

COMPONENTS:			ORIGINAL MEASUREMENTS:
1. Methanamine (Methylamine); CH_5N ; [74-89-5]			Gerrard, W.
2. 1,2-Ethanediol (Ethylene glycol); $\text{C}_2\text{H}_6\text{O}_2$; [107-21-1]			<i>Solubility of Gases and Liquids</i> , Plenum <u>1976</u> , Chapter 10.
VARIABLES:			PREPARED BY:
Pressure			C. L. Young
EXPERIMENTAL VALUES:			
			Mole fraction of methylamine in liquid, $x_{\text{CH}_3\text{NH}_2}$
T/K	P/mmHg	P/ 10^5 Pa	
283.15	100	0.133	0.375
	200	0.267	0.476
	300	0.400	0.537
	400	0.533	0.583
	500	0.667	0.623
	600	0.800	0.660
	700	0.933	0.691
	760	1.013	0.709
AUXILIARY INFORMATION			
METHOD/APPARATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:	
Amine 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].		1. British Drug Houses or Cambrian Gases sample.	
		2. Purified and attested 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> , 22 623-650.	
		2. Gerrard, W. <i>Solubility of Gases and Liquids</i> . Plenum Press, New York. <u>1976</u> . Chapter 1.	

<p>COMPONENTS:</p> <p>1. Methanamine (Methylamine); CH_5N; [74-89-5]</p> <p>2. Glycols and glycerol</p>	<p>ORIGINAL MEASUREMENTS:</p> <p>Copley, M.J.; Ginsberg, E.; Zellhoefer, G.F.; Marvel, C.S. <i>J. Amer. Chem. Soc.</i> <u>1941</u>, 63, 254-256.</p>																
<p>VARIABLES:</p>	<p>PREPARED BY:</p> <p>P. G. T. Fogg</p>																
<p>EXPERIMENTAL VALUES:</p> <table border="1" data-bbox="168 520 1274 868"> <thead> <tr> <th>Solvent</th> <th>T/K</th> <th>$p_{\text{CH}_5\text{N}}/\text{mmHg}^*$</th> <th>Mole fraction $x_{\text{CH}_5\text{N}}$</th> </tr> </thead> <tbody> <tr> <td>1,2-Ethanediol, (Ethylene glycol); $\text{C}_2\text{H}_6\text{O}_2$; [107-21-1]</td> <td>305.4</td> <td>1223</td> <td>0.662</td> </tr> <tr> <td>2,2'-Oxybis-ethanol, (Diethylene glycol); $\text{C}_4\text{H}_{10}\text{O}_3$; [111-46-6]</td> <td>305.4</td> <td>1223</td> <td>0.653</td> </tr> <tr> <td>1,2,3-Propanetriol, (Glycerol); $\text{C}_3\text{H}_8\text{O}_3$; [56-81-5]</td> <td>305.4</td> <td>1223</td> <td>0.653</td> </tr> </tbody> </table>		Solvent	T/K	$p_{\text{CH}_5\text{N}}/\text{mmHg}^*$	Mole fraction $x_{\text{CH}_5\text{N}}$	1,2-Ethanediol, (Ethylene glycol); $\text{C}_2\text{H}_6\text{O}_2$; [107-21-1]	305.4	1223	0.662	2,2'-Oxybis-ethanol, (Diethylene glycol); $\text{C}_4\text{H}_{10}\text{O}_3$; [111-46-6]	305.4	1223	0.653	1,2,3-Propanetriol, (Glycerol); $\text{C}_3\text{H}_8\text{O}_3$; [56-81-5]	305.4	1223	0.653
Solvent	T/K	$p_{\text{CH}_5\text{N}}/\text{mmHg}^*$	Mole fraction $x_{\text{CH}_5\text{N}}$														
1,2-Ethanediol, (Ethylene glycol); $\text{C}_2\text{H}_6\text{O}_2$; [107-21-1]	305.4	1223	0.662														
2,2'-Oxybis-ethanol, (Diethylene glycol); $\text{C}_4\text{H}_{10}\text{O}_3$; [111-46-6]	305.4	1223	0.653														
1,2,3-Propanetriol, (Glycerol); $\text{C}_3\text{H}_8\text{O}_3$; [56-81-5]	305.4	1223	0.653														
<p>760 mmHg = 1 atm = 1.013×10^5 Pa.</p> <p>* The pressure of methylamine was said by the authors to correspond to its vapor pressure at 4.5°C. The magnitude of this pressure has been estimated by the compiler from vapor pressure data given in ref. (1).</p>																	
<p>AUXILIARY INFORMATION</p>																	
<p>METHOD/APPARATUS/PROCEDURE:</p> <p>The absorption apparatus was developed for studies of refrigeration systems (2) and consisted of a copper drum 4 x 12 cm, fitted with a needle valve and two-way outlet with one outlet connected to a manometer. The drum was evacuated to a pressure of 1 mmHg and about 40 cm³ of solvent drawn into this drum which was then reweighed and immersed in a water bath at 32.2°C. The drum was agitated and gaseous methanamine allowed to flow slowly into it. The final pressure in the drum corresponded to the vapor pressure of methanamine at 4.5°C. The magnitude of this pressure was not stated by the authors. The drum and contents were weighed again to find the weight of gas which had been absorbed.</p>	<p>SOURCE AND PURITY OF MATERIALS:</p> <p>The authors stated that the materials used were all purified carefully by chemical means and fractional distillation where feasible.</p> <p>ESTIMATED ERROR:</p> <p>REFERENCES:</p> <p>1. Dreisbach, R.R. <i>Physical Properties of Chemical Compounds</i> Vol. 2, A.C.S. Washington. 1959.</p> <p>2. Zellhoefer, G.F. <i>Ind. Eng. Chem.</i> 1937, 29, 548.</p>																

