

COMPONENTS:			ORIGINAL MEASUREMENTS:		
1. Hydrogen sulfide; H ₂ S; [7783-06-4]			Shakhova, S.F.; Bondareva, T.I.; Zubchenko, Yu. P.		
2. 4-Methyl-1,3-dioxolan-2-one, (propylene carbonate); C ₄ H ₆ O ₃ ; [108-32-7]			<i>Khim. Prom.</i> 1966, (10), 753-4.		
VARIABLES:			PREPARED BY:		
Temperature, pressure			C.L. Young.		
EXPERIMENTAL VALUES:					
T/K	P/mmHg	P/kPa	α^+ vol/vol	Mole fraction of hydrogen sulfide in liquid, $x_{\text{H}_2\text{S}}$	
273.15	200	26.7	5.46	0.0206	
	400	53.3	11.2	0.0408	
	600	80.0	16.7	0.0596	
	760	101	20.9	0.0730	
288.15	200	26.7	3.59	0.0138	
	400	53.3	7.00	0.0266	
	600	80.0	10.4	0.0386	
	760	101	12.8	0.0480	
298.15	200	26.7	2.90	0.0112	
	400	53.3	5.60	0.0218	
	600	80.0	8.30	0.0314	
	760	101	10.4	0.0380	
313.15	200	26.7	2.00	0.0080	
	400	53.3	3.90	0.0150	
	600	80.0	5.65	0.0214	
	760	101	6.90	0.0264	
+ appears to be volume of gas reduced to T/K = 273.15 and P = 1 atmosphere absorbed by unit volume of liquid (measured at room temperature).					
AUXILIARY INFORMATION					
METHOD/APPARATUS/PROCEDURE:			SOURCE AND PURITY OF MATERIALS:		
Glass equilibrium cell fitted with magnetic stirrer. Samples of liquid analysed by stripping out hydrogen sulfide. Details in source and ref. (1).			No details given.		
			ESTIMATED ERROR:		
			$\delta T/K = \pm 0.1$; $\delta P/kPa = \pm 1.0$; $\delta x_{\text{H}_2\text{S}} = \pm 5\%$ (estimated by compiler).		
			REFERENCES:		
			1. Shenderei, E.R.; Zel'venskii, Ya.D. Ivanovskii, F.P. <i>Khim. Prom.</i> 1960, 370.		

COMPONENTS: 1. Hydrogen sulfide; H ₂ S; [7783-06-4] 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> , 16, 340-2												
VARIABLES: Temperature	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 $H_{\text{H}_2\text{S}} / \text{atm}$</th> <th style="text-align: center;">Mole fraction at 1 atm* $x_{\text{H}_2\text{S}}$</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">298.15</td> <td style="text-align: center;">20.9</td> <td style="text-align: center;">0.0478</td> </tr> <tr> <td style="text-align: center;">323.15</td> <td style="text-align: center;">33.8</td> <td style="text-align: center;">0.0296</td> </tr> <tr> <td style="text-align: center;">343.15</td> <td style="text-align: center;">40.1</td> <td style="text-align: center;">0.0249</td> </tr> </tbody> </table> <p>* Calculated by compiler assuming a linear function of $P_{\text{H}_2\text{S}}$ vs $x_{\text{H}_2\text{S}}$, ie. $x_{\text{H}_2\text{S}} (1 \text{ atm}) = 1/H_{\text{H}_2\text{S}}$</p>		T/K	Henry's Constant $H_{\text{H}_2\text{S}} / \text{atm}$	Mole fraction at 1 atm* $x_{\text{H}_2\text{S}}$	298.15	20.9	0.0478	323.15	33.8	0.0296	343.15	40.1	0.0249
T/K	Henry's Constant $H_{\text{H}_2\text{S}} / \text{atm}$	Mole fraction at 1 atm* $x_{\text{H}_2\text{S}}$											
298.15	20.9	0.0478											
323.15	33.8	0.0296											
343.15	40.1	0.0249											
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:												

COMPONENTS:		ORIGINAL MEASUREMENTS:	
1. Hydrogen sulfide; H ₂ S; [7783-06-4]		Isaacs, E.E.; Otto, F.D.; Mather, A.E.	
2. 4-Methyl-1,3-dioxolan-2-one, (propylene carbonate); C ₄ H ₆ O ₃ ; [108-32-7]		<i>Can. J. Chem. Eng.</i> <u>1977</u> , 55, 751 - 752.	
