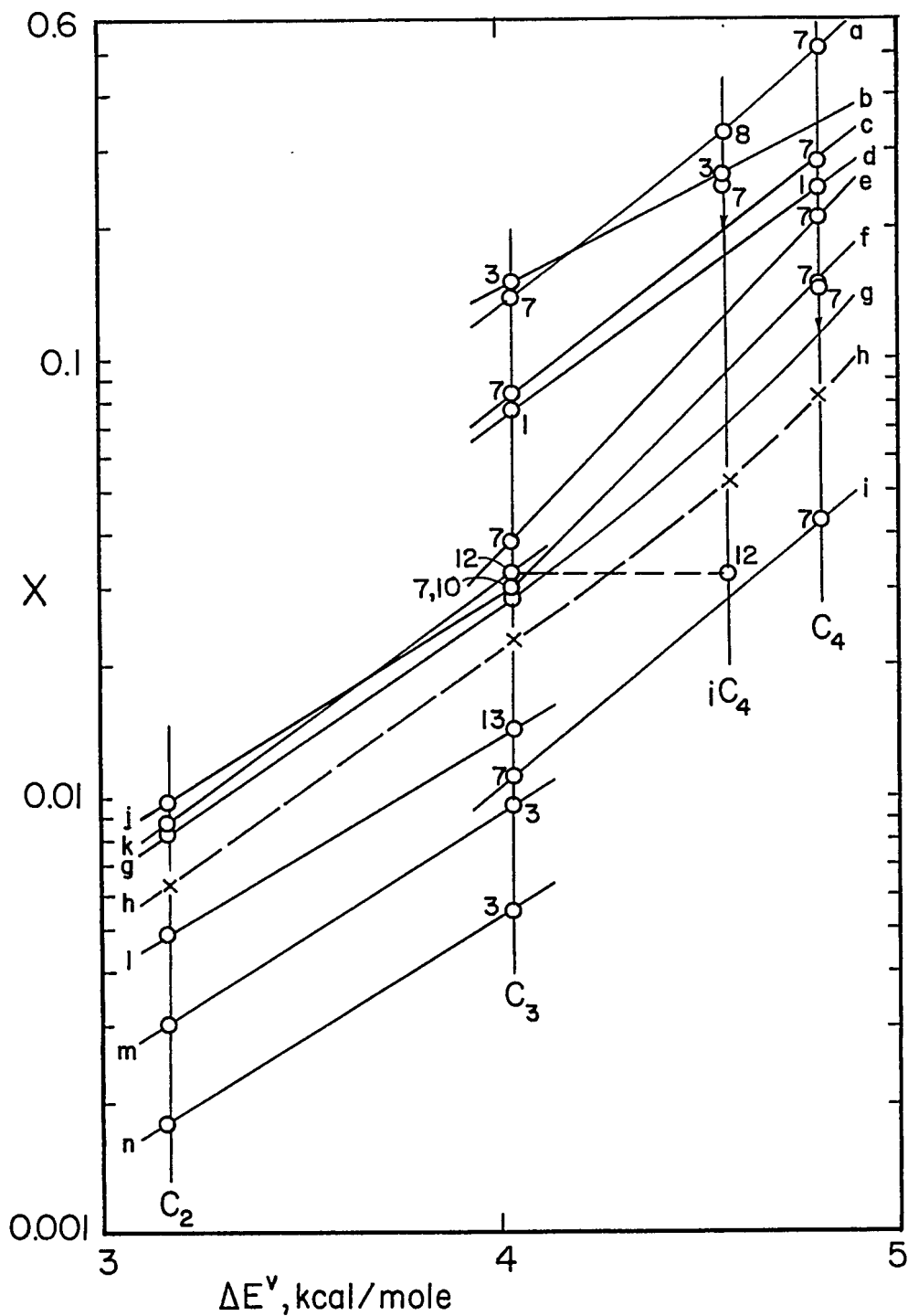
- (1) Propane; C_3H_8 ; [74-98-6]
 Butane; C_4H_{10} ; [106-97-8]
 2-Methylpropane; C_4H_{10} ;
 [75-28-5]
 (2) Polar solvents excluding water,
 alcohols and nitrogen-containing
 compounds

EVALUATOR:

Walter Hayduk
 Department of Chemical Engineering
 University of Ottawa
 Ottawa, Canada K1N 9B4
 March, 1984

CRITICAL EVALUATION:

Figure 1. Solubilities at 298.15 K versus heat of vaporization of gas at the normal boiling point.



COMPONENTS: (1) 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] (2) Polar solvents excluding water, alcohols and nitrogen-containing compounds	EVALUATOR: Walter Hayduk Department of Chemical Engineering University of Ottawa Ottawa, Canada K1N 9B4 March, 1984
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

CRITICAL EVALUATION:

It may be concluded that reliable data for solubilities of *propane*, *butane* and *2-methylpropane* are scarce.

Table 1. Mole fraction solubility at 298.15 K and classification

Solvent	Propane	Butane	2-Methylpropane	Classification
(a) Dioctyl ether	0.138(7)	0.512(7)	0.33 ¹ (8)	Tentative
(b) Ethyl hexyl sebacate (3)	0.15 ¹	-	0.26 ¹	Tentative
(c) Hexanoic acid (7)	0.083 ¹	0.281	0.25 ¹	Tentative
(d) Phosphoric acid tripropyl ester (1)	0.0763	0.248	-	Doubtful
(e) Ethoxybenzene (7)	0.038 ¹	0.21 ¹	-	Tentative
(f) 2-Hydroxybenzoic acid, methyl ester (7)	0.030 ¹	0.149	-	Tentative
(g) Dioxane	0.0284(9)	0.145 ¹ (7)	-	Tentative
(h) Ethanol (6)	0.0228	0.0815	0.0512	-
(i) Acetic anhydride (7)	0.011 ¹	0.042 ¹	-	Tentative
(j) Acetone (10,11)	0.0302	-	-	Tentative
(k) Furfural (12)	0.032 ¹	-	0.032 ¹	Doubtful
(l) Acetic acid (13)	0.0143 ¹	-	-	Tentative
(m) Propylene carbonate	0.00935(3)	-	0.0151(1)	Doubtful
(n) Dimethyl sulfoxide (3)	0.00538	-	-	Doubtful

¹ Extrapolated

References

1. Lenoir, J.-Y.; Renault, P.; Renon, H. *J. Chem. Eng. Data* **1971**, *16*, 340-342.
2. Hayduk, W., Ed. *Solubility Data Series, Vol. 9, Ethane* Pergamon Press, Oxford, England **1982**, 195-199.
3. Carter, D.; Esterson, G.L. *J. Chem. Eng. Data* **1973**, *18*, 166-169.
4. Linford, R.G.; Hildebrand, J.H. *Trans. Far. Soc.* **1970**, *66*, 577-581.
5. Fleury, D.; Hayduk, W. *Can. J. Chem. Eng.* **1975**, *53*, 195-199.
6. Kretschmer, C.B.; Wiebe, R. *J. Am. Chem. Soc.* **1951**, *73*, 3778-3781.
7. Gerrard, W., *J. Appl. Chem. Biotechnol.* **1973**, *23*, 1-17.
8. Gerrard, W. *Solubility of Gases and Liquids*, Plenum, New York, **1976**, Chapter 12.
9. Thomsen, E.S.; Gjaldbaek, J.C. *Acta Chem. Scand.* **1963**, *17*, 134-138.

<p>COMPONENTS:</p> <p>(1) Propane; C₃H₈; [74-98-6] Butane; C₄H₁₀; [106-97-8] 2-Methylpropane; C₄H₁₀; [75-28-5]</p> <p>(2) Polar solvents excluding water, alcohols and nitrogen-containing compounds</p>	<p>EVALUATOR:</p> <p>Walter Hayduk Department of Chemical Engineering University of Ottawa Ottawa, Canada K1N 9B4</p>
<p>CRITICAL EVALUATION:</p> <p>10. Hayduk, W.; Castañeda, R. <i>Can. J. Chem. Eng.</i> <u>1973</u>, <i>51</i>, 353-358.</p> <p>11. Rosenthal, W. <i>Thès. fac. sci. Univ. Strasbourg (France)</i> <u>1954</u>.</p> <p>12. Ezheleva, A.E.; Zorin, A.D. <i>Tr. Khim. Khim. Tech. (Gorkii)</i> <u>1961</u>, <i>1</i>, 37-40.</p> <p>13. Barton, J.R.; Hsu, C.C. <i>Chem. Eng. Sci.</i> <u>1972</u>, <i>27</i>, 1315-1323.</p> <p>14. Lebeau, P. <i>Compt. Rend.</i> <u>1905</u>, <i>140</i>, 1454-6, 1572.</p>	

COMPONENTS: (1) Propane; C ₃ H ₈ [74-98-6] (2) Acetic acid; C ₂ H ₄ O ₂ ; [64-19-7]	ORIGINAL MEASUREMENTS: Barton, J.R.; Hsu, C.C. <i>Chem. Eng. Sci.</i> <u>1972</u> , <i>27</i> , 1315-1323.										
VARIABLES: $T/K = 294.65$ $P/kPa = 101.325$	PREPARED BY: W. Hayduk										
EXPERIMENTAL VALUES:											
<table border="1"> <thead> <tr> <th>$T/^\circ\text{C}$</th> <th>T/K</th> <th>Ostwald Coefficient¹ $L/\text{cm}^3 \text{ cm}^{-1}$</th> <th>Bunsen Coefficient¹ $\alpha/\text{cm}^3 \text{ (STP)} \text{ cm}^{-3} \text{ atm}^{-1}$</th> <th>Mole fraction² x_1</th> </tr> </thead> <tbody> <tr> <td>21.5</td> <td>294.65</td> <td>6.35</td> <td>5.86</td> <td>0.01506</td> </tr> </tbody> </table>		$T/^\circ\text{C}$	T/K	Ostwald Coefficient ¹ $L/\text{cm}^3 \text{ cm}^{-1}$	Bunsen Coefficient ¹ $\alpha/\text{cm}^3 \text{ (STP)} \text{ cm}^{-3} \text{ atm}^{-1}$	Mole fraction ² x_1	21.5	294.65	6.35	5.86	0.01506
$T/^\circ\text{C}$	T/K	Ostwald Coefficient ¹ $L/\text{cm}^3 \text{ cm}^{-1}$	Bunsen Coefficient ¹ $\alpha/\text{cm}^3 \text{ (STP)} \text{ cm}^{-3} \text{ atm}^{-1}$	Mole fraction ² x_1							
21.5	294.65	6.35	5.86	0.01506							
<p>¹ Calculated by compiler.</p> <p>² Original data.</p>											
AUXILIARY INFORMATION											
METHOD/APPARATUS/PROCEDURE: <p>The solubility apparatus (1) consisted of two glass bulbs of accurately measured volume, mounted together and immersed in a bath. The bulbs could be separately charged, interconnected, as well as agitated when required. Vapor-saturated gas was charged to one bulb while deaerated solvent was charged to the other, completely filling the bulb in each case. Saturated gas was stored above mercury in one leg of a manometer which served as a pressure measuring device as well as a variable volume reservoir. Precision tubing was used in the manometer permitting accurate determinations of gas volume. Deaeration was by distillation at total reflux.</p>	SOURCE AND PURITY OF MATERIALS: <ol style="list-style-type: none"> Source, purity, not given. Baker. Reagent grade. Specified purity 99.9 per cent. ESTIMATED ERROR: $\delta T/K = 0.05$ $\delta \alpha/\alpha = 0.005$ (authors) REFERENCES: <ol style="list-style-type: none"> Barton, J.R.; Hsu, C.C. <i>J. Chem. Eng. Data</i>, <u>1971</u>, <i>16</i> 93. 										