COMPONENTS:			ORIGINAL MEASUREMENTS:
1. Methanamine (Methylamine); CH_5N ; [74-89-5]			Gerrard, W.
2. 1,2,3-Propanetriol (Glycerol); $\text{C}_3\text{H}_8\text{O}_3$; [56-81-5]			<i>Solubility of Gases and Liquids</i> , <i>Plenum 1976</i> , Chapter 10.
VARIABLES:			PREPARED BY:
Pressure			C. L. Young
EXPERIMENTAL VALUES:			
T/K	P/mmHg	P/ 10^5 Pa	Mole fraction of methylamine in liquid, $x_{\text{CH}_3\text{NH}_2}$
283.15	100	0.133	0.448
	200	0.267	0.546
	300	0.400	0.603
	400	0.533	0.645
	500	0.667	0.680
	600	0.800	0.708
	700	0.933	0.727
	760	1.013	0.736
AUXILIARY INFORMATION			
METHOD/APPARATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:	
Amine 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].		1. British Drug Houses or Cambrian Gases sample.	
		2. Purified and attested 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> , 22 623-650.	
		2. Gerrard, W. <i>Solubility of Gases and Liquids</i> . <i>Plenum Press, New York. 1976</i> . Chapter 1.	

COMPONENTS:			ORIGINAL MEASUREMENTS:
1. Methanamine (Methylamine); CH ₃ N; [74-89-5]			Gerrard, W.
2. 1,4-Dioxane; C ₄ H ₈ O ₂ ; [123-91-1]			<i>Solubility of Gases and Liquids</i> , Plenum <u>1976</u> , Chapter 10.
VARIABLES:			PREPARED BY:
Pressure			C. L. Young
EXPERIMENTAL VALUES:			
			Mole fraction of methylamine in liquid, $x_{\text{CH}_3\text{NH}_2}$
T/K	P/mmHg	P/10 ⁵ Pa	
283.15	700	0.933	0.429
	760	1.013	0.481
AUXILIARY INFORMATION			
METHOD/APPARATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:	
Amine as 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].		1. British Drug Houses or Cambrian Gases sample. 2. Purified and attested 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> , 22 623-650. 2. Gerrard, W. <i>Solubility of Gases and Liquids</i> . Plenum Press, New York. <u>1976</u> . Chapter 1.	

COMPONENTS:			ORIGINAL MEASUREMENTS:
1. Methanamine (methylamine); CH_5N ; [74-89-5]			Gerrard, W.
2. 1-Butanol; $\text{C}_4\text{H}_{10}\text{O}$; [71-36-3]			<i>Solubility of Gases and Liquids</i> , <i>Plenum 1976</i> , Chapter 10.
VARIABLES:			PREPARED BY:
Temperature, pressure			C. L. Young
EXPERIMENTAL VALUES:			
T/K	P/mmHg	P/ 10^5 Pa	Mole fraction of methylamine in liquid, $x_{\text{CH}_3\text{NH}_2}$
283.15	600	0.800	0.580
	700	0.933	0.630
	760	1.013	0.661
293.15	760	1.013	0.554
	AUXILIARY INFORMATION		
METHOD/APPARATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:	
Amine 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 control led to within 0.2K. The apparatus and procedure are described by Gerrard [1,2].		1. British Drug Houses or Cambrian Gases sample.	
		2. Purified and attested 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> , 22 623-650.	
		2. Gerrard, W. <i>Solubility of Gases and Liquids</i> . <i>Plenum Press, New York.</i> <u>1976</u> . Chapter 1.	

