

COMPONENTS:		ORIGINAL MEASUREMENTS:					
(1) Rubidium dihydrogenphosphate; $\text{RbH}_2\text{PO}_4$ ; [13774-16-8] (2) Ammonium dihydrogenphosphate; $\text{NH}_4\text{H}_2\text{PO}_4$ ; [7722-76-1] (3) Water; $\text{H}_2\text{O}$ ; [7732-18-5]		Zvorykin, A.Ya.; Vetkina, L.S. <i>Zh. Neorg. Khim.</i> <u>1961</u> , 6, 2572-5.					
VARIABLES:		PREPARED BY:					
Composition at 25°C.		J. Eysseltová					
EXPERIMENTAL VALUES:							
Composition of saturated solutions in the $\text{RbH}_2\text{PO}_4\text{-NH}_4\text{H}_2\text{PO}_4\text{-H}_2\text{O}$ system at 25°C.							
Rb	$\text{NH}_3$	P	$\text{RbH}_2\text{PO}_4$		$\text{NH}_4\text{H}_2\text{PO}_4$		solid phase
mass%	mass%	mass%	mass%	mol/kg <sup>a</sup>	mass%	mol/kg <sup>a</sup>	
21.37	----	7.92	46.12	4.69	----	----	$\text{RbH}_2\text{PO}_4$
18.35	1.07	8.36	39.17	4.01	7.24	1.17	solid soln
15.94	2.43	7.53	32.05	4.41	16.43	2.77	"
11.26	3.48	9.40	24.03	2.51	23.54	3.90	"
8.32	2.89	6.52	17.72	1.62	22.3	3.23	"
8.05	3.14	6.84	17.19	1.61	24.42	3.64	"
7.3	2.97	8.06	15.58	1.40	23.27	3.31	"
6.78	3.47	7.61	14.48	1.28	23.47	3.29	"
-----	4.36	7.85	-----	-----	29.31	3.60	$\text{NH}_4\text{H}_2\text{PO}_4$
<sup>a</sup> The mol/kg $\text{H}_2\text{O}$ values were calculated by the compiler.							
AUXILIARY INFORMATION							
METHOD/APPARATUS/PROCEDURE:				SOURCE AND PURITY OF MATERIALS:			
The components were mixed, dissolved in water at 65°C, cooled rapidly to 25°C and equilibrated by shaking for several days. $\text{P}_2\text{O}_5$ was determined gravimetrically as $\text{Mg}_2\text{P}_2\text{O}_7$ , rubidium was weighed as $\text{RbClO}_4$ , and ammonia was determined by the Kjeldahl method.				$\text{RbH}_2\text{PO}_4$ and $\text{NH}_4\text{H}_2\text{PO}_4$ were synthesized from chemically pure $\text{H}_3\text{PO}_4$ and $\text{Rb}_2\text{CO}_3$ or $\text{NH}_3$ . The analyses were:			
						found	
		$\text{RbH}_2\text{PO}_4$		46.16% Rb		46.85% Rb	
		"		16.66% P		16.98% P	
		$\text{NH}_4\text{H}_2\text{PO}_4$		14.4% N		14.78% N	
		"		26.62% P		26.95% P	
ESTIMATED ERROR:							
No information is given.							
REFERENCES:							

<b>COMPONENTS:</b> (1) Rubidium dihydrogenphosphate; $\text{RbH}_2\text{PO}_4$ ; [13774-16-8] (2) Rubidium chloride; $\text{RbCl}$ ; [7791-11-9] (3) Water; $\text{H}_2\text{O}$ ; [7732-18-5]	<b>ORIGINAL MEASUREMENTS:</b> Bykova, I.N.; Kuznetsova, G.P.; Kolotilova, V.Ya.; Stepin, B.D. <i>Zh. Neorg. Khim.</i> <u>1968</u> , <i>13</i> , 540-4.																																																																					
<b>VARIABLES:</b> Composition at 25°C.	<b>PREPARED BY:</b> J. Eysseltová																																																																					
<b>EXPERIMENTAL VALUES:</b> Solubility in the $\text{RbH}_2\text{PO}_4$ - $\text{RbCl}$ - $\text{H}_2\text{O}$ system at 25°C. <table border="1" data-bbox="442 500 1120 889" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2"><math>\text{RbH}_2\text{PO}_4</math></th> <th colspan="2"><math>\text{RbCl}</math></th> <th rowspan="2">solid phase</th> </tr> <tr> <th>mass%</th> <th>mol/kg<sup>a</sup></th> <th>mass%</th> <th>mol/kg<sup>a</sup></th> </tr> </thead> <tbody> <tr> <td>44.05</td> <td>4.32</td> <td>----</td> <td>----</td> <td><math>\text{RbH}_2\text{PO}_4</math></td> </tr> <tr> <td>36.51</td> <td>3.47</td> <td>5.86</td> <td>0.84</td> <td>"<sub>2</sub></td> </tr> <tr> <td>27.78</td> <td>2.57</td> <td>12.87</td> <td>1.79</td> <td>"</td> </tr> <tr> <td>13.76</td> <td>1.29</td> <td>27.62</td> <td>3.90</td> <td>"</td> </tr> <tr> <td>8.07</td> <td>0.77</td> <td>34.62</td> <td>4.99</td> <td>"</td> </tr> <tr> <td>6.72</td> <td>0.67</td> <td>38.09</td> <td>5.71</td> <td>"</td> </tr> <tr> <td>4.50</td> <td>0.46</td> <td>42.01</td> <td>6.49</td> <td>"</td> </tr> <tr> <td>4.34</td> <td>0.47</td> <td>45.12</td> <td>7.41</td> <td><math>\text{RbH}_2\text{PO}_4 + \text{RbCl}</math></td> </tr> <tr> <td>3.44</td> <td>0.37</td> <td>46.06</td> <td>7.54</td> <td>"<sub>RbCl</sub></td> </tr> <tr> <td>2.90</td> <td>0.33</td> <td>46.48</td> <td>7.59</td> <td>"</td> </tr> <tr> <td>0.74</td> <td>0.078</td> <td>47.29</td> <td>7.53</td> <td>"</td> </tr> <tr> <td>-----</td> <td>-----</td> <td>48.29</td> <td>7.72</td> <td>"</td> </tr> </tbody> </table> <p data-bbox="442 899 1120 940"><sup>a</sup>The mol/kg <math>\text{H}_2\text{O}</math> values were calculated by the compiler.</p>		$\text{RbH}_2\text{PO}_4$		$\text{RbCl}$		solid phase	mass%	mol/kg <sup>a</sup>	mass%	mol/kg <sup>a</sup>	44.05	4.32	----	----	$\text{RbH}_2\text{PO}_4$	36.51	3.47	5.86	0.84	" <sub>2</sub>	27.78	2.57	12.87	1.79	"	13.76	1.29	27.62	3.90	"	8.07	0.77	34.62	4.99	"	6.72	0.67	38.09	5.71	"	4.50	0.46	42.01	6.49	"	4.34	0.47	45.12	7.41	$\text{RbH}_2\text{PO}_4 + \text{RbCl}$	3.44	0.37	46.06	7.54	" <sub>RbCl</sub>	2.90	0.33	46.48	7.59	"	0.74	0.078	47.29	7.53	"	-----	-----	48.29	7.72	"
$\text{RbH}_2\text{PO}_4$		$\text{RbCl}$		solid phase																																																																		
mass%	mol/kg <sup>a</sup>	mass%	mol/kg <sup>a</sup>																																																																			
44.05	4.32	----	----	$\text{RbH}_2\text{PO}_4$																																																																		
36.51	3.47	5.86	0.84	" <sub>2</sub>																																																																		
27.78	2.57	12.87	1.79	"																																																																		
13.76	1.29	27.62	3.90	"																																																																		
8.07	0.77	34.62	4.99	"																																																																		
6.72	0.67	38.09	5.71	"																																																																		
4.50	0.46	42.01	6.49	"																																																																		
4.34	0.47	45.12	7.41	$\text{RbH}_2\text{PO}_4 + \text{RbCl}$																																																																		
3.44	0.37	46.06	7.54	" <sub>RbCl</sub>																																																																		
2.90	0.33	46.48	7.59	"																																																																		
0.74	0.078	47.29	7.53	"																																																																		
-----	-----	48.29	7.72	"																																																																		
<b>AUXILIARY INFORMATION</b>																																																																						
<b>METHOD/APPARATUS/PROCEDURE:</b> The mixtures were equilibrated isothermally for 15 days in an apparatus described earlier (1). The rubidium and chloride contents were determined gravimetrically, Rb as the tetraphenylborate and Cl as $\text{AgCl}$ . The composition of the solid phases was determined by the wet-residue method.	<b>SOURCE AND PURITY OF MATERIALS:</b> Chemically pure $\text{RbCl}$ was heated to 400°C, recrystallized and dried at 120°C. $\text{RbH}_2\text{PO}_4$ was synthesized from $\text{H}_3\text{PO}_4$ and $\text{Rb}_2\text{CO}_3$ . The latter was obtained by calcining $\text{Rb}_2(\text{COO})_2$ . The impurities in the $\text{RbH}_2\text{PO}_4$ were less than 0.05 mass%.  <b>ESTIMATED ERROR:</b> The temperature was controlled to within $\pm 0.1$ K. No other details are given.  <b>REFERENCES:</b> 1. Kuznetsova, G.P.; Stepin, B.D. <i>Zh. Neorg. Khim.</i> <u>1965</u> , <i>10</i> , 472.																																																																					