<p>COMPONENTS:</p> <p>(1) Propane; C_3H_8; [74-98-6]</p> <p>(2) Sulfinylbismethane, (Dimethylsulfoxide); C_2H_6SO; [67-68-5]</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Lenoir, J-Y.; Renault, P.; Renon, H. <i>J. Chem. Eng. Data</i>, <u>1971</u>, <i>16</i>, 340-2</p>		
<p>VARIABLES:</p> <p>T/K: 298</p> <p>P/kPa: 101.3</p>	<p>PREPARED BY:</p> <p>C. L. Young</p>		
<p>EXPERIMENTAL VALUES:</p>			
	<p>T/K</p>	<p>Henry's constant $H_{C_3H_8}/atm$</p>	<p>Mole fraction at 1 atm* $x_{C_3H_8}$</p>
<p>298</p>	<p>186</p>	<p>0.00538</p>	
<p>* Calculated by compiler assuming a linear function of $p_{C_3H_8}$ vs $x_{C_3H_8}$, i.e., $x_{C_3H_8}(1 atm) = 1/H_{C_3H_8}$</p>			
<p>AUXILIARY INFORMATION</p>			
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>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.</p>		<p>SOURCE AND PURITY OF MATERIALS:</p> <p>(1) L'Air Liquide sample; minimum purity 99.9 mole per cent.</p> <p>(2) Touzart and Matignon or Serlabo sample; purity 99 mole per cent.</p> <p>ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta H/atm = \pm 6\%$ (estimated by compiler).</p> <p>REFERENCES:</p>	

COMPONENTS:		ORIGINAL MEASUREMENTS:			
(1) Propane; C ₃ H ₈ ; [74-98-6] (2) 2-Propanone (acetone); C ₃ H ₆ O; [67-64-1]		Hayduk, W.; Castañeda, R. <i>Can. J. Chem. Eng.</i> <u>1973</u> , <i>51</i> , 353-358.			
VARIABLES:		PREPARED BY:			
T/K: 273.15-323.15 P/kPa: 101.325		W. Hayduk			
EXPERIMENTAL VALUES:					
T/K	Ostwald Coefficient ¹ L/cm ³ cm ⁻³	Bunsen Coefficient ² α/cm ³ (STP) cm ⁻³ atm ⁻¹	Mole Fraction ¹ 10 ⁴ x ₁		
273.15	17.3	17.3	532 (534) ³		
298.15	10.09	9.24	302 (299)		
323.15	6.33	5.35	183 (184)		
¹ Original data.					
² Calculated by compiler.					
³ The mole fraction solubility of the original data was used to determine the following equations for ΔG° and ln x ₁ and table of smoothed values: ΔG°/J mol ⁻¹ = -RT ln x ₁ = 81.745 T - 15676 ln x ₁ = 1885.5/T - 9.8322 Std. deviation for ΔG° = 17.3 J mol ⁻¹ ; Correlation coefficient = 0.9999					
T/K	ΔG°/J mol ⁻¹	10 ⁴ x ₁	T/K	ΔG°/J mol ⁻¹	10 ⁴ x ₁
273.15	6652	534	303.15	9105	270
283.15	7470	419	313.15	9922	221
293.15	8287	334	323.15	10740	184
298.15	8696	299			
AUXILIARY INFORMATION					
METHOD/APPARATUS/PROCEDURE:			SOURCE AND PURITY OF MATERIALS:		
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 atmospheric pressure in a gas buret by mechanically raising the mercury level in the buret at an adjustable rate. The solubility was calculated from the constant slope of volume of gas dissolved and volume of solvent injected.			1. Matheson Co. Specified as instrument grade of minimum purity 99.5 per cent. 2. Fisher. Certified minimum purity 99.0 per cent.		
Degassing was accomplished using a two stage vacuum process described by Clever et al. (1).			ESTIMATED ERROR:		
			δT/K = 0.1 δx ₁ /x ₁ = 0.01		
			REFERENCES:		
			1. Clever, H.L.; Battino, R.; Saylor, J.H.; Gross, P.M. <i>J. Phys. Chem.</i> <u>1971</u> , <i>61</i> , 1078.		

COMPONENTS: (1) Propane; C_3H_8 ; [74-98-6] (2) 2-Propanone (acetone); C_3H_6O ; [67-64-1]	ORIGINAL MEASUREMENTS: Rosenthal, W. <i>Thès. fac. sci. Univ. Strasbourg</i> <i>(France) 1954.</i>								
VARIABLES: T/K : 293.15 P/kPa : 101.325	PREPARED BY: W. Hayduk								
EXPERIMENTAL VALUES:									
<table border="1"> <thead> <tr> <th data-bbox="136 560 242 637">T/K</th> <th data-bbox="281 560 576 637">Ostwald Coefficient¹ $L/cm^3\ cm^{-3}$</th> <th data-bbox="615 560 910 637">Bunsen Coefficient² $\alpha/cm^3\ (STP)\ cm^{-3}\ atm^{-1}$</th> <th data-bbox="950 560 1160 637">Mole Fraction² x_1</th> </tr> </thead> <tbody> <tr> <td data-bbox="136 657 242 687">293.15</td> <td data-bbox="281 657 576 687">11.76</td> <td data-bbox="615 657 910 687">10.91</td> <td data-bbox="950 657 1160 687">0.03526</td> </tr> </tbody> </table>		T/K	Ostwald Coefficient ¹ $L/cm^3\ cm^{-3}$	Bunsen Coefficient ² $\alpha/cm^3\ (STP)\ cm^{-3}\ atm^{-1}$	Mole Fraction ² x_1	293.15	11.76	10.91	0.03526
T/K	Ostwald Coefficient ¹ $L/cm^3\ cm^{-3}$	Bunsen Coefficient ² $\alpha/cm^3\ (STP)\ cm^{-3}\ atm^{-1}$	Mole Fraction ² x_1						
293.15	11.76	10.91	0.03526						
<p>¹Original data.</p> <p>²Calculated by compiler.</p>									
AUXILIARY INFORMATION									
METHOD/APPARATUS/PROCEDURE: <p>The solvent was charged into an evacuated cell after degassing, and the mass of solvent was determined by weight. Gas was introduced into the cell from a measuring burette in which the gas was stored over mercury. The cell was agitated while the gas pressure was maintained by adjusting the gas volume. The Ostwald coefficient was determined from the mass of solvent and volume of gas used. Solubilities were measured at pressures above and below atmospheric.</p>	SOURCE AND PURITY OF MATERIALS: <ol style="list-style-type: none"> Source and purity not given. Research grade. Purity not given. Dried and distilled. ESTIMATED ERROR: $\delta T/K = 0.2$ $\delta P/kPa = 0.1$ $\delta x_1/x_1 = 0.02$ REFERENCES:								

<p>COMPONENTS:</p> <p>(1) Propane; C₃H₈; [74-98-6] (2) Acetic acid anhydride; C₄H₆O₃; [108-24-7]</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u>, 23, 1-17.</p>																		
<p>VARIABLES:</p> <p>T/K: 268.2-293.2 P/kPa: 101.3</p>	<p>PREPARED BY:</p> <p>C. L. Young</p>																		
<p>EXPERIMENTAL VALUES:</p> <p style="text-align: center;">Total pressure = 101.3 kPa</p>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">T/K</th> <th style="text-align: left;">Mole ratio</th> <th style="text-align: left;">Mole fraction of propane[#]</th> </tr> </thead> <tbody> <tr> <td>268.2</td> <td>0.0283</td> <td>0.0275</td> </tr> <tr> <td>273.2</td> <td>0.0238</td> <td>0.0232</td> </tr> <tr> <td>278.2</td> <td>0.0203</td> <td>0.0199</td> </tr> <tr> <td>283.2</td> <td>0.0166</td> <td>0.0163</td> </tr> <tr> <td>293.2</td> <td>0.0130</td> <td>0.0128</td> </tr> </tbody> </table>		T/K	Mole ratio	Mole fraction of propane [#]	268.2	0.0283	0.0275	273.2	0.0238	0.0232	278.2	0.0203	0.0199	283.2	0.0166	0.0163	293.2	0.0130	0.0128
T/K	Mole ratio	Mole fraction of propane [#]																	
268.2	0.0283	0.0275																	
273.2	0.0238	0.0232																	
278.2	0.0203	0.0199																	
283.2	0.0166	0.0163																	
293.2	0.0130	0.0128																	
<p>[#] calculated by compiler</p>																			
<p style="text-align: center;">AUXILIARY INFORMATION</p>																			
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	<p>SOURCE AND PURITY OF MATERIALS:</p> <p>No details given except that "all compounds were purified by conventional procedures".</p> <p>ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler).</p> <p>REFERENCES:</p> <p>1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u>, 22, 623.</p>																		