VARIABLES:		PREPARED BY:	
Temperature		P.G.T. Fogg	
EXPERIMENTAL VALUES:			
T/K	P _{H₂S} /kPa	Mole ratio in liquid H ₂ S/propylene carbonate	Mole fraction* x _{H₂S}
313.2	2378.4	2.631	0.725
	2140.9	1.943	0.660
	1430.7	0.943	0.485
	616.2	0.231	0.188
	244.7	0.062	0.058
373.2	4960.0	1.202	0.546
	3594.4	0.622	0.383
	2189.1	0.308	0.235
	639.1	0.062	0.058
	184.7	0.0066	0.0066
* calculated by the compiler.			
AUXILIARY INFORMATION			
METHOD/APPARATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:	
<p>The equilibrium cell consisted of a Jerguson gauge with a 250 cm³ gas reservoir. Temperatures were measured by thermocouples and controlled to ± 0.5 K by an air-bath. Pressures were measured by a Heise Bourdon tube gauge. The cell was charged with solvent. H₂S was added to give an appropriate pressure. Nitrogen was added, when necessary, to ensure that total pressure > 350 kPa. Gases were circulated by a magnetic pump for at least 8 h. The gas phase was analysed by gas chromatography. Samples of the liquid phase were withdrawn, heated at barometric pressure and the quantity of gas evolved found from P-V-T values.</p>		1. no information 2. from Eastman Kodak Co.; minimum purity 98%.	
		ESTIMATED ERROR:	
		δT/K = ± 0.5 δ(mole ratio) = ± 0.02 or 4%, whichever is the larger (authors).	
		REFERENCES:	

COMPONENTS: 1. Hydrogen sulfide; H ₂ S; [7783-06-4] 2. 4-Methyl-1,3-dioxolan-2-one, (Propylene carbonate); C ₄ H ₈ O ₃ ; [108-32-7]	ORIGINAL MEASUREMENTS: Rivas, O.R.; Prausnitz, J.M. <i>Am. Inst. Chem. Engrs. J.</i> <u>1979</u> , 25, 975-984.																		
VARIABLES: Temperature	PREPARED BY: C.L. Young																		
EXPERIMENTAL VALUES: <table border="1" data-bbox="79 478 1204 934"> <thead> <tr> <th data-bbox="244 534 289 561">T/K</th> <th data-bbox="436 534 701 582">Henry's constant, <i>H</i> /MPa</th> <th data-bbox="769 534 1039 617">Mole fraction of + hydrogen sulfide in liquid, <i>x</i>_{H₂S}</th> </tr> </thead> <tbody> <tr> <td data-bbox="230 665 316 692">263.15</td> <td data-bbox="522 665 587 692">1.17</td> <td data-bbox="820 665 906 692">0.0866</td> </tr> <tr> <td data-bbox="230 692 316 718">298.15</td> <td data-bbox="522 692 587 718">2.56</td> <td data-bbox="820 692 906 718">0.0396</td> </tr> <tr> <td data-bbox="230 718 316 745">323.15</td> <td data-bbox="522 718 587 745">3.91</td> <td data-bbox="820 718 906 745">0.0259</td> </tr> <tr> <td data-bbox="230 745 316 772">348.15</td> <td data-bbox="522 745 587 772">5.55</td> <td data-bbox="820 745 906 772">0.0183</td> </tr> <tr> <td data-bbox="230 772 316 799">373.15</td> <td data-bbox="522 772 587 799">7.48</td> <td data-bbox="820 772 906 799">0.0136</td> </tr> </tbody> </table> <p data-bbox="230 814 985 886">+ at a partial pressure of 101.3 kPa calculated by compiler assuming Henry's law applies at that pressure.</p>		T/K	Henry's constant, <i>H</i> /MPa	Mole fraction of + hydrogen sulfide in liquid, <i>x</i> _{H₂S}	263.15	1.17	0.0866	298.15	2.56	0.0396	323.15	3.91	0.0259	348.15	5.55	0.0183	373.15	7.48	0.0136
T/K	Henry's constant, <i>H</i> /MPa	Mole fraction of + hydrogen sulfide in liquid, <i>x</i> _{H₂S}																	
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348.15	5.55	0.0183																	
373.15	7.48	0.0136																	
AUXILIARY INFORMATION																			
METHOD/APPARATUS/PROCEDURE: Volumetric apparatus with a fused quartz precision bourdon pressure gauge. Solubility apparatus carefully thermostatted. Solvent degassed <i>in situ</i> . Apparatus described in ref. (1) and modifications given in source.	SOURCE AND PURITY OF MATERIALS: 1. and 2. Purity at least 99 mole per cent. ESTIMATED ERROR: $\delta T/K = \pm 0.05$; $\delta x_{H_2S} = \pm 1\%$. REFERENCES: 1. Cukor, P.M.; Prausnitz, J.M. <i>Ind. Eng. Chem. Fundam.</i> <u>1971</u> , 10, 638.																		

