

<b>COMPONENTS:</b> (1) Benzenesulfonamide, 3-amino- (metanilamide); $C_6H_8N_2O_2S$ ; [98-18-0] (2) Water; $H_2O$ [7732-18-5]	<b>ORIGINAL MEASUREMENTS:</b> Kienle, R. H.; Sayward, J. M., <i>J. Am. Chem. Soc.</i> <u>1942</u> , 64, 2464-8																																																
<b>VARIABLES:</b> Temperature	<b>PREPARED BY:</b> R. Piekos																																																
<b>EXPERIMENTAL VALUES:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><math>t/^\circ C</math></th> <th style="text-align: center;">g/100 g soln</th> <th style="text-align: center;"><math>mol\ kg^{-1}</math> (compiler)</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">23.0</td><td style="text-align: center;">1.14</td><td style="text-align: center;">0.0662</td></tr> <tr><td style="text-align: center;">24.0</td><td style="text-align: center;">1.21</td><td style="text-align: center;">0.0703</td></tr> <tr><td style="text-align: center;">26.0</td><td style="text-align: center;">1.34</td><td style="text-align: center;">0.0778</td></tr> <tr><td style="text-align: center;">28.0</td><td style="text-align: center;">1.48</td><td style="text-align: center;">0.0859</td></tr> <tr><td style="text-align: center;">28.0</td><td style="text-align: center;">1.49</td><td style="text-align: center;">0.0865</td></tr> <tr><td style="text-align: center;">33.0</td><td style="text-align: center;">1.89</td><td style="text-align: center;">0.110</td></tr> <tr><td style="text-align: center;">35.5</td><td style="text-align: center;">2.19</td><td style="text-align: center;">0.127</td></tr> <tr><td style="text-align: center;">37.0</td><td style="text-align: center;">2.37</td><td style="text-align: center;">0.138</td></tr> <tr><td style="text-align: center;">37.0</td><td style="text-align: center;">2.36<sup>a</sup></td><td style="text-align: center;">0.137</td></tr> <tr><td style="text-align: center;">37.0</td><td style="text-align: center;">2.35<sup>a</sup></td><td style="text-align: center;">0.136</td></tr> <tr><td style="text-align: center;">37.0</td><td style="text-align: center;">2.34<sup>b</sup></td><td style="text-align: center;">0.136</td></tr> <tr><td style="text-align: center;">39.0</td><td style="text-align: center;">2.58</td><td style="text-align: center;">0.150</td></tr> <tr><td style="text-align: center;">42.0</td><td style="text-align: center;">3.01</td><td style="text-align: center;">0.175</td></tr> <tr><td style="text-align: center;">46.0</td><td style="text-align: center;">3.70</td><td style="text-align: center;">0.215</td></tr> <tr><td style="text-align: center;">50.0</td><td style="text-align: center;">4.58<sup>b</sup></td><td style="text-align: center;">0.266</td></tr> </tbody> </table> <p><sup>a</sup>Equilibrium approached from below.  <sup>b</sup>Duration less than 12 hours.</p>		$t/^\circ C$	g/100 g soln	$mol\ kg^{-1}$ (compiler)	23.0	1.14	0.0662	24.0	1.21	0.0703	26.0	1.34	0.0778	28.0	1.48	0.0859	28.0	1.49	0.0865	33.0	1.89	0.110	35.5	2.19	0.127	37.0	2.37	0.138	37.0	2.36 <sup>a</sup>	0.137	37.0	2.35 <sup>a</sup>	0.136	37.0	2.34 <sup>b</sup>	0.136	39.0	2.58	0.150	42.0	3.01	0.175	46.0	3.70	0.215	50.0	4.58 <sup>b</sup>	0.266