COMPONENTS: (1) Propane; C ₃ H ₈ ; [74-98-6] (2) 1,4-Dioxane; C ₄ H ₈ O ₂ ; [123-91-1]	ORIGINAL MEASUREMENTS: Thomsen, E.S.; Gjaldbaek, J.C. <i>Acta Chem. Scand.</i> <u>1963</u> , <i>17</i> , 134-138.								
VARIABLES: <i>T</i> /K: 298.15 <i>P</i> /kPa: 101.325	PREPARED BY: E.S. Thomsen, W. Hayduk								
EXPERIMENTAL VALUES:									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><i>T</i>/K</th> <th style="text-align: center;">Ostwald Coefficient² <i>L</i>/cm³ cm⁻³</th> <th style="text-align: center;">Bunsen Coefficient¹ <i>α</i>/cm (STP) cm⁻³ atm⁻¹</th> <th style="text-align: center;">Mole Fraction² <i>x</i>₁</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">298.15</td> <td style="text-align: center;">8.21</td> <td style="text-align: center;">7.48</td> <td style="text-align: center;">0.0284</td> </tr> </tbody> </table>		<i>T</i> /K	Ostwald Coefficient ² <i>L</i> /cm ³ cm ⁻³	Bunsen Coefficient ¹ <i>α</i> /cm (STP) cm ⁻³ atm ⁻¹	Mole Fraction ² <i>x</i> ₁	298.15	8.21	7.48	0.0284
<i>T</i> /K	Ostwald Coefficient ² <i>L</i> /cm ³ cm ⁻³	Bunsen Coefficient ¹ <i>α</i> /cm (STP) cm ⁻³ atm ⁻¹	Mole Fraction ² <i>x</i> ₁						
298.15	8.21	7.48	0.0284						
<p>¹Original data.</p> <p>²Calculated by compilers using the real gas molar volume.</p>									
AUXILIARY INFORMATION									
METHOD/APPARATUS/PROCEDURE: The method utilizes a combined glass 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 mercury displaced.	SOURCE AND PURITY OF MATERIALS: 1. Phillips Petroleum Co. Specified as research grade and GC analysis indicated 0.1 per cent air and 0.03 per cent ethane impurities. 2. British Drug House, Analar grade. Fractionated over sodium. ESTIMATED ERROR: $\delta T/K = 0.05$ $\delta x_1/x_1 = 0.015$ REFERENCES: 1. Gjaldbaek, J.C. <i>Acta Chem. Scand.</i> <u>1952</u> , <i>6</i> , 623.								

COMPONENTS: (1) Propane; C ₃ H ₈ ; [74-98-6] (2) 4-Methyl-1,3-dioxolan-2-one, (Propylene carbonate); C ₄ H ₆ O ₃ ; [108-32-7]	ORIGINAL MEASUREMENTS: Lenoir, J.-Y.; Renault, P.; Renon, H. <i>J. Chem. Eng. Data</i> <u>1971</u> , <i>16</i> , 340-2.												
VARIABLES: <i>T</i> /K: 298-343 <i>P</i> /kPa: 101.3	PREPARED BY: C.L. Young												
EXPERIMENTAL VALUES:													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><i>T</i>/K</th> <th style="text-align: center;">Henry's constant $H_{C_3H_8}/\text{atm}$</th> <th style="text-align: center;">Mole fraction at 1 atm* $x_{C_3H_8}$</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">298</td> <td style="text-align: center;">107</td> <td style="text-align: center;">0.00935</td> </tr> <tr> <td style="text-align: center;">323</td> <td style="text-align: center;">135</td> <td style="text-align: center;">0.00741</td> </tr> <tr> <td style="text-align: center;">343</td> <td style="text-align: center;">150</td> <td style="text-align: center;">0.00667</td> </tr> </tbody> </table>		<i>T</i> /K	Henry's constant $H_{C_3H_8}/\text{atm}$	Mole fraction at 1 atm* $x_{C_3H_8}$	298	107	0.00935	323	135	0.00741	343	150	0.00667
<i>T</i> /K	Henry's constant $H_{C_3H_8}/\text{atm}$	Mole fraction at 1 atm* $x_{C_3H_8}$											
298	107	0.00935											
323	135	0.00741											
343	150	0.00667											
<p>* Calculated by compiler assuming a linear function of $p_{C_3H_8}$ vs $x_{C_3H_8}$, i.e., $x_{C_3H_8}(1 \text{ atm}) = 1/H_{C_3H_8}$</p>													
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 absorption was not allowed for although its possible existence was noted.	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: $\delta T/K = \pm 0.1$; $\delta H/\text{atm} = \pm 6\%$ (estimated by compiler). REFERENCES:												

COMPONENTS: (1) Propane; C ₃ H ₈ ; [74-98-6] (2) Water, Benzene, Ethanol, Diethylether, Chloroform, Turpentine	ORIGINAL MEASUREMENTS: Lebeau, P. <i>Compt. Rend.</i> <u>1905</u> , 140, 1454-6 and 1572. <i>Bull. Soc. Chim.</i> [3] <u>1905</u> , 33, 1137-9.																																																								
VARIABLES: $T/K = 290.8 - 294.8$ $p/kPa = 100.4 - 100.9$	PREPARED BY: H. L. Clever																																																								
EXPERIMENTAL VALUES: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Temperature</th> <th colspan="2" style="text-align: center;">Pressure^a</th> <th style="text-align: center;">Solubility</th> </tr> <tr> <th style="text-align: center;"><i>t</i>/°C</th> <th style="text-align: center;"><i>T</i>/K</th> <th style="text-align: center;"><i>p</i>/mmHg</th> <th style="text-align: center;">Volume propane/100 Volumes Solvent</th> </tr> </thead> <tbody> <tr> <td colspan="4">Water; H₂O; [7732-18-5]</td> </tr> <tr> <td style="text-align: center;">17.8</td> <td style="text-align: center;">291.0</td> <td style="text-align: center;">753</td> <td style="text-align: center;">6.5</td> </tr> <tr> <td colspan="4">Benzene; C₆H₆O; [71-43-2]</td> </tr> <tr> <td style="text-align: center;">21.5</td> <td style="text-align: center;">294.7</td> <td style="text-align: center;">757</td> <td style="text-align: center;">1452</td> </tr> <tr> <td colspan="4">Ethanol; C₂H₆O; [64-17-5]</td> </tr> <tr> <td style="text-align: center;">16.6</td> <td style="text-align: center;">290.8</td> <td style="text-align: center;">754</td> <td style="text-align: center;">790</td> </tr> <tr> <td colspan="4">1,1'-Oxybisethane or diethylether; C₄H₁₀O; [60-29-7]</td> </tr> <tr> <td style="text-align: center;">16.6</td> <td style="text-align: center;">290.8</td> <td style="text-align: center;">757</td> <td style="text-align: center;">926</td> </tr> <tr> <td colspan="4">Chloroform or trichloromethane; CHCl₃; [67-66-3]</td> </tr> <tr> <td style="text-align: center;">21.6</td> <td style="text-align: center;">294.8</td> <td style="text-align: center;">757</td> <td style="text-align: center;">1299</td> </tr> <tr> <td colspan="4">Oil of turpentine</td> </tr> <tr> <td style="text-align: center;">17.7</td> <td style="text-align: center;">290.9</td> <td style="text-align: center;">757</td> <td style="text-align: center;">1587</td> </tr> </tbody> </table> <p>^a Not clear whether this is total pressure or propane partial pressure. It is probably total pressure.</p>		Temperature	Pressure ^a		Solubility	<i>t</i> /°C	<i>T</i> /K	<i>p</i> /mmHg	Volume propane/100 Volumes Solvent	Water; H ₂ O; [7732-18-5]				17.8	291.0	753	6.5	Benzene; C ₆ H ₆ O; [71-43-2]				21.5	294.7	757	1452	Ethanol; C ₂ H ₆ O; [64-17-5]				16.6	290.8	754	790	1,1'-Oxybisethane or diethylether; C ₄ H ₁₀ O; [60-29-7]				16.6	290.8	757	926	Chloroform or trichloromethane; CHCl ₃ ; [67-66-3]				21.6	294.8	757	1299	Oil of turpentine				17.7	290.9	757	1587
Temperature	Pressure ^a		Solubility																																																						
<i>t</i> /°C	<i>T</i> /K	<i>p</i> /mmHg	Volume propane/100 Volumes Solvent																																																						
Water; H ₂ O; [7732-18-5]																																																									
17.8	291.0	753	6.5																																																						
Benzene; C ₆ H ₆ O; [71-43-2]																																																									
21.5	294.7	757	1452																																																						
Ethanol; C ₂ H ₆ O; [64-17-5]																																																									
16.6	290.8	754	790																																																						
1,1'-Oxybisethane or diethylether; C ₄ H ₁₀ O; [60-29-7]																																																									
16.6	290.8	757	926																																																						
Chloroform or trichloromethane; CHCl ₃ ; [67-66-3]																																																									
21.6	294.8	757	1299																																																						
Oil of turpentine																																																									
17.7	290.9	757	1587																																																						
AUXILIARY INFORMATION																																																									
METHOD/APPARATUS/PROCEDURE: Details not given. The data are reported in both papers.	SOURCE AND PURITY OF MATERIALS: (1) Propane. Prepared by author from carefully purified propyl iodide by reaction with sodium in liquid ammonia. Melting point/°C = -195 Boiling point/°C = -44.5 Critical temperature/°C = 102. (2) Solvents. No information. ESTIMATED ERROR: REFERENCES:																																																								