COMPONENTS:		ORIGINAL MEASUREMENTS:	
(1) Hydrogen sulfide; H ₂ S; [7783-06-4]		Short, I.; Sahgal, A.; Hayduk, W. <i>J. Chem. Eng. Data</i> <u>1983</u> , 28, 63-66.	
(2) Acetic acid; C ₂ H ₄ O ₂ ; [64-19-7]			
VARIABLES:		PREPARED BY:	
T/K: 298.15, 333.15 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
298.15	12.47	11.42	287
333.15	6.97	5.72	150.7
¹ Original data ² Calculated by compiler 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: $\Delta G^\circ/\text{J mol}^{-1} = -RT \ln x_1 = 794.52 T - 150015$ $\ln x_1 = 1828.2/T - 9.6826$			
	T/K	10 ⁻⁴ ΔG°/J mol ⁻¹	10 ⁴ x ₁
	298.15	8.687	287.0
	303.15	9.084	259.4
	313.15	9.879	214.0
	323.15	10.67	178.6
	333.15	11.47	150.7
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. Liquid Carbonic. Specified minimum purity 99.5 per cent. 2. Canlab. Specified minimum purity 99.7 per cent.	
Degassing was accomplished using a two stage vacuum process described by Clever et al. (1).		ESTIMATED ERROR: $\delta T/K = 0.1$ $\delta x_1/x_1 = 0.01$	
		REFERENCES: 1. Clever, H.L.; Battino, R.; Saylor, J.H.; Gross, P.M. <i>J. Phys. Chem.</i> <u>1957</u> , 61, 1078.	

COMPONENTS: 1. Hydrogen sulfide; H ₂ S; [7783-06-4] 2. Acetic acid anhydride; (Acetic anhydride); C ₄ H ₆ O ₃ ; [108-24-7]	ORIGINAL MEASUREMENTS: Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> , <u>1972</u> , 22, 623-650																														
VARIABLES: Temperature	PREPARED BY: C.L. Young																														
EXPERIMENTAL VALUES: <table border="1" data-bbox="79 470 1205 1232"> <thead> <tr> <th data-bbox="134 534 189 561">T/K</th> <th data-bbox="340 534 436 561">P*/mmHg</th> <th data-bbox="504 534 600 561">P*/kPa</th> <th data-bbox="655 534 793 561">Mole ratio</th> <th data-bbox="861 534 1136 617">Mole fraction⁺ of hydrogen sulfide in liquid, x_{H₂S}</th> </tr> </thead> <tbody> <tr> <td data-bbox="134 679 230 706">265.15</td> <td data-bbox="353 679 408 706">758</td> <td data-bbox="518 679 600 706">101.1</td> <td data-bbox="669 679 751 706">0.151</td> <td data-bbox="930 679 1012 706">0.131</td> </tr> <tr> <td data-bbox="134 727 230 754">267.15</td> <td data-bbox="353 727 408 754">758</td> <td data-bbox="518 727 600 754">101.1</td> <td data-bbox="669 727 751 754">0.144</td> <td data-bbox="930 727 1012 754">0.126</td> </tr> <tr> <td data-bbox="134 774 230 801">273.15</td> <td data-bbox="353 774 408 801">758</td> <td data-bbox="518 774 600 801">101.1</td> <td data-bbox="669 774 751 801">0.120</td> <td data-bbox="930 774 1012 801">0.107</td> </tr> <tr> <td data-bbox="134 822 230 849">283.15</td> <td data-bbox="353 822 408 849">758</td> <td data-bbox="518 822 600 849">101.1</td> <td data-bbox="669 822 751 849">0.085</td> <td data-bbox="930 822 1012 849">0.078</td> </tr> <tr> <td data-bbox="134 870 230 897">293.15</td> <td data-bbox="353 870 408 897">758</td> <td data-bbox="518 870 600 