

COMPONENTS:	ORIGINAL MEASUREMENTS:																								
(1) Benzenesulfonamide, 4-amino-N-[(butyl-amino)carbonyl]- (carbutamide); $C_{11}H_{17}N_3O_3S$; [339-43-5] (2) Hydrochloric acid; HCl; [7647-01-0] (3) Potassium chloride; KCl; [7447-40-7] (4) Water; H_2O ; [7732-18-5]	Lippold, B. H.; Sgoll, G. B. <i>Pharm. Ind.</i> 1978, 40(8), 841-8.																								
VARIABLES:	PREPARED BY:																								
pH	R. Piekos																								
EXPERIMENTAL VALUES:																									
Saturation solubility in HCl - KCl buffer solutions (ionic strength 0.1) at $39 \pm 1^\circ C$																									
pH	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 40%; text-align: center;">10^3 mol/L</th> <th style="width: 45%; text-align: center;">g/L</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">-0.8</td> <td style="text-align: center;">114.94</td> <td style="text-align: center;">31.186^a</td> </tr> <tr> <td style="text-align: center;">0.1</td> <td style="text-align: center;">113.0</td> <td style="text-align: center;">30.66^a</td> </tr> <tr> <td style="text-align: center;">0.9</td> <td style="text-align: center;">20.2</td> <td style="text-align: center;">5.48^a</td> </tr> <tr> <td style="text-align: center;">1.3</td> <td style="text-align: center;">8.79</td> <td style="text-align: center;">2.38</td> </tr> <tr> <td style="text-align: center;">1.5</td> <td style="text-align: center;">5.37</td> <td style="text-align: center;">1.46^a</td> </tr> <tr> <td style="text-align: center;">2.2</td> <td style="text-align: center;">2.9</td> <td style="text-align: center;">0.79^a</td> </tr> <tr> <td style="text-align: center;">2.6</td> <td style="text-align: center;">2.7</td> <td style="text-align: center;">0.73</td> </tr> </tbody> </table>		10^3 mol/L	g/L	-0.8	114.94	31.186 ^a	0.1	113.0	30.66 ^a	0.9	20.2	5.48 ^a	1.3	8.79	2.38	1.5	5.37	1.46 ^a	2.2	2.9	0.79 ^a	2.6	2.7	0.73
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METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:																								
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VARIABLES: pH	PREPARED BY: R. Piekos												
EXPERIMENTAL VALUES: <p style="text-align: center;">Saturation solubility at $39 \pm 1^\circ C$ in the Walpole acetate buffer solutions of the ionic strength 0.1 maintained with KCl</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">pH</th> <th style="text-align: center;">g/L</th> <th style="text-align: center;">10^3 mol/L</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">3.80</td> <td style="text-align: center;">0.604^a</td> <td style="text-align: center;">2.227^b</td> </tr> <tr> <td style="text-align: center;">3.95</td> <td style="text-align: center;">0.604</td> <td style="text-align: center;">2.226^a</td> </tr> <tr> <td style="text-align: center;">5.0</td> <td style="text-align: center;">0.69</td> <td style="text-align: center;">2.52</td> </tr> </tbody> </table> <p>^a Calculated by compiler</p> <p>^b Mean of 5 measurements.</p>		pH	g/L	10^3 mol/L	3.80	0.604^a	2.227^b	3.95	0.604	2.226^a	5.0	0.69	2.52
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(1) Benzenesulfonamide, 4-amino-N-(butylamino)carbonyl- (carbutamide); $C_{11}H_{17}N_3O_3S$; [339-43-5] (2) Phosphoric acid, disodium salt; Na_2HPO_4 ; [7558-94-4] (3) Phosphoric acid, monopotassium salt; KH_2PO_4 ; [7778-77-0] (4) Potassium chloride; KCl ; [7447-40-7] (5) Water; H_2O ; [7732-18-5]	Lippold, B. H.; Sgoll, G. B. <i>Pharm. Ind.</i> 1978, 40(8). 841-8. PREPARED BY: R. Piekos																					
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VARIABLES: One temperature: 37°C; one pH: 4	PREPARED BY: R. Piekos
EXPERIMENTAL VALUES: Intrinsic solubility ^a of carbutamide in a solution 0.025M in Na_2HPO_4 and 0.05M in citric acid, of pH 4, at 37°C is $(19.5 \pm 0.22) \times 10^{-4}$ mol liter ⁻¹ . ^a Under "intrinsic solubility" a minimum on the solubility - pH curve is meant which corresponds to the limiting concentration of the undissociated form of carbutamide.	