COMPONENTS: (1) Propane; C ₃ H ₈ ; [74-98-6] (2) 2-Furancarboxaldehyde (furfural); C ₅ H ₄ O ₂ ; [98-01-1]	ORIGINAL MEASUREMENTS: Ezheleva, A.E.; Zorin, A.D. <i>Tr. Khim. Khim. Tech. (Gorkii)</i> <u>1961, 1, 37-40.</u>																								
VARIABLES: <i>T</i> /K: 303.15-343.15 <i>P</i> /kPa: 101.325 and above	PREPARED BY: W. Hayduk																								
EXPERIMENTAL VALUES:																									
<table border="1"> <thead> <tr> <th><i>T</i>/K</th> <th>Ostwald Coefficient² L/cm³cm⁻³</th> <th>Bunsen Coefficient² α/cm³(STP)cm⁻³atm⁻¹</th> <th>Mole Fraction¹ <i>x</i>₁</th> </tr> </thead> <tbody> <tr> <td>303.15</td> <td>7.89</td> <td>7.07</td> <td>0.0262(0.0262)³</td> </tr> <tr> <td>313.15</td> <td>7.70</td> <td>6.66</td> <td>0.0250(0.0252)</td> </tr> <tr> <td>323.15</td> <td>7.41</td> <td>6.21</td> <td>0.0236(0.0226)</td> </tr> <tr> <td>333.15</td> <td>5.74</td> <td>4.66</td> <td>0.0180(0.0189)</td> </tr> <tr> <td>343.15</td> <td>4.92</td> <td>3.88</td> <td>0.0152(0.0149)</td> </tr> </tbody> </table>		<i>T</i> /K	Ostwald Coefficient ² L/cm ³ cm ⁻³	Bunsen Coefficient ² α/cm ³ (STP)cm ⁻³ atm ⁻¹	Mole Fraction ¹ <i>x</i> ₁	303.15	7.89	7.07	0.0262(0.0262) ³	313.15	7.70	6.66	0.0250(0.0252)	323.15	7.41	6.21	0.0236(0.0226)	333.15	5.74	4.66	0.0180(0.0189)	343.15	4.92	3.88	0.0152(0.0149)
<i>T</i> /K	Ostwald Coefficient ² L/cm ³ cm ⁻³	Bunsen Coefficient ² α/cm ³ (STP)cm ⁻³ atm ⁻¹	Mole Fraction ¹ <i>x</i> ₁																						
303.15	7.89	7.07	0.0262(0.0262) ³																						
313.15	7.70	6.66	0.0250(0.0252)																						
323.15	7.41	6.21	0.0236(0.0226)																						
333.15	5.74	4.66	0.0180(0.0189)																						
343.15	4.92	3.88	0.0152(0.0149)																						
<p>¹Original data given as the inverse of Henry's constant which is equivalent to mole fraction at a gas partial pressure of 101.325 kPa.</p> <p>²Ostwald and Bunsen coefficients calculated by compiler using authors' assumption that solvent is non-volatile.</p> <p>³From equation of smoothed data: $\ln x_1 = 520.02 - 77.978 \ln T - 23669/T$ Correlation coefficient = 0.9889</p>																									
AUXILIARY INFORMATION																									
METHOD/APPARATUS/PROCEDURE: <p>The apparatus consisted of a two-chamber, rocking device with separate gas and liquid chambers joined by two tubes and microvalves. The gas chamber was equipped with a pressure gauge. After evacuation, gas and deaerated solvent were separately charged, and then contacted by opening the microvalves and by rocking. The solubility was calculated from a knowledge of the volume of the solvent charged, and the initial and final gas pressures.</p> <p>The solvent was considered non-volatile and the gas pressure was considered to be the total pressure.</p>	SOURCE AND PURITY OF MATERIALS: <ol style="list-style-type: none"> Source and purity not given. Gas purified by low temperature fractionation and analyzed by gas chromatography. Source and purity not given. Refractive index measured: $n_D^{20} = 1.5305$ ESTIMATED ERROR: $\delta T/K = 0.05$ $\delta x_1/x_1 = 0.05$ (estimated by compiler)																								
REFERENCES:																									

COMPONENTS: (1) Propane; C ₃ H ₈ ; [74-98-6] (2) Oxybispropanol, (dipropylene glycol); C ₆ H ₁₄ O ₃ ; [25265-71-8]	ORIGINAL MEASUREMENTS: Lenoir, J.-Y.; Renault, P.; Renon, H. <i>J. Chem. Eng. Data</i> <u>1971</u> , <i>16</i> , 340-2.												
VARIABLES: <i>T</i> /K: 298-343 <i>P</i> /kPa: 101.3	PREPARED BY: C.L. Young												
EXPERIMENTAL VALUES:													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><i>T</i>/K</th> <th style="text-align: center;">Henry's constant <i>H</i>_{C₃H₈}/atm</th> <th style="text-align: center;">Mole fraction at 1 atm* <i>x</i>_{C₃H₈}</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">298</td> <td style="text-align: center;">71.5</td> <td style="text-align: center;">0.0140</td> </tr> <tr> <td style="text-align: center;">323</td> <td style="text-align: center;">85.0</td> <td style="text-align: center;">0.0118</td> </tr> <tr> <td style="text-align: center;">343</td> <td style="text-align: center;">119</td> <td style="text-align: center;">0.00840</td> </tr> </tbody> </table>		<i>T</i> /K	Henry's constant <i>H</i> _{C₃H₈} /atm	Mole fraction at 1 atm* <i>x</i> _{C₃H₈}	298	71.5	0.0140	323	85.0	0.0118	343	119	0.00840
<i>T</i> /K	Henry's constant <i>H</i> _{C₃H₈} /atm	Mole fraction at 1 atm* <i>x</i> _{C₃H₈}											
298	71.5	0.0140											
323	85.0	0.0118											
343	119	0.00840											
<p>* Calculated by compiler assuming a linear function of <i>p</i>_{C₃H₈} vs <i>x</i>_{C₃H₈} i.e., <i>x</i>_{C₃H₈} (1 atm) = 1/<i>H</i>_{C₃H₈}</p>													
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.	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: $\delta T/K = \pm 0.1$; $\delta H/\text{atm} = \pm 6\%$ (estimated by compiler) REFERENCES:												

<p>COMPONENTS:</p> <p>(1) Propane; C₃H₈; [74-98-6] (2) Hexanoic acid; C₆H₁₂O₂; [142-62-1]</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u>, 23, 1-17.</p>															
<p>VARIABLES:</p> <p>T/K: 273.2-293.2 P/kPa: 101.3</p>	<p>PREPARED BY:</p> <p>C. L. Young</p>															
<p>EXPERIMENTAL VALUES:</p> <p style="text-align: center;">Total pressure = 101.3 kPa</p>																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">T/K</th> <th style="text-align: left;">Mole ratio</th> <th style="text-align: left;">Mole fraction of propane[#]</th> </tr> </thead> <tbody> <tr> <td>273.2</td> <td>0.143</td> <td>0.125</td> </tr> <tr> <td>278.2</td> <td>0.127</td> <td>0.113</td> </tr> <tr> <td>283.2</td> <td>0.115</td> <td>0.103</td> </tr> <tr> <td>293.2</td> <td>0.099</td> <td>0.090</td> </tr> </tbody> </table>		T/K	Mole ratio	Mole fraction of propane [#]	273.2	0.143	0.125	278.2	0.127	0.113	283.2	0.115	0.103	293.2	0.099	0.090
T/K	Mole ratio	Mole fraction of propane [#]														
273.2	0.143	0.125														
278.2	0.127	0.113														
283.2	0.115	0.103														
293.2	0.099	0.090														
<p># Calculated by compiler.</p>																
<p style="text-align: center;">AUXILIARY INFORMATION</p>																
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	<p>SOURCE AND PURITY OF MATERIALS:</p> <p>No details given except that "all compounds were purified by conventional procedures".</p> <p>ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler).</p> <p>REFERENCES:</p> <p>1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u>, 22, 623.</p>															

<p>COMPONENTS:</p> <p>(1) Propane; C_3H_8; [74-98-6]</p> <p>(2) 2-Hydroxybenzoic acid, methyl ester; $C_8H_8O_3$; [119-36-8]</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u>, 23, 1-17.</p>																		
<p>VARIABLES:</p> <p>T/K: 268.2-293.2</p> <p>P/kPa: 101.3</p>	<p>PREPARED BY:</p> <p>C. L. Young</p>																		
<p>EXPERIMENTAL VALUES:</p> <p style="text-align: center;">Total pressure = 101.3 kPa</p>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">T/K</th> <th style="text-align: left;">Mole ratio</th> <th style="text-align: left;">Mole fraction of propane[#]</th> </tr> </thead> <tbody> <tr> <td>268.2</td> <td>0.0647</td> <td>0.0608</td> </tr> <tr> <td>273.2</td> <td>0.0556</td> <td>0.0527</td> </tr> <tr> <td>278.2</td> <td>0.0484</td> <td>0.0462</td> </tr> <tr> <td>283.2</td> <td>0.0428</td> <td>0.0410</td> </tr> <tr> <td>293.2</td> <td>0.0360</td> <td>0.0347</td> </tr> </tbody> </table>		T/K	Mole ratio	Mole fraction of propane [#]	268.2	0.0647	0.0608	273.2	0.0556	0.0527	278.2	0.0484	0.0462	283.2	0.0428	0.0410	293.2	0.0360	0.0347
T/K	Mole ratio	Mole fraction of propane [#]																	
268.2	0.0647	0.0608																	
273.2	0.0556	0.0527																	
278.2	0.0484	0.0462																	
283.2	0.0428	0.0410																	
293.2	0.0360	0.0347																	
<p>[#] Calculated by compiler.</p>																			
<p style="text-align: center;">AUXILIARY INFORMATION</p>																			
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	<p>SOURCE AND PURITY OF MATERIALS:</p> <p>No details given except that "all compounds were purified by conventional procedures".</p> <p>ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler).</p> <p>REFERENCES:</p> <p>1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u>, 22, 623.</p>																		

<p>COMPONENTS:</p> <p>(1) Propane; C₃H₈; [74-98-6] (2) Ethoxybenzene; C₈H₁₀O; [103-73-1]</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u>, 23, 1-17.</p>																		
<p>VARIABLES:</p> <p>T/K: 268.2-293.2 P/kPa: 101.3</p>	<p>PREPARED BY:</p> <p>C. L. Young</p>																		
<p>EXPERIMENTAL VALUES:</p> <p style="text-align: center;">Total pressure = 101.3 kPa</p>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">T/K</th> <th style="text-align: left;">Mole ratio</th> <th style="text-align: left;">Mole fraction of propane[#]</th> </tr> </thead> <tbody> <tr> <td>268.2</td> <td>0.112</td> <td>0.1007</td> </tr> <tr> <td>273.2</td> <td>0.0950</td> <td>0.0868</td> </tr> <tr> <td>278.2</td> <td>0.0810</td> <td>0.0749</td> </tr> <tr> <td>283.2</td> <td>0.0635</td> <td>0.0597</td> </tr> <tr> <td>293.2</td> <td>0.0468</td> <td>0.0447</td> </tr> </tbody> </table>		T/K	Mole ratio	Mole fraction of propane [#]	268.2	0.112	0.1007	273.2	0.0950	0.0868	278.2	0.0810	0.0749	283.2	0.0635	0.0597	293.2	0.0468	0.0447
T/K	Mole ratio	Mole fraction of propane [#]																	
268.2	0.112	0.1007																	
273.2	0.0950	0.0868																	
278.2	0.0810	0.0749																	
283.2	0.0635	0.0597																	
293.2	0.0468	0.0447																	
<p>[#]Calculated by compiler.</p>																			
<p>AUXILIARY INFORMATION</p>																			
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	<p>SOURCE AND PURITY OF MATERIALS:</p> <p>No details given except that "all compounds were purified by conventional procedures".</p> <p>ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler).</p> <p>REFERENCES:</p> <p>1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u>, 22, 623.</p>																		