897">101.1</td> <td data-bbox="669 870 751 897">0.066</td> <td data-bbox="930 870 1012 897">0.062</td> </tr> </tbody> </table> <p data-bbox="134 969 477 996">+calculated by compiler</p> <p data-bbox="134 1017 367 1044">*total pressure</p>		T/K	P*/mmHg	P*/kPa	Mole ratio	Mole fraction ⁺ of hydrogen sulfide in liquid, x _{H₂S}	265.15	758	101.1	0.151	0.131	267.15	758	101.1	0.144	0.126	273.15	758	101.1	0.120	0.107	283.15	758	101.1	0.085	0.078	293.15	758	101.1	0.066	0.062
T/K	P*/mmHg	P*/kPa	Mole ratio	Mole fraction ⁺ of hydrogen sulfide in liquid, x _{H₂S}																											
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AUXILIARY INFORMATION																															
METHOD/APPARATUS/PROCEDURE: Hydrogen sulfide was bubbled into a weighed amount of component 2. in a bubbler tube as described in detail in the source. The amount of gas absorbed at equilibrium and at the observed temperature and pressure was determined by weighing. Pressure was measured with a mercury manometer. The amount of gas absorbed at successively lower pressures was measured. Eventually the pressure was reduced to the vapor pressure of component 2. The refractive index and infrared spectrum of the liquid showed it to be essentially pure component 2.	SOURCE AND PURITY OF MATERIALS: 1 and 2. Components were purified and attested by conventional methods. ESTIMATED ERROR: $\delta T/K = \pm 0.2$; $\delta x_{H_2S} = \pm 4\%$ REFERENCES:																														

COMPONENTS:		ORIGINAL MEASUREMENTS:		
1. Hydrogen sulfide; H ₂ S; [7783-06-4] 2. Hexanoic acid; C ₆ H ₁₂ O ₂ ; [142-62-1]		Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> , <u>1972</u> , <i>22</i> , 623-650		
VARIABLES:		PREPARED BY:		
Temperature		C.L. Young		
EXPERIMENTAL VALUES:				
T/K	P*/mmHg	P*/kPa	Mole ratio	Mole fraction ⁺ of hydrogen sulfide in liquid, $x_{\text{H}_2\text{S}}$
265.15	766	102.1	0.116	0.104
267.15	766	102.1	0.109	0.098
273.15	766	102.1	0.089	0.081
283.15	766	102.1	0.069	0.065
293.15	766	102.1	0.057	0.054
⁺ calculated by compiler *total pressure				
AUXILIARY INFORMATION				
METHOD/APPARATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:		
Hydrogen sulfide was bubbled into a weighed amount of component 2. in a bubbler tube as described in detail in the source. The amount of gas absorbed at equilibrium and at the observed temperature and pressure was determined by weighing. Pressure was measured with a mercury manometer.		1 and 2. Components were purified and attested by conventional methods.		
		ESTIMATED ERROR:		
		$\delta T/K = \pm 0.2$; $\delta x_{\text{H}_2\text{S}} = \pm 4\%$		
		REFERENCES:		

COMPONENTS:		ORIGINAL MEASUREMENTS:		
1. Hydrogen sulfide; H ₂ S; [7783-06-4] 2. 2-Hydroxybenzoic acid, methyl ester (<i>methyl salicylate</i>); C ₈ H ₈ O ₃ ; [119-36-8]		Gerrard, W. <i>J. Appl. Chem. Biotechnol.</i> <u>1972</u> , 22, 623-650.		