AUXILIARY INFORMATION	
METHOD/APPARATUS/PROCEDURE: The soln was equilibrated for 48 h in a thermostat under occasional stirring. Samples were withdrawn through a 1- μ membrane filter, dild with 0.155M NaOH soln to ensure total dissoen of carbutamide, and the sulfonamide was assayed by UV spectrophotometry.	SOURCE AND PURITY OF MATERIALS: Nothing specified.
ESTIMATED ERROR: Soly: std error of 8 measurements was $\pm 0.22 \times 10^{-4}$ mol liter ⁻¹ (authors). pH: accuracy ± 0.5 pH unit (authors). Temp: $\pm 0.1^\circ C$ (authors).	
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EXPERIMENTAL VALUES: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">pH</th> <th colspan="5">Solubility (mg/ml) at 37°C in McIlvaine buffer solutions determined after^a</th> </tr> <tr> <th>24 h</th> <th>48 h</th> <th>72 h</th> <th>Average</th> <th>10^3 mol dm^{-3}^b</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>0.58</td> <td>0.57</td> <td>0.60</td> <td>0.58</td> <td>2.14</td> </tr> <tr> <td>4</td> <td>0.55</td> <td>0.51</td> <td>0.50</td> <td>0.52</td> <td>1.92</td> </tr> <tr> <td>5</td> <td>0.58</td> <td>0.54</td> <td>0.52</td> <td>0.55</td> <td>2.03</td> </tr> <tr> <td>6</td> <td>1.28</td> <td>1.14</td> <td>1.06</td> <td>1.16</td> <td>4.27</td> </tr> <tr> <td>7.2</td> <td>7.03</td> <td>7.11</td> <td>6.96</td> <td>7.03</td> <td>25.9</td> </tr> </tbody> </table> <p>^a Numerical values to the graphical data given by the first author (F.S.).</p> <p>^b Calculated by compiler.</p>		pH	Solubility (mg/ml) at 37°C in McIlvaine buffer solutions determined after ^a					24 h	48 h	72 h	Average	10^3 mol dm^{-3} ^b	3	0.58	0.57	0.60	0.58	2.14	4	0.55	0.51	0.50	0.52	1.92	5	0.58	0.54	0.52	0.55	2.03	6	1.28	1.14	1.06	1.16	4.27	7.2	7.03	7.11	6.96	7.03	25.9
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METHOD/APPARATUS/PROCEDURE: Satd solns of carbutamide in McIlvaine buffer solns of appropriate pH were shaken at 30 strokes/min at 37°C, and samples were withdrawn for analysis after 24, 48 and 72 h. The samples were taken with a syringe equipped with a membrane filter (1.0 μm), and the absorbances were read after diln with 0.1 M phosphate buffer (pH 9.2) at 254 nm.	SOURCE AND PURITY OF MATERIALS: Carbutamide powder was a commercial product from Ono Pharmaceutical Co., Ltd., Osaka, Japan. The remaining materials were of reagent grade.																																									
	ESTIMATED ERROR: Soly: accuracy ± 0.04 ; ± 0.06 ; ± 0.07 ; ± 0.10 ; ± 0.18 mg/ml, resp. (compiler). Temp and pH: not specified.																																									
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