COMPONENTS:		ORIGINAL MEASUREMENTS:
(1) Propane; C_3H_8 ; [74-98-6] (2) Esters of phosphoric acid		Lenoir, J-Y.; Renault, P.; Renon, H. <i>J. Chem. Eng. Data</i> <u>1971</u> , <i>16</i> , 340-2
VARIABLES: T/K : 298.2-343.2 P/kPa : 101.3		PREPARED BY: C. L. Young
EXPERIMENTAL VALUES:		
T/K	Henry's constant $H_{C_3H_8}/atm$	Mole fraction at 1 atm* $x_{C_3H_8}$
Phosphoric acid, trimethyl ester; $C_3H_9O_4P$; [512-46-1] 325.2	114	0.00877
Phosphoric acid, triethyl ester; $C_6H_{15}O_4P$; [78-40-0] 325.2	37.2	0.0269
Phosphoric acid, tripropyl ester; $C_9H_{21}O_4P$; [513-08-6] 298.2	13.1	0.0763
323.2	20.2	0.0495
343.2	28.2	0.0355
Phosphoric acid, tributyl ester; $C_{12}H_{27}O_4P$; [126-73-8] 325.2	15.1	0.0662
Phosphoric acid, tri(2-methyl propyl)ester; $C_{12}H_{27}O_4P$; [126-71-6] 325.2	14.4	0.0694
* Calculated by compiler assuming a linear function of $p_{C_3H_8}$ vs $x_{C_3H_8}$, i.e., $x_{C_3H_8}(1 atm) = 1/H_{C_3H_8}$		
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.		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: $\delta T/K = \pm 0.1$; $\delta H/atm = \pm 6\%$ (estimated by compiler).
		REFERENCES:

<p>COMPONENTS:</p> <p>(1) Propane; C_3H_8; [74-98-6]</p> <p>(2) 1,1'-Oxybis-pentane (dipentyl ether); $C_{10}H_{22}O$; [693-65-2]</p> <p>1,1'-Oxybis-octane (dioctyl ether); $C_{16}H_{34}O$; [629-82-3]</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u>, 23, 1-17.</p>
<p>VARIABLES:</p> <p>T/K: 268.2-298.2</p> <p>P/kPa: 101.3</p>	<p>PREPARED BY:</p> <p>C. L. Young</p>
<p>EXPERIMENTAL VALUES:</p> <p style="text-align: center;">Total pressure = 101.3 kPa</p>	
<p>T/K</p>	<p>Mole ratio</p> <p style="text-align: right;">Mole fraction of propane[#]</p>
<p>268.2</p> <p>278.2</p> <p>283.2</p> <p>293.2</p> <p>298.2</p>	<p style="text-align: center;">dipentyl ether</p> <p>0.411</p> <p style="text-align: center;">dioctyl ether</p> <p>0.322</p> <p>0.240</p> <p>0.182</p> <p>0.160</p> <p style="text-align: right;">0.291</p> <p style="text-align: right;">0.244</p> <p style="text-align: right;">0.194</p> <p style="text-align: right;">0.154</p> <p style="text-align: right;">0.138</p>
<p>[#] Calculated by compiler.</p>	
<p style="text-align: center;">AUXILIARY INFORMATION</p>	
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	<p>SOURCE AND PURITY OF MATERIALS:</p> <p>No details given except that "all compounds were purified by conventional procedures".</p> <p>ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler).</p> <p>REFERENCES:</p> <p>1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u>, 22, 623.</p>

COMPONENTS: (1) Propane; C_3H_8 ; [74-98-6] (2) Decanedioic acid, bis (2-ethylhexyl) ester (di-2-ethylhexyl sebacate); $C_{26}H_{50}O_4$; [122-62-3]		ORIGINAL MEASUREMENTS: Carter, D.; Esterson, G.L. <i>J. Chem. Eng. Data</i> <u>1973</u> , <i>18</i> , 166-169.			
VARIABLES: T/K : 328.15 P/kPa : 101.325		PREPARED BY: W. Hayduk			
EXPERIMENTAL VALUES:					
T/K	Modified Henry's constant ¹ , $h/(\text{mol cm}^{-3})_g$	Ostwald Coefficient ² $L/\text{cm}^3\text{cm}^{-3}$	Bunsen Coefficient ² α/cm^3 (STP) cm^{-3}	Mole Fraction ² $/x_1$	Method
328.15	0.182	5.50	4.58	0.0890	A
328.15	0.196	5.10	4.25	0.0832	B
<p>¹Original data listed as a modified Henry's constant, h.</p> <p>²Calculated by compiler assuming Henry's law and ideal gas law apply.</p>					
AUXILIARY INFORMATION					
METHOD/APPARATUS/PROCEDURE: <p>Two different methods were used: method A, chromatographic, and method B, liquid saturation.</p> <p>A. A chromatography column containing a known amount of solvent was installed in an oven. Helium was used as a carrier gas. Pulses of solute gas and argon were consecutively injected into the gas stream. The solubility was determined from the total retention times. The solubilities were determined at effectively very low partial pressures and hence linear extrapolation to atmospheric pressure is subject to error.</p> <p>B. The increase in mass of the solvent exposed to moderate pressures of gas was measured. Details not given.</p>			SOURCE AND PURITY OF MATERIALS: <ol style="list-style-type: none"> Matheson Co. Purity not specified. Consolidated Electrodynamics Corp. Purity not specified. 		
			ESTIMATED ERROR: A. $\delta h/h = 0.10$ B. $\delta h/h = 0.03$ (by compiler)		
			REFERENCES:		

COMPONENTS: (1) Butane; C ₄ H ₁₀ ; [106-97-8] (2) Oxybispropanol, (Dipropylene glycol; C ₄ H ₁₄ O ₃ ; [25265-71-8]	ORIGINAL MEASUREMENTS: Lenoir, J.-Y.; Renault, P.; Renon, H. <i>J. Chem. Eng. Data</i> <u>1971</u> , 16, 340-2.												
VARIABLES: T/K: 298-343 P/kPa: 101.3	PREPARED BY: C.L. Young												
EXPERIMENTAL VALUES:													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">T/K</th> <th style="text-align: center;">Henry's constant $H_{C_4H_{10}}/atm$</th> <th style="text-align: center;">Mole fraction at 1 atm* $x_{C_4H_{10}}$</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">298</td> <td style="text-align: center;">23.0</td> <td style="text-align: center;">0.0435</td> </tr> <tr> <td style="text-align: center;">323</td> <td style="text-align: center;">30.7</td> <td style="text-align: center;">0.0326</td> </tr> <tr> <td style="text-align: center;">343</td> <td style="text-align: center;">37.4</td> <td style="text-align: center;">0.0267</td> </tr> </tbody> </table>		T/K	Henry's constant $H_{C_4H_{10}}/atm$	Mole fraction at 1 atm* $x_{C_4H_{10}}$	298	23.0	0.0435	323	30.7	0.0326	343	37.4	0.0267
T/K	Henry's constant $H_{C_4H_{10}}/atm$	Mole fraction at 1 atm* $x_{C_4H_{10}}$											
298	23.0	0.0435											
323	30.7	0.0326											
343	37.4	0.0267											
<p>* Calculated by compiler assuming a linear function of $p_{C_4H_{10}}$ vs $x_{C_4H_{10}}$, i.e., $x_{C_4H_{10}}(1 atm) = 1/H_{C_4H_{10}}$</p>													
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.	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: $\delta T/K = \pm 0.1$; $\delta H/atm = \pm 6\%$ (estimated by compiler). REFERENCES:												

<p>COMPONENTS:</p> <p>(1) Butane; C_4H_{10}; [106-97-8] (2) 1,4-Dioxane; $C_4H_8O_2$; [123-91-1]</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u>, 23, 1-17.</p>									
<p>VARIABLES:</p> <p>T/K: 283.2, 293.2 P/kPa: 101.3</p>	<p>PREPARED BY:</p> <p>C. L. Young</p>									
<p>EXPERIMENTAL VALUES:</p> <p style="text-align: center;">Total pressure = 101.3 kPa</p>										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">T/K</th> <th style="text-align: center;">Mole ratio</th> <th style="text-align: center;">Mole fraction of butane[#]</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">283.2</td> <td style="text-align: center;">0.406</td> <td style="text-align: center;">0.289</td> </tr> <tr> <td style="text-align: center;">293.2</td> <td style="text-align: center;">0.20</td> <td style="text-align: center;">0.167</td> </tr> </tbody> </table>		T/K	Mole ratio	Mole fraction of butane [#]	283.2	0.406	0.289	293.2	0.20	0.167
T/K	Mole ratio	Mole fraction of butane [#]								
283.2	0.406	0.289								
293.2	0.20	0.167								
<p># Calculated by compiler.</p>										
<p style="text-align: center;">AUXILIARY INFORMATION</p>										
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	<p>SOURCE AND PURITY OF MATERIALS:</p> <p>No details given except that "all compounds were purified by conventional procedures".</p> <p>ESTIMATED ERROR:</p> <p>$\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler).</p> <p>REFERENCES:</p> <p>1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u>, 22, 623.</p>									

<p>COMPONENTS:</p> <p>(1) Butane; C₄H₁₀; [106-97-8]</p> <p>(2) Acetic acid anhydride; C₄H₆O₃; [108-24-7]</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u>, 23, 1-17.</p>	
<p>VARIABLES:</p> <p>T/K: 278.2-293.2</p> <p>P/kPa: 101.3</p>	<p>PREPARED BY:</p> <p>C. L. Young</p>	
<p>EXPERIMENTAL VALUES:</p> <p style="text-align: center;">Total pressure = 101.3 kPa</p>		
T/K	Mole ratio	Mole fraction of butane [#]
<p>278.2</p> <p>283.2</p> <p>293.2</p>	<p>0.123</p> <p>0.086</p> <p>0.0525</p>	<p>0.110</p> <p>0.079</p> <p>0.0499</p>
<p># Calculated by compiler.</p>		
AUXILIARY INFORMATION		
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	<p>SOURCE AND PURITY OF MATERIALS:</p> <p>No details given except that "all compounds were purified by conventional procedures".</p> <p>ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler).</p> <p>REFERENCES:</p> <p>1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u>, 22, 623.</p>	