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<b>METHOD/APPARATUS/PROCEDURE:</b> An excess of solid was rotated with water usually overnight. Equilibrium was approached from above. Sampling was accomplished by forcing the soln through a filter into a pycnometer. From the pycnometer the contents were flushed into a volumetric flask. Duplicate aliquots were acidified, iced below $15^\circ C$ and titrated with $0.04\ mol\ dm^{-3}\ NaNO_2$ to first blue on starch - iodide paper.	<b>SOURCE AND PURITY OF MATERIALS:</b> Metanilamide, m.p. $142.1^\circ C$ , was prepd. by the authors. Titrn with nitrite indicated the compd to be $100.0 \pm 0.3\%$ pure. Elemental analysis and mixed m.p. detns confirmed this value. Purity of the water was not specified.  <b>ESTIMATED ERROR:</b> Temp: $\pm 0.02^\circ C$ (authors) Soly: $\pm 0.01\ g/100g\ soln$ or $\pm 0.012 \times 10^{-3}$ in mole fraction. The values of 2 varied from $\pm 0.018$ to $\pm 0.031/100\ g\ soln$  <b>REFERENCES:</b>																																																

<b>COMPONENTS:</b> (1) Benzenesulfonamide, 3-amino- (metanilamide); $C_6H_8N_2O_2S$ ; [98-18-0] (2) Phosphoric acid, disodium salt; $Na_2HPO_4$ ; [7558-94-4] (3) Phosphoric acid, monopotassium salt; $KH_2PO_4$ ; [7778-77-0] (4) Water; $H_2O$ ; [7732-18-5]	<b>ORIGINAL MEASUREMENTS:</b> Kienle, R. H.; Sayward, J. M. <i>J. Am. Chem. Soc.</i> <u>1942</u> , <i>64</i> , 2464-8.
<b>VARIABLES:</b> One temperature: $37.0^\circ C$ ; one pH: 6.9	<b>PREPARED BY:</b> R. Piekos
<b>EXPERIMENTAL VALUES:</b> <p>Solubility of metanilamide in a buffer solution prepared by mixing together <math>55.2 \text{ cm}^3</math> of <math>1/15 \text{ M Na}_2\text{HPO}_4</math> with <math>44.8 \text{ cm}^3</math> of <math>1/15 \text{ M KH}_2\text{PO}_4</math> (pH 6.9, ionic strength calculated from dissociation constants <math>0.03^a</math>) at <math>37.0^\circ C</math> is <math>2.30 \text{ g}/100 \text{ cm}^3</math> solution (<math>0.134 \text{ mol dm}^{-3}</math>, compiler).</p> <p><sup>a</sup>Not specified for which reactions were the dissociation constants calculated - compiler.</p>	
<b>AUXILIARY INFORMATION</b>	
<b>METHOD/APPARATUS/PROCEDURE:</b> <p>An excess of metanilamide was rotated with the buffer soln usually overnight. Equilibrium was approached from above. Sampling was accomplished by forcing the soln through a filter into a pycnometer. From the pycnometer the contents were flushed into a volumetric flask. Duplicate aliquots were acidified, iced below <math>15^\circ C</math> and titrated with a <math>0.04 \text{ mol dm}^{-3} \text{ NaNO}_2</math> soln to first blue on a starch - iodide paper.</p>	<b>SOURCE AND PURITY OF MATERIALS:</b> <p>Metanilamide, mp <math>142.1^\circ C</math>, was prepd by the authors. Titrn with nitrite indicated that the compd was <math>100.0 \pm 3\%</math> pure. Elemental analysis and mixed mp detns confirmed this value. Source and purity of the remaining materials was not specified.</p> <b>ESTIMATED ERROR:</b> <p>Soly: <math>\pm 0.01 \text{ g}/100 \text{ g soln}</math> or <math>\pm 0.012 \times 10^{-3}</math> in mole fraction (authors). Temp: <math>\pm 0.02^\circ C</math> (authors).</p>
<b>REFERENCES:</b>	

<b>COMPONENTS:</b> (1) Benzenesulfonamide, 3-amino- (metanilamide); $C_6H_8N_2O_2S$ ; [98-18-0] (2) Hydrochloric acid; HCl; [7647-40-7] (3) Potassium chloride; KCl; [7447-40-7] (4) Water; $H_2O$ ; [7732-18-5]	<b>ORIGINAL MEASUREMENTS:</b> Kienle, R. H.; Sayward, J. M., <i>J. Am. Chem. Soc.</i> <u>1942</u> , <i>64</i> , 2464-8.