VARIABLES:		PREPARED BY:		
Temperature		P.G.T. Fogg		
EXPERIMENTAL VALUES:				
T/K	P(total)/mmHg	P(total)/bar	Mole ratio	Mole fraction of H ₂ S* $x_{\text{H}_2\text{S}}$
265.15	753	1.004	0.147	0.128
267.15	753	1.004	0.136	0.120
273.15	753	1.004	0.111	0.100
283.15	753	1.004	0.082	0.076
293.15	753	1.004	0.064	0.060
* calculated by the compiler for the stated total pressure.				
AUXILIARY INFORMATION				
METHOD/APPARATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:		
Hydrogen sulfide was bubbled into a weighed amount of component 2 in a bubbler tube as described in detail in the source. The amount of gas absorbed at equilibrium for the observed temperature and pressure was found by weighing. Pressure was measured with a mercury manometer.		It was stated that "All materials purified and attested by conventional methods."		
		ESTIMATED ERROR:		
		$\delta x_{\text{H}_2\text{S}} = \pm 4\%$ (author)		
		REFERENCES:		

COMPONENTS: (1) Hydrogen sulfide; H ₂ S [7783-06-4] (2) 2-Propanone (acetone); C ₃ H ₆ O; [67-64-1]	ORIGINAL MEASUREMENTS: Short, I.; Sahgal, A.; Hayduk, W. <i>J. Chem. Eng. Data</i> <u>1983</u> , 28, 63-66.																		
VARIABLES: T/K: 263.15, 298.15 P/kPa: 101.325	PREPARED BY: W. Hayduk																		
EXPERIMENTAL VALUES:																			
<table border="1"> <thead> <tr> <th>T/K</th> <th>Ostwald Coefficient¹ L/cm³ cm⁻³</th> <th>Bunsen Coefficient² α/cm³ (STP) cm⁻³ atm⁻¹</th> <th>Mole Fraction¹ x₁</th> </tr> </thead> <tbody> <tr> <td>263.15</td> <td>57.7</td> <td>59.89</td> <td>0.1607</td> </tr> <tr> <td>298.15</td> <td>24.6</td> <td>22.54</td> <td>0.0698</td> </tr> </tbody> </table>		T/K	Ostwald Coefficient ¹ L/cm ³ cm ⁻³	Bunsen Coefficient ² α/cm ³ (STP) cm ⁻³ atm ⁻¹	Mole Fraction ¹ x ₁	263.15	57.7	59.89	0.1607	298.15	24.6	22.54	0.0698						
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<p>¹Original data ²Calculated by compiler</p> <p>The mole fraction solubility of the original data was used to determine the following equations for ΔG° and ln x₁ and table of smoothed values:</p> $\Delta G^\circ/\text{J mol}^{-1} = -RT \ln x_1 = 732.91 T - 153390$ $\ln x_1 = 1869.3/T - 8.9319$ <table border="1"> <thead> <tr> <th>T/K</th> <th>10⁻⁴ΔG°/J mol⁻¹</th> <th>x₁</th> </tr> </thead> <tbody> <tr> <td>263.15</td> <td>3.948</td> <td>0.1607</td> </tr> <tr> <td>273.15</td> <td>4.681</td> <td>0.1239</td> </tr> <tr> <td>283.15</td> <td>5.414</td> <td>0.0973</td> </tr> <tr> <td>293.15</td> <td>6.146</td> <td>0.0777</td> </tr> <tr> <td>298.15</td> <td>6.513</td> <td>0.0698</td> </tr> </tbody> </table>		T/K	10 ⁻⁴ ΔG°/J mol ⁻¹	x ₁	263.15	3.948	0.1607	273.15	4.681	0.1239	283.15	5.414	0.0973	293.15	6.146	0.0777	298.15	6.513	0.0698
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METHOD/APPARATUS/PROCEDURE: <p>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.</p> <p>Degassing was accomplished using a two stage vacuum process described by Clever et al. (1).</p>	SOURCE AND PURITY OF MATERIALS: <ol style="list-style-type: none"> Liquid Carbonic. Specified minimum purity 99.5 per cent. Canlab. Specified minimum purity 99.5 per cent. ESTIMATED ERROR: δT/K = 0.1 δx ₁ /x ₁ = 0.01 REFERENCES: <ol style="list-style-type: none"> Clever, H.L.; Battino, R.; Saylor, J.H.; Gross, P.M. <i>J. Phys. Chem.</i> <u>1957</u>, 61, 1078. 																		