COMPONENTS: (1) Butane; C_4H_{10} ; [106-97-8] (2) Water; H_2O ; [7732-18-5] Ethanol; C_2H_6O ; [64-17-5] Diethylether; $C_4H_{10}O$; [60-29-7] Chloroform; $CHCl_3$; [67-66-3]	ORIGINAL MEASUREMENTS: Lebeau, P. <i>Bull. Acad. Roy. Belg.</i> <u>1908</u> , 300-4.																																								
VARIABLES: $T/K = 290, 291$ $p/kPa = 102.9 - 104.8$	PREPARED BY: H. L. Clever																																								
EXPERIMENTAL VALUES: <table border="1" data-bbox="302 514 1118 1018"> <thead> <tr> <th colspan="2">Temperature</th> <th>Pressure^a</th> <th>Solubility</th> </tr> <tr> <th>$t/^\circ C$</th> <th>T/K</th> <th>$p/mmHg$</th> <th>Volume Butane/Volume Solvent</th> </tr> </thead> <tbody> <tr> <td colspan="4">Water</td> </tr> <tr> <td>17</td> <td>290</td> <td>772</td> <td>0.15</td> </tr> <tr> <td colspan="4">Ethanol</td> </tr> <tr> <td>17</td> <td>290</td> <td>775</td> <td>18.83</td> </tr> <tr> <td colspan="4">Diethylether or 1'1'-oxybisethane</td> </tr> <tr> <td>18</td> <td>291</td> <td>773</td> <td>29.8</td> </tr> <tr> <td colspan="4">Chloroform or trichloromethane</td> </tr> <tr> <td>17</td> <td>290</td> <td>786</td> <td>32.5</td> </tr> </tbody> </table> <p>^a Not clear whether this is total pressure or butane partial pressure. It is probably the total pressure.</p>		Temperature		Pressure ^a	Solubility	$t/^\circ C$	T/K	$p/mmHg$	Volume Butane/Volume Solvent	Water				17	290	772	0.15	Ethanol				17	290	775	18.83	Diethylether or 1'1'-oxybisethane				18	291	773	29.8	Chloroform or trichloromethane				17	290	786	32.5
Temperature		Pressure ^a	Solubility																																						
$t/^\circ C$	T/K	$p/mmHg$	Volume Butane/Volume Solvent																																						
Water																																									
17	290	772	0.15																																						
Ethanol																																									
17	290	775	18.83																																						
Diethylether or 1'1'-oxybisethane																																									
18	291	773	29.8																																						
Chloroform or trichloromethane																																									
17	290	786	32.5																																						
AUXILIARY INFORMATION																																									
METHOD/APPARATUS/PROCEDURE: Details not given.	SOURCE AND PURITY OF MATERIALS: (1) Butane. Prepared by author by the reaction of sodium in liquid ammonia on butyl iodide. The normal boiling point is $0.5^\circ C$, and the critical temperature is $151-2^\circ C$. (2) Solvents. No information.																																								
ESTIMATED ERROR:																																									
REFERENCES:																																									

<p>COMPONENTS:</p> <p>(1) Butane; C₄H₁₀; [106-97-8] (2) Hexanoic acid; C₆H₁₂O₂; [142-62-1]</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u>, 23, 1-17.</p>															
<p>VARIABLES:</p> <p>T/K: 278.2-298.2 P/kPa: 101.3</p>	<p>PREPARED BY:</p> <p>C. L. Young</p>															
<p>EXPERIMENTAL VALUES:</p> <p style="text-align: center;">Total pressure = 101.3 kPa</p>																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">T/K</th> <th style="text-align: left;">Mole ratio</th> <th style="text-align: left;">Mole fraction of butane[#]</th> </tr> </thead> <tbody> <tr> <td>278.2</td> <td>1.80</td> <td>0.643</td> </tr> <tr> <td>283.2</td> <td>1.00</td> <td>0.500</td> </tr> <tr> <td>293.2</td> <td>0.495</td> <td>0.331</td> </tr> <tr> <td>298.2</td> <td>0.390</td> <td>0.281</td> </tr> </tbody> </table>		T/K	Mole ratio	Mole fraction of butane [#]	278.2	1.80	0.643	283.2	1.00	0.500	293.2	0.495	0.331	298.2	0.390	0.281
T/K	Mole ratio	Mole fraction of butane [#]														
278.2	1.80	0.643														
283.2	1.00	0.500														
293.2	0.495	0.331														
298.2	0.390	0.281														
<p>[#] Calculated by compiler.</p>																
<p>AUXILIARY INFORMATION</p>																
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	<p>SOURCE AND PURITY OF MATERIALS:</p> <p>No details given except that "all compounds were purified by conventional procedures".</p> <p>ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler).</p> <p>REFERENCES:</p> <p>1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u>, 22, 623.</p>															

COMPONENTS: (1) Butane; C ₄ H ₁₀ ; [106-97-8] (2) Ethoxybenzene; C ₈ H ₁₀ O; [103-73-1] or Benzenemethanol (<i>Benzyl alcohol</i>); C ₇ H ₈ O; [100-51-6] or 1-Phenylethanone (<i>Acetophenone</i>); C ₈ H ₈ O; [98-86-2]	ORIGINAL MEASUREMENTS: Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u> , 23, 1-17.																																	
VARIABLES: T/K: 278.2-293.2 P/kPa: 101.3	PREPARED BY: C. L. Young																																	
EXPERIMENTAL VALUES: Total pressure = 101.3 kPa																																		
<table border="1"> <thead> <tr> <th>T/K</th> <th>Mole ratio</th> <th>Mole fraction of butane[#]</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="text-align: center;">Ethoxybenzene; C₈H₁₀O; [103-73-1]</td> </tr> <tr> <td>278.2</td> <td>3.35</td> <td>0.770</td> </tr> <tr> <td>283.2</td> <td>0.941</td> <td>0.485</td> </tr> <tr> <td>293.2</td> <td>0.410</td> <td>0.291</td> </tr> <tr> <td colspan="3" style="text-align: center;">Benzenemethanol; C₇H₈O; [100-51-6]</td> </tr> <tr> <td>278.2</td> <td>0.214</td> <td>0.176</td> </tr> <tr> <td>283.2</td> <td>0.111</td> <td>0.0999</td> </tr> <tr> <td>293.2</td> <td>0.073</td> <td>0.0680</td> </tr> <tr> <td colspan="3" style="text-align: center;">1-Phenylethanone; C₈H₈O; [98-86-2]</td> </tr> <tr> <td>293.2</td> <td>0.164</td> <td>0.141</td> </tr> </tbody> </table>		T/K	Mole ratio	Mole fraction of butane [#]	Ethoxybenzene; C ₈ H ₁₀ O; [103-73-1]			278.2	3.35	0.770	283.2	0.941	0.485	293.2	0.410	0.291	Benzenemethanol; C ₇ H ₈ O; [100-51-6]			278.2	0.214	0.176	283.2	0.111	0.0999	293.2	0.073	0.0680	1-Phenylethanone; C ₈ H ₈ O; [98-86-2]			293.2	0.164	0.141
T/K	Mole ratio	Mole fraction of butane [#]																																
Ethoxybenzene; C ₈ H ₁₀ O; [103-73-1]																																		
278.2	3.35	0.770																																
283.2	0.941	0.485																																
293.2	0.410	0.291																																
Benzenemethanol; C ₇ H ₈ O; [100-51-6]																																		
278.2	0.214	0.176																																
283.2	0.111	0.0999																																
293.2	0.073	0.0680																																
1-Phenylethanone; C ₈ H ₈ O; [98-86-2]																																		
293.2	0.164	0.141																																
[#] Calculated by compiler.																																		
AUXILIARY INFORMATION																																		
METHOD/APPARATUS/PROCEDURE: Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).	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. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u> , 22, 623.																																	

<p>COMPONENTS:</p> <p>(1) Butane; C_4H_{10}; [106-97-8] (2) 2-Hydroxybenzoic acid, methyl ester; $C_8H_8O_3$; [119-36-8]</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u>, 23, 1-17.</p>															
<p>VARIABLES:</p> <p>T/K: 278.2-298.2 P/kPa: 101.3</p>	<p>PREPARED BY:</p> <p>C. L. Young</p>															
<p>EXPERIMENTAL VALUES:</p> <p style="text-align: center;">Total pressure = 101.3 kPa</p>																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">T/K</th> <th style="text-align: left;">Mole ratio</th> <th style="text-align: left;">Mole fraction of butane[#]</th> </tr> </thead> <tbody> <tr> <td>278.2</td> <td>0.582</td> <td>0.368</td> </tr> <tr> <td>283.2</td> <td>0.370</td> <td>0.270</td> </tr> <tr> <td>293.2</td> <td>0.215</td> <td>0.177</td> </tr> <tr> <td>298.2</td> <td>0.175</td> <td>0.149</td> </tr> </tbody> </table>		T/K	Mole ratio	Mole fraction of butane [#]	278.2	0.582	0.368	283.2	0.370	0.270	293.2	0.215	0.177	298.2	0.175	0.149
T/K	Mole ratio	Mole fraction of butane [#]														
278.2	0.582	0.368														
283.2	0.370	0.270														
293.2	0.215	0.177														
298.2	0.175	0.149														
<p style="text-align: center;">[#] Calculated by compiler.</p>																
<p>AUXILIARY INFORMATION</p>																
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	<p>SOURCE AND PURITY OF MATERIALS:</p> <p>No details given except that "all compounds were purified by conventional procedures".</p> <p>ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler).</p> <p>REFERENCES:</p> <p>1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u>, 22, 623.</p>															

COMPONENTS: (1) Butane; C_4H_{10} ; [106-97-8] (2) Esters of phosphoric acid	ORIGINAL MEASUREMENTS: Lenoir, J-Y.; Renault, P.; Renon, H. <i>J. Chem. Eng. Data</i> , <u>1971</u> , <i>16</i> , 340-2	
VARIABLES: T/K : 298.2-343.2 P/kPa : 101.3	PREPARED BY: C. L. Young	
EXPERIMENTAL VALUES:		
T/K	Henry's constant $H_{C_4H_{10}}^H / atm$	Mole fraction at 1 atm* $x_{C_4H_{10}}$
325.2	Phosphoric acid, trimethyl ester; $C_3H_9O_4P$; [512-56-1] 49.6	0.0202
325.2	Phosphoric acid, triethyl ester; $C_6H_{15}O_4P$; [78-40-0] 14.2	0.0704
298.2 323.2 343.2	Phosphoric acid, tripropyl ester; $C_9H_{21}O_4P$; [513-08-6] 4.04 7.19 10.6	0.248 0.139 0.0943
325.2	Phosphoric acid, tributyl ester; $C_{12}H_{27}O_4P$; [126-73-8] 6.10	0.164
325.2	Phosphoric acid, tri(2-methylpropyl) ester; $C_{12}H_{27}O_4P$; [126-71-6] 5.44	0.184
* Calculated by compiler assuming a linear function of $p_{C_4H_{10}}$ vs $x_{C_4H_{10}}$, i.e., $x_{C_4H_{10}}(1 atm) = 1/H_{C_4H_{10}}$		
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.	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: $\delta T/K = \pm 0.1$; $\delta H/atm = \pm 6\%$ (estimated by compiler).	
	REFERENCES:	