<b>VARIABLES:</b> One temperature, one pH	<b>PREPARED BY:</b> R. Piekos
<b>EXPERIMENTAL VALUES:</b>  Solubility of metanilamide in a solution prepared by mixing together 25 cm <sup>3</sup> of 0.2 M KCl with 42.5 cm <sup>3</sup> 0.2 M HCl and diluting up to 100 cm <sup>3</sup> with water (pH 1.2, ionic strength calculated from dissociation constants 0.12 <sup>a</sup> ) at 37.0°C is 4.48 g/100 cm <sup>3</sup> solution (0.260 mol dm <sup>-3</sup> - compiler).  <sup>a</sup> Not specified for which reactions were the dissociation constants calculated - compiler.	
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<b>METHOD/APPARATUS/PROCEDURE:</b>  An excess of solid was rotated with water usually overnight. Equilibrium was approached from above. Sampling was accomplished by forcing the soln through a filter into a pycnometer. From the pycnometer the contents were flushed into a volumetric flask. Duplicate aliquots were acidified, iced below 15°C and titrated with 0.04 mol dm <sup>-3</sup> NaNO <sub>2</sub> to first blue on starch - iodide paper.	<b>SOURCE AND PURITY OF MATERIALS:</b>  Metanilamide, m.p. 142.1°C, was prepd by the authors. Titrn with nitrite indicated that the compd was 100.0±0.3% pure. Elemental analysis and mixed m.p. detns confirmed this value. Source and purity of the remaining materials was not specified.  <b>ESTIMATED ERROR:</b> Temp: ±0.02°C (authors) Soly: accuracy ±0.01 g/100 g soln (authors)  <b>REFERENCES:</b>

<b>COMPONENTS:</b> (1) Benzenesulfonamide, 3-amino- (metanil - amide); $C_6H_8N_2O_2S$ ; [98-18-0] (2) Boric acid; $H_3BO_3$ ; [10043-35-3] (3) Potassium chloride; KCl; [7447-40-7] (4) Sodium hydroxide; NaOH; [1310-73-2] (5) Water; $H_2O$ ; [7732-18-5]	<b>ORIGINAL MEASUREMENTS:</b> Kienle, R. H.; Sayward, J. M. <i>J. Am. Chem. Soc.</i> <u>1942</u> , <i>64</i> , 2464-8.														
<b>VARIABLES:</b> pH; ionic strength	<b>PREPARED BY:</b> R. Piekos														
<b>EXPERIMENTAL VALUES:</b> <table border="1" data-bbox="229 520 1229 701" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">pH of borate buffer</th> <th rowspan="2">Ionic strength<sup>a</sup></th> <th colspan="2">Solubility at 37.0°C</th> </tr> <tr> <th>g/100 cm<sup>3</sup> solution</th> <th>10<sup>2</sup> mol dm<sup>-3</sup><sup>b</sup></th> </tr> </thead> <tbody> <tr> <td>9.4<sup>c</sup></td> <td>0.08</td> <td>2.61</td> <td>15.2</td> </tr> <tr> <td>9.7<sup>d</sup></td> <td>0.09</td> <td>2.60</td> <td>15.1</td> </tr> </tbody> </table> <p><sup>a</sup>Calculated from dissociation constants (reactions not specified).</p> <p><sup>b</sup>Calculated by compiler.</p> <p><sup>c</sup>Obtained by mixing together 50 cm<sup>3</sup> of a 0.1 M solution in both <math>H_3BO_3</math> and KCl with 32.1 cm<sup>3</sup> of 0.1 M NaOH and diluting with water up to 100 cm<sup>3</sup>.</p> <p><sup>d</sup>Obtained by mixing together 50 cm<sup>3</sup> of a 0.1 M solution in both <math>H_3BO_3</math> and KCl with 38.75 cm<sup>3</sup> of 0.1 M NaOH and diluting with water up to 100 cm<sup>3</sup>.</p>		pH of borate buffer	Ionic strength <sup>a</sup>	Solubility at 37.0°C		g/100 cm <sup>3</sup> solution	10 <sup>2</sup> mol dm <sup>-3</sup> <sup>b</sup>	9.4 <sup>c</sup>	0.08	2.61	15.2	9.7 <sup>d</sup>	0.09	2.60	15.1