COMPONENTS: 1. Hydrogen sulfide; H_2S ; [7783-06-4] 2. Phenol; C_6H_6O ; [108-95-2]	ORIGINAL MEASUREMENTS: Lenoir, J-Y.; Renault, P.; Renon, H. <i>J. Chem. Eng. Data</i> , <u>1971</u> , <i>16</i> , 340-3						
VARIABLES:	PREPARED BY: C. L. Young						
EXPERIMENTAL VALUES: <table border="1" data-bbox="248 596 1112 741" 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_{H_2S}/atm</th> <th style="text-align: center;">Mole fraction at 1 atm* x_{H_2S}</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">323.2</td> <td style="text-align: center;">50.0</td> <td style="text-align: center;">0.0200</td> </tr> </tbody> </table> <p>* Calculated by compiler assuming a linear function of P_{H_2S} vs x_{H_2S}, i.e., $x_{H_2S}(1 atm) = 1/H_{H_2S}$</p>		T/K	Henry's constant H_{H_2S}/atm	Mole fraction at 1 atm* x_{H_2S}	323.2	50.0	0.0200
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323.2	50.0	0.0200					
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. Hydrogen sulfide; H ₂ S; [7783-06-4] 2. Hydrogen; H ₂ ; [1333-74-0] 3. Dibenzofuran; C ₁₂ H ₈ O; [132-64-9]	ORIGINAL MEASUREMENTS: Kragas, T.K.; Kobayashi, R. <i>Fluid Phase Equilibria</i> <u>1984</u> , 16, 215-236.																																	
VARIABLES: Pressure of hydrogen	PREPARED BY: P.G.T. Fogg																																	
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_{H₂}/MPa</th> <th style="text-align: center;">Henry's Constant for H₂S at infinite dilution / MPa</th> </tr> </thead> <tbody> <tr> <td rowspan="7" style="vertical-align: top; text-align: center;">373.2</td> <td>0.731</td> <td>6.68</td> </tr> <tr> <td>1.524</td> <td>3.34</td> </tr> <tr> <td>2.551</td> <td>2.03</td> </tr> <tr> <td>3.434</td> <td>1.51</td> </tr> <tr> <td>4.440</td> <td>1.17</td> </tr> <tr> <td>5.102</td> <td>0.986</td> </tr> <tr> <td>5.723</td> <td>0.907</td> </tr> <tr> <td rowspan="7" style="vertical-align: top; text-align: center;">398.2</td> <td>1.703</td> <td>3.62</td> </tr> <tr> <td>2.165</td> <td>2.91</td> </tr> <tr> <td>2.792</td> <td>2.32</td> </tr> <tr> <td>3.833</td> <td>1.74</td> </tr> <tr> <td>4.681</td> <td>1.47</td> </tr> <tr> <td>4.902</td> <td>1.38</td> </tr> <tr> <td>5.881</td> <td>1.17</td> </tr> </tbody> </table>		T/K	P _{H₂} /MPa	Henry's Constant for H ₂ S at infinite dilution / MPa	373.2	0.731	6.68	1.524	3.34	2.551	2.03	3.434	1.51	4.440	1.17	5.102	0.986	5.723	0.907	398.2	1.703	3.62	2.165	2.91	2.792	2.32	3.833	1.74	4.681	1.47	4.902	1.38	5.881	1.17
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METHOD/APPARATUS/PROCEDURE: A high pressure chromatographic method described in ref. (1) was used. Hydrogen at various pressures was the carrier gas.	SOURCE AND PURITY OF MATERIALS: <ol style="list-style-type: none"> 1. from Scientific Gas Products; 99.6% pure. 2. from Linde Division of Union Carbide Corporation. 3. from Aldrich Chem. Co.; purified to > 99.95% by zone refining. ESTIMATED ERROR: $\delta(\text{Henry's law constant}) = \pm 3.6\%$ REFERENCES: <ol style="list-style-type: none"> 1. Kragas, T.K.; Pollin, J.; Martin, R.J.; Kobayashi, R. <i>Fluid Phase Equilibria</i> <u>1984</u>, 16, 205. 																																	