COMPONENTS: (1) Butane; C ₄ H ₁₀ ; [106-97-8] (2) 1,1'-Oxybis(pentane (dipentyl ether)); C ₁₀ H ₂₂ O; [693-65-2]	ORIGINAL MEASUREMENTS: Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u> , 23, 1-17.												
VARIABLES: T/K: 278.2-293.2 P/kPa: 101.3	PREPARED BY: C. L. Young												
EXPERIMENTAL VALUES: <p style="text-align: center;">Total pressure = 101.3 kPa</p>													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">T/K</th> <th style="text-align: left;">Mole ratio</th> <th style="text-align: left;">Mole fraction of butane[#]</th> </tr> </thead> <tbody> <tr> <td>278.2</td> <td>4.917</td> <td>0.831</td> </tr> <tr> <td>283.2</td> <td>2.480</td> <td>0.713</td> </tr> <tr> <td>293.2</td> <td>1.081</td> <td>0.519</td> </tr> </tbody> </table>		T/K	Mole ratio	Mole fraction of butane [#]	278.2	4.917	0.831	283.2	2.480	0.713	293.2	1.081	0.519
T/K	Mole ratio	Mole fraction of butane [#]											
278.2	4.917	0.831											
283.2	2.480	0.713											
293.2	1.081	0.519											
<p style="text-align: center;">[#] Calculated by compiler.</p>													
AUXILIARY INFORMATION													
METHOD/APPARATUS/PROCEDURE: <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	SOURCE AND PURITY OF MATERIALS: <p>No details given except that "all compounds were purified by conventional procedures".</p> ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler). REFERENCES: 1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u> , 22, 623.												

COMPONENTS: (1) Butane; C ₄ H ₁₀ ; [106-97-8] (2) 1,1'-Oxybisoctane (dioctyl ether); C ₁₆ H ₃₄ O; [629-82-3]	ORIGINAL MEASUREMENTS: Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1973</u> , 23, 1-17.															
VARIABLES: T/K: 278.2-298.2 P/kPa: 101.3	PREPARED BY: C.L. Young															
EXPERIMENTAL VALUES: <p style="text-align: center;">Total pressure = 101.3 kPa</p>																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">T/K</th> <th style="text-align: left;">Mole ratio</th> <th style="text-align: left;">Mole fraction of butane[#]</th> </tr> </thead> <tbody> <tr> <td>278.2</td> <td>5.666</td> <td>0.850</td> </tr> <tr> <td>283.2</td> <td>2.571</td> <td>0.720</td> </tr> <tr> <td>293.2</td> <td>1.38</td> <td>0.580</td> </tr> <tr> <td>298.2</td> <td>1.05</td> <td>0.512</td> </tr> </tbody> </table>		T/K	Mole ratio	Mole fraction of butane [#]	278.2	5.666	0.850	283.2	2.571	0.720	293.2	1.38	0.580	298.2	1.05	0.512
T/K	Mole ratio	Mole fraction of butane [#]														
278.2	5.666	0.850														
283.2	2.571	0.720														
293.2	1.38	0.580														
298.2	1.05	0.512														
<p style="text-align: center;">[#] Calculated by compiler.</p>																
AUXILIARY INFORMATION																
METHOD/APPARATUS/PROCEDURE: <p>Gas was passed into a known weight of pure liquid in a bubbler tube at a total pressure measured using a manometer assembly. The amount of absorbed gas was estimated by weighing. The temperature was controlled to within 0.2 K. The apparatus and procedure are described by Gerrard, ref. (1).</p>	SOURCE AND PURITY OF MATERIALS: <p>No details given except that "all compounds were purified by conventional procedures".</p> ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler). REFERENCES: 1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u> , 22, 623.															

COMPONENTS: 1. Propane, 2-methyl-; (isobutane) C_4H_{10} ; [75-28-5] 2. 1,3-Dioxolan-2-one, 4-methyl-, (Propylene carbonate); $C_4H_6O_3$; [108-32-7]	ORIGINAL MEASUREMENTS: Lenoir, J-Y.; Renault, P.; Renon, H. <i>J. Chem. Eng. Data</i> <u>1971</u> , 16, 340-2												
VARIABLES: T/K : 298.2 - 343.2 P/kPa : 101.3	PREPARED BY: C. L. Young												
EXPERIMENTAL VALUES: <table border="1" data-bbox="257 612 1102 838" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">T/K</th> <th style="text-align: center;">Henry's constant $H_{C_4H_{10}}/atm$</th> <th style="text-align: center;">Mole fraction at 1 atm* $x_{C_4H_{10}}$</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">298.2</td> <td style="text-align: center;">66.3</td> <td style="text-align: center;">0.0151</td> </tr> <tr> <td style="text-align: center;">323.2</td> <td style="text-align: center;">94.3</td> <td style="text-align: center;">0.0106</td> </tr> <tr> <td style="text-align: center;">343.2</td> <td style="text-align: center;">110</td> <td style="text-align: center;">0.00909</td> </tr> </tbody> </table> <p data-bbox="102 893 1159 955">* Calculated by compiler assuming a linear function of $p_{C_4H_{10}}$ vs $x_{C_4H_{10}}$, i.e., $x_{C_4H_{10}}(1 atm) = 1/H_{C_4H_{10}}$</p>		T/K	Henry's constant $H_{C_4H_{10}}/atm$	Mole fraction at 1 atm* $x_{C_4H_{10}}$	298.2	66.3	0.0151	323.2	94.3	0.0106	343.2	110	0.00909
T/K	Henry's constant $H_{C_4H_{10}}/atm$	Mole fraction at 1 atm* $x_{C_4H_{10}}$											
298.2	66.3	0.0151											
323.2	94.3	0.0106											
343.2	110	0.00909											
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.	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: $\delta T/K = \pm 0.1$; $\delta H/atm = \pm 6\%$ (estimated by compiler). REFERENCES:												

COMPONENTS: (1) 2-Methylpropane or isobutane; C_4H_{10} ; [75-28-5] (2) Water; H_2O ; [7732-18-5] Ethanol; C_2H_6O ; [64-17-5] Diethylether; $C_4H_{10}O$; [60-29-7] Chloroform; $CHCl_3$; [67-66-3]	ORIGINAL MEASUREMENTS: Lebeau, P. <i>Bull. Acad. Roy. Belg.</i> <u>1908</u> , 300-4.																																								
VARIABLES: $T/K = 290, 291$ $p/kPa = 102.9 - 104.8$	PREPARED BY: H. L. Clever																																								
EXPERIMENTAL VALUES: <table border="1" data-bbox="296 534 1151 1038"> <thead> <tr> <th colspan="2">Temperature</th> <th>Pressure^a</th> <th>Solubility</th> </tr> <tr> <th>$t/^\circ C$</th> <th>T/K</th> <th>$p/mmHg$</th> <th>Volume Isobutane/Volume Solvent</th> </tr> </thead> <tbody> <tr> <td colspan="4">Water</td> </tr> <tr> <td>17</td> <td>290</td> <td>772</td> <td>0.13</td> </tr> <tr> <td colspan="4">Ethanol</td> </tr> <tr> <td>17</td> <td>290</td> <td>775</td> <td>13.2</td> </tr> <tr> <td colspan="4">Diethylether or 1'1'-oxybisethane</td> </tr> <tr> <td>18</td> <td>291</td> <td>773</td> <td>27.9</td> </tr> <tr> <td colspan="4">Chloroform or trichloromethane</td> </tr> <tr> <td>17</td> <td>290</td> <td>786</td> <td>39.5</td> </tr> </tbody> </table> <p data-bbox="309 1068 1125 1128">^a Not clear whether this is total pressure or isobutane partial pressure. It is probably the total pressure.</p>		Temperature		Pressure ^a	Solubility	$t/^\circ C$	T/K	$p/mmHg$	Volume Isobutane/Volume Solvent	Water				17	290	772	0.13	Ethanol				17	290	775	13.2	Diethylether or 1'1'-oxybisethane				18	291	773	27.9	Chloroform or trichloromethane				17	290	786	39.5
Temperature		Pressure ^a	Solubility																																						
$t/^\circ C$	T/K	$p/mmHg$	Volume Isobutane/Volume Solvent																																						
Water																																									
17	290	772	0.13																																						
Ethanol																																									
17	290	775	13.2																																						
Diethylether or 1'1'-oxybisethane																																									
18	291	773	27.9																																						
Chloroform or trichloromethane																																									
17	290	786	39.5																																						
AUXILIARY INFORMATION																																									
METHOD/APPARATUS/PROCEDURE: Details not given.	SOURCE AND PURITY OF MATERIALS: (1) Isobutane. Prepared by the author by the reaction of sodium or calcium in liquid ammonia on isobutyl chloride. The normal boiling point is $-10.5^\circ C$ and the critical temperature is $134-5^\circ C$. (2) Solvents. No information. ESTIMATED ERROR: REFERENCES:																																								