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<b>VARIABLES:</b> One temperature: $37.0^\circ C$ ; one pH: 4.2	<b>PREPARED BY:</b> R. Piekos
<b>EXPERIMENTAL VALUES:</b> <p>Solubility of metanilamide in a solution prepared by mixing together <math>41.4 \text{ cm}^3</math> of <math>0.2 M Na_2HPO_4</math> with <math>58.6 \text{ cm}^3</math> of <math>0.1 M</math> citric acid (pH 4.2, ionic strength calculated from dissociation constants <math>0.84^a</math>) at <math>37.0^\circ C</math> is <math>2.26 \text{ g}/100 \text{ cm}^3</math> solution (<math>0.131 \text{ mol dm}^{-3}</math>, compiler).</p> <p><sup>a</sup>Not specified for which reactions were the dissociation constants calculated - compiler.</p>	
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<b>METHOD/APPARATUS/PROCEDURE:</b> <p>An excess of metanilamide was rotated with the buffer soln usually overnight. Equilibrium was approached from above. Sampling was accomplished by forcing the soln through a filter into a pycnometer. From the pycnometer the contents were flushed into a volumetric flask. Duplicate aliquots were acidified, iced below <math>15^\circ C</math> and titrated with a <math>0.04 \text{ mol dm}^{-3} NaNO_2</math> soln to first blue on a starch - iodide paper.</p>	<b>SOURCE AND PURITY OF MATERIALS:</b> <p>Metanilamide, mp <math>142.1^\circ C</math> was prep'd by the authors. Titrn with nitrite indicated that the comp'd was <math>100.0 \pm 0.3\%</math> pure. Elemental analysis and mixed mp detns confirmed this value. Source and purity of the remaining materials was not specified.</p> <p><b>ESTIMATED ERROR:</b> Soly: <math>\pm 0.01 \text{ g}/100 \text{ g soln}</math> or <math>\pm 0.012 \times 10^{-3}</math> in mole fraction (authors). Temp: <math>\pm 0.02^\circ C</math> (authors).</p> <p><b>REFERENCES:</b></p>

<b>COMPONENTS:</b> (1) Benzenesulfonamide, 3-amino- (metanilamide); $C_6H_8N_2O_2S$ ; [98-18-0] (2) 1,2-Benzenedicarboxylic acid, monopotassium salt; $C_8H_5KO_4$ ; [877-24-7] (3) Hydrochloric acid; HCl; [7647-01-0] (4) Water; $H_2O$ ; [7732-18-5]	<b>ORIGINAL MEASUREMENTS:</b> Kienle, R. H.; Sayward, J. M. <i>J. Am. Chem. Soc.</i> 1942, 64, 2464-8.
<b>VARIABLES:</b> One temperature: $37.0^\circ C$ ; one pH: 2.2	<b>PREPARED BY:</b> R. Piekos
<b>EXPERIMENTAL VALUES:</b>  Solubility of metanilamide in a buffer solution prepared by mixing together $50\text{ cm}^3$ of 0.1 M monopotassium 1,2-benzenedicarboxylate with $49.5\text{ cm}^3$ of 0.1 M HCl and diluting up to $100\text{ cm}^3$ with water (pH 2.2, ionic strength calculated from dissociation constants $0.06^a$ ) at $37.0^\circ C$ is $3.07\text{ g}/100\text{ cm}^3$ solution ( $0.178\text{ mol dm}^{-3}$ , compiler).  <sup>a</sup> Not specified for which reactions were the dissociation constants calculated - compiler.	
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<b>REFERENCES:</b>	