COMPONENTS: 1. Methanamine (Methylamine); CH_3N ; [74-89-5] 2. Benzenemethanol (Benzyl alcohol); $\text{C}_7\text{H}_8\text{O}$; [100-51-6]			ORIGINAL MEASUREMENTS: Gerrard, W. <i>Solubility of Gases and Liquids</i> , <i>Plenum 1976</i> , Chapter 10.
VARIABLES: Temperature, pressure			PREPARED BY: C. L. Young
EXPERIMENTAL VALUES:			
			Mole fraction of methylamine in liquid, $x_{\text{CH}_3\text{NH}_2}$
T/K	P/mmHg	P/ 10^5 Pa	
273.15	100	0.133	0.420
	200	0.267	0.506
	300	0.400	0.571
	400	0.533	0.630
	500	0.667	0.680
	600	0.800	0.731
	700	0.933	0.785
	760	1.013	0.816
278.15	760	1.013	0.747
283.15	760	1.013	0.690
293.15	100	0.133	0.312
	200	0.267	0.410
	300	0.400	0.460
	400	0.533	0.500
	500	0.667	0.533
	600	0.800	0.560
	700	0.933	0.588
	760	1.013	0.605
AUXILIARY INFORMATION			
METHOD/APPARATUS/PROCEDURE: Amine 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: 1. British Drug Houses or Cambrian Gases sample. 2. Purified and attested 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> , 22 623-650. 2. Gerrard, W. <i>Solubility of Gases and Liquids</i> . Plenum Press, New York. <u>1976</u> . Chapter 1.	

COMPONENTS:			ORIGINAL MEASUREMENTS:
1. Methanamine (methylaniline): CH_5N ; [74-89-5]			Gerrard, W.
2. 1-Phenylethanone (methyl phenyl ketone); $\text{C}_8\text{H}_8\text{O}$; [98-86-2]			<i>Solubility of Gases and Liquids</i> , <i>Plenum 1976</i> , Chapter 10.
VARIABLES:			PREPARED BY:
Pressure			C. L. Young
EXPERIMENTAL VALUES:			
T/K	P/mmHg	P/ 10^5 Pa	Mole fraction of methylaniline in liquid, $x_{\text{CH}_3\text{NH}_2}$
293.15	100	0.133	0.045
	200	0.267	0.090
	300	0.400	0.132
	400	0.533	0.180
	500	0.667	0.244
	600	0.800	0.270
	700	0.933	0.315
	760	1.013	0.342
AUXILIARY INFORMATION			
METHOD/APPARATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:	
<p>Amine 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].</p>		1. British Drug Houses or Cambrian Gases sample. 2. Purified and attested 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> , 22 623-650. 2. Gerrard, W. <i>Solubility of Gases and Liquids</i> . <i>Plenum Press, New York.</i> <u>1976</u> . Chapter 1.	

COMPONENTS:			ORIGINAL MEASUREMENTS:
1. Methanamine (Methylamine); CH_5N ; [74-89-5]			Gerrard, W.
2. Ethoxybenzene (ethyl phenyl ether); $\text{C}_8\text{H}_{10}\text{O}$; [103-73-1]			<i>Solubility of Gases and Liquids</i> , Plenum <u>1976</u> , Chapter 10.
VARIABLES:			PREPARED BY:
Pressure			C. L. Young
EXPERIMENTAL VALUES:			
T/K	P/mmHg	P/ 10^5 Pa	Mole fraction of methylamine in liquid, $x_{\text{CH}_3\text{NH}_2}$
283.15	500	0.667	0.285
	600	0.800	0.342
	700	0.933	0.402
	760	1.013	0.436
AUXILIARY INFORMATION			
METHOD/APPARATUS/PROCEDURE:		SOURCE AND PURITY OF MATERIALS:	
Amine 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].		1. British Drug Houses or Cambrian Gases sample.	
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		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.	

EXPERIMENTAL VALUES:			Mole fraction of methanamine in liquid, $x_{\text{CH}_3\text{NH}_2}$
T/K	P/mmHg	P/10 ⁵ Pa	
273.15	100	0.133	0.300
	200	0.267	0.425
	300	0.400	0.511
	400	0.533	0.582
	500	0.667	0.644
	600	0.800	0.705
	700	0.933	0.763
	760	1.013	0.796
278.15	600	0.800	0.636
	700	0.933	0.692
	760	1.013	0.728
283.15	100	0.133	0.255
	200	0.267	0.355
	300	0.400	0.424
	400	0.533	0.485
	500	0.667	0.537
	600	0.800	0.586
	700	0.933	0.635
	760	1.013	0.663
293.15	100	0.133	0.200
	200	0.267	0.292
	300	0.400	0.357
	400	0.533	0.412
	500	0.667	0.458
	600	0.800	0.498
	700	0.933	0.534
	760	1.013	0.554

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Amine 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:

1. British Drug Houses or Cambrian Gases sample.
2. Purified and attested by conventional procedures.

ESTIMATED ERROR:

$\delta T/K = \pm 0.1$; $\delta x/x = \pm 3\%$
(estimated by compiler)

REFERENCES:

1. Gerrard, W. *J. Appl. Chem. Biotechnol.* 1972, 22 623-650.
2. Gerrard, W. *Solubility of Gases and Liquids*. Plenum Press, New York. 1976. Chapter 1.

COMPONENTS:
1. Methanamine (methylanine); CH_5N ;
[74-89-5]
2. 1-Octanol; $\text{C}_8\text{H}_{18}\text{O}$; [111-87-5]

ORIGINAL MEASUREMENTS:
Gerrard, W.
Solubility of Gases and Liquids,
Plenum 1976, Chapter 10.

VARIABLES:
Temperature, pressure

PREPARED BY:
C. L. Young