COMPONENTS: (1) 2-Methylpropane (isobutane); C_4H_{10} ; [75-28-5] (2) 2-Furancarboxaldehyde (furfural); $C_5H_4O_2$; [98-01-1]	ORIGINAL MEASUREMENTS: Ezheleva, A.E.; Zorin, A.D. <i>Tr. Khim. Khim. Tech. (Gorkii)</i> <u>1961</u> , 1, 37-40.																								
VARIABLES: T/K : 303.15-343.15 P/kPa : 101.325 and above	PREPARED BY: W. Hayduk																								
EXPERIMENTAL VALUES:																									
<table border="1"> <thead> <tr> <th>T/K</th> <th>Ostwald Coefficient² $L/cm^3 cm^{-3}$</th> <th>Bunsen Coefficient² $\alpha/cm^3 (STP) cm^{-3} atm^{-1}$</th> <th>Mole Fraction¹ x_1</th> </tr> </thead> <tbody> <tr> <td>303.15</td> <td>8.19</td> <td>7.28</td> <td>0.0275 (0.0276)³</td> </tr> <tr> <td>313.15</td> <td>7.98</td> <td>6.85</td> <td>0.0262 (0.0263)</td> </tr> <tr> <td>323.15</td> <td>7.85</td> <td>6.51</td> <td>0.0252 (0.0250)</td> </tr> <tr> <td>333.15</td> <td>7.66</td> <td>6.15</td> <td>0.0241 (0.0238)</td> </tr> <tr> <td>343.15</td> <td>7.29</td> <td>5.67</td> <td>0.0225 (0.0228)</td> </tr> </tbody> </table>		T/K	Ostwald Coefficient ² $L/cm^3 cm^{-3}$	Bunsen Coefficient ² $\alpha/cm^3 (STP) cm^{-3} atm^{-1}$	Mole Fraction ¹ x_1	303.15	8.19	7.28	0.0275 (0.0276) ³	313.15	7.98	6.85	0.0262 (0.0263)	323.15	7.85	6.51	0.0252 (0.0250)	333.15	7.66	6.15	0.0241 (0.0238)	343.15	7.29	5.67	0.0225 (0.0228)
T/K	Ostwald Coefficient ² $L/cm^3 cm^{-3}$	Bunsen Coefficient ² $\alpha/cm^3 (STP) cm^{-3} atm^{-1}$	Mole Fraction ¹ x_1																						
303.15	8.19	7.28	0.0275 (0.0276) ³																						
313.15	7.98	6.85	0.0262 (0.0263)																						
323.15	7.85	6.51	0.0252 (0.0250)																						
333.15	7.66	6.15	0.0241 (0.0238)																						
343.15	7.29	5.67	0.0225 (0.0228)																						
<p>¹Original data given as the inverse of Henry's constant which is equivalent to mole fraction at a gas partial pressure of 101.325 kPa.</p> <p>²Ostwald and Bunsen coefficients calculated by compiler using authors' assumption that solvent is non-volatile.</p> <p>³From equation of smoothed data: $\ln x_1 = 5.3391 - 1.5624 \ln T$ Correlation coefficient = 0.9928</p>																									
AUXILIARY INFORMATION																									
METHOD/APPARATUS/PROCEDURE: <p>The apparatus consisted of a two-chamber, rocking device with separate gas and liquid chambers joined by two tubes and microvalves. The gas chamber was equipped with a pressure gauge. After evacuation, gas and deaerated solvent were separately charged, and then contacted by opening the microvalves and by rocking. The solubility was calculated from a knowledge of the volume of the solvent charged, and the initial and final gas pressures.</p> <p>The solvent was considered non-volatile and the gas pressure was considered to be the total pressure.</p>	SOURCE AND PURITY OF MATERIALS: <ol style="list-style-type: none"> Source and purity not given. Gas purified by low temperature fractionation and analyzed by gas chromatography. Source and purity not given. Refractive index measured: $n_D^{20} = 1.5305$ ESTIMATED ERROR: $\delta T/K = 0.05$ $\delta x_1/x_1 = 0.05$ (estimated by compiler)																								
REFERENCES:																									

COMPONENTS: (1) 2-Methylpropane, (<i>isobutane</i>); C_4H_{10} ; [75-28-5] (2) Hexanoic acid; $C_6H_{12}O_2$; [142-62-1]	ORIGINAL MEASUREMENTS: Gerrard, W. <i>Solubility of Gases and Liquids</i> , Plenum, New York, <u>1976</u> , Chapter 12.																																				
VARIABLES: T/k : 273.15 P/kPa : 13.3-101.3	PREPARED BY: C.L. Young																																				
EXPERIMENTAL VALUES: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">T/K</th> <th style="text-align: center;">$P/mmHg$</th> <th style="text-align: center;">P/kPa</th> <th style="text-align: center;">Mole fraction 2-methylpropane in liquid, $x_{C_4H_{10}}$</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">273.15</td> <td style="text-align: center;">100</td> <td style="text-align: center;">13.3</td> <td style="text-align: center;">0.040</td> </tr> <tr> <td></td> <td style="text-align: center;">200</td> <td style="text-align: center;">26.7</td> <td style="text-align: center;">0.084</td> </tr> <tr> <td></td> <td style="text-align: center;">300</td> <td style="text-align: center;">40.0</td> <td style="text-align: center;">0.128</td> </tr> <tr> <td></td> <td style="text-align: center;">400</td> <td style="text-align: center;">53.3</td> <td style="text-align: center;">0.180</td> </tr> <tr> <td></td> <td style="text-align: center;">500</td> <td style="text-align: center;">66.7</td> <td style="text-align: center;">0.228</td> </tr> <tr> <td></td> <td style="text-align: center;">600</td> <td style="text-align: center;">80.0</td> <td style="text-align: center;">0.280</td> </tr> <tr> <td></td> <td style="text-align: center;">700</td> <td style="text-align: center;">93.3</td> <td style="text-align: center;">0.360</td> </tr> <tr> <td></td> <td style="text-align: center;">760</td> <td style="text-align: center;">101.3</td> <td style="text-align: center;">0.416</td> </tr> </tbody> </table>		T/K	$P/mmHg$	P/kPa	Mole fraction 2-methylpropane in liquid, $x_{C_4H_{10}}$	273.15	100	13.3	0.040		200	26.7	0.084		300	40.0	0.128		400	53.3	0.180		500	66.7	0.228		600	80.0	0.280		700	93.3	0.360		760	101.3	0.416
T/K	$P/mmHg$	P/kPa	Mole fraction 2-methylpropane in liquid, $x_{C_4H_{10}}$																																		
273.15	100	13.3	0.040																																		
	200	26.7	0.084																																		
	300	40.0	0.128																																		
	400	53.3	0.180																																		
	500	66.7	0.228																																		
	600	80.0	0.280																																		
	700	93.3	0.360																																		
	760	101.3	0.416																																		
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).	SOURCE AND PURITY OF MATERIALS: No details given. ESTIMATED ERROR: $\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler) REFERENCES: 1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u> 22, 623-650. 2. Gerrard, W. <i>Solubility of Gases and Liquids</i> , Plenum Press, New York, <u>1976</u> Chapter 1.																																				

COMPONENTS:			ORIGINAL MEASUREMENTS:	
(1) 2-Methylpropane, (isobutane); C ₄ H ₁₀ ; [75-28-5]			Gerrard, W.	
(2) 1,1'-Oxybisoctane, (dioctyl ether); C ₁₆ H ₃₄ O; [629-82-3]			<i>Solubility of Gases and Liquids</i> , Plenum, New York, <u>1976</u> , Chapter 12.	
VARIABLES:			PREPARED BY:	
T/K: 273.15			C.L. Young	
P/kPa: 13.3-101.3				
EXPERIMENTAL VALUES:				
T/K	P/mmHg	P/kPa	Mole fraction of 2-methylpropane in liquid, ^w C ₄ H ₁₀	
273.15	100	13.3	0.101	
	200	26.7	0.195	
	300	40.0	0.286	
	400	53.3	0.375	
	500	66.7	0.457	
	600	80.0	0.536	
	700	93.3	0.615	
	760	101.3	0.664	
AUXILIARY INFORMATION				
METHOD/APPARATUS/PROCEDURE:			SOURCE AND PURITY OF MATERIALS:	
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).			No details given.	
			ESTIMATED ERROR:	
			$\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$ (estimated by compiler).	
			REFERENCES:	
			1. Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u> 22, 623-650.	
			2. Gerrard, W. <i>Solubility of Gases and Liquids</i> , Plenum Press, New York, <u>1976</u> Chapter 1.	

COMPONENTS: (1) 2-Methylpropane (isobutane); C_4H_{10} ; [75-28-5] (2) Decanedioic acid, bis (2-ethylhexyl) ester (di-2-ethylhexyl sebacate); $C_{26}H_{50}O_4$; [122-62-3]	ORIGINAL MEASUREMENTS: Carter, D.; Esterson, G.L. <i>J. Chem. Eng. Data</i> <u>1973</u> , <i>18</i> , 166-169.																		
VARIABLES: T/K : 328.15 P/kPa : 101.325	PREPARED BY: W. Hayduk																		
EXPERIMENTAL VALUES:																			
<table border="1"> <thead> <tr> <th>T/K</th> <th>Modified Henry's constant¹, h/g ($mol\ cm^{-3}$)_g ($mol\ cm^{-3}$)_l⁻¹</th> <th>Ostwald Coefficient² $L/cm^3\ cm^{-3}$</th> <th>Bunsen Coefficient² α/cm^3 (STP) cm^{-3}</th> <th>Mole Fraction² $/x_1$</th> <th>Method</th> </tr> </thead> <tbody> <tr> <td>328.15</td> <td>0.090</td> <td>11.1</td> <td>9.25</td> <td>0.165</td> <td>A</td> </tr> <tr> <td>328.15</td> <td>0.088</td> <td>11.4</td> <td>9.46</td> <td>0.168</td> <td>B</td> </tr> </tbody> </table>		T/K	Modified Henry's constant ¹ , h/g ($mol\ cm^{-3}$) _g ($mol\ cm^{-3}$) _l ⁻¹	Ostwald Coefficient ² $L/cm^3\ cm^{-3}$	Bunsen Coefficient ² α/cm^3 (STP) cm^{-3}	Mole Fraction ² $/x_1$	Method	328.15	0.090	11.1	9.25	0.165	A	328.15	0.088	11.4	9.46	0.168	B
T/K	Modified Henry's constant ¹ , h/g ($mol\ cm^{-3}$) _g ($mol\ cm^{-3}$) _l ⁻¹	Ostwald Coefficient ² $L/cm^3\ cm^{-3}$	Bunsen Coefficient ² α/cm^3 (STP) cm^{-3}	Mole Fraction ² $/x_1$	Method														
328.15	0.090	11.1	9.25	0.165	A														
328.15	0.088	11.4	9.46	0.168	B														
<p>¹Original data listed as a modified Henry's constant, h.</p> <p>²Calculated by compiler assuming Henry's law and ideal gas law apply.</p>																			
AUXILIARY INFORMATION																			
METHOD/APPARATUS/PROCEDURE: <p>Two different methods were used: method A, chromatographic, and method B, liquid saturation.</p> <p>A. A chromatography column containing a known amount of solvent was installed in an oven. Helium was used as a carrier gas. Pulses of solute gas and argon were consecutively injected into the gas stream. The solubility was determined from the total retention times. The solubilities were determined at effectively very low partial pressures and hence linear extrapolation to atmospheric pressure is subject to error.</p> <p>B. The increase in mass of the solvent exposed to moderate pressures of gas was measured. Details not given.</p>	SOURCE AND PURITY OF MATERIALS: <ol style="list-style-type: none"> Matheson Co. Purity not specified. Consolidated Electrodynamics Corp. Purity not specified. ESTIMATED ERROR: A. $\delta h/h = 0.10$ B. $\delta h/h = 0.03$ (by compiler) REFERENCES:																		