

COMPONENTS: (1) Cesium dihydrogenphosphate; CsH_2PO_4 ; [18649-05-3] (2) Ammonium dihydrogenphosphate; $\text{NH}_4\text{H}_2\text{PO}_4$; [7722-76-1] (3) Water; H_2O ; [7732-18-5]	ORIGINAL MEASUREMENTS: Zvorykin, A.Ya.; Ratnikova, V.D. <i>Zh. Neorg. Khim.</i> <u>1963</u> , 8, 1018-9.																																																																										
VARIABLES: Composition at 25°C.	PREPARED BY: J. Eysseltová																																																																										
EXPERIMENTAL VALUES: Composition of saturated solutions in the $\text{CsH}_2\text{PO}_4\text{-NH}_4\text{H}_2\text{PO}_4\text{-H}_2\text{O}$ system at 25°C. <table border="1" data-bbox="399 531 1306 930" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">CsH_2PO_4</th> <th colspan="2">$\text{NH}_4\text{H}_2\text{PO}_4$</th> <th rowspan="2">solid phase</th> </tr> <tr> <th>mass%</th> <th>mol/kg^a</th> <th>mass%</th> <th>mol/kg^a</th> </tr> </thead> <tbody> <tr> <td>66.26</td> <td>8.55</td> <td>----</td> <td>----</td> <td>CsH_2PO_4</td> </tr> <tr> <td>65.29</td> <td>9.15</td> <td>3.65</td> <td>7.86</td> <td>solid soln A</td> </tr> <tr> <td>59.73</td> <td>8.91</td> <td>11.09</td> <td>25.3</td> <td>"</td> </tr> <tr> <td>64.85</td> <td>10.7</td> <td>8.72</td> <td>22.0</td> <td>"</td> </tr> <tr> <td>56.76</td> <td>7.18</td> <td>8.85</td> <td>17.1</td> <td>solid soln A + solid soln B</td> </tr> <tr> <td>49.12</td> <td>5.92</td> <td>14.77</td> <td>27.2</td> <td>solid soln B</td> </tr> <tr> <td>52.79</td> <td>6.93</td> <td>14.07</td> <td>28.3</td> <td>"</td> </tr> <tr> <td>54.83</td> <td>7.61</td> <td>13.80</td> <td>29.3</td> <td>"</td> </tr> <tr> <td>35.91</td> <td>3.56</td> <td>20.16</td> <td>30.6</td> <td>"</td> </tr> <tr> <td>22.50</td> <td>1.80</td> <td>23.14</td> <td>28.3</td> <td>"</td> </tr> <tr> <td>12.88</td> <td>0.91</td> <td>25.57</td> <td>27.7</td> <td>"</td> </tr> <tr> <td>5.42</td> <td>0.35</td> <td>27.20</td> <td>26.9</td> <td>"</td> </tr> <tr> <td>-----</td> <td>-----</td> <td>29.31</td> <td>27.6</td> <td>$\text{NH}_4\text{H}_2\text{PO}_4$</td> </tr> </tbody> </table> <p data-bbox="392 940 1063 981">^aThe mol/kg H_2O values were calculated by the compiler.</p>		CsH_2PO_4		$\text{NH}_4\text{H}_2\text{PO}_4$		solid phase	mass%	mol/kg ^a	mass%	mol/kg ^a	66.26	8.55	----	----	CsH_2PO_4	65.29	9.15	3.65	7.86	solid soln A	59.73	8.91	11.09	25.3	"	64.85	10.7	8.72	22.0	"	56.76	7.18	8.85	17.1	solid soln A + solid soln B	49.12	5.92	14.77	27.2	solid soln B	52.79	6.93	14.07	28.3	"	54.83	7.61	13.80	29.3	"	35.91	3.56	20.16	30.6	"	22.50	1.80	23.14	28.3	"	12.88	0.91	25.57	27.7	"	5.42	0.35	27.20	26.9	"	-----	-----	29.31	27.6	$\text{NH}_4\text{H}_2\text{PO}_4$
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METHOD/APPARATUS/PROCEDURE: The samples were dissolved at 65°C and equilibrated in a water bath by shaking for several days. P_2O_5 was determined gravimetrically as $\text{Mg}_2\text{P}_2\text{O}_7$. Ammonia was determined by the Kjeldahl method. The composition of the solid phases was determined by the wet-residue method.	SOURCE AND PURITY OF MATERIALS: Both phosphates were prepared by reacting H_3PO_4 with Cs_2CO_3 or with NH_3 . Analysis: found CsH_2PO_4 13.40% P $\text{NH}_4\text{H}_2\text{PO}_4$ 26.62% P and 14.4% NH_3 calculated CsH_2PO_4 13.48% P $\text{NH}_4\text{H}_2\text{PO}_4$ 26.7% P and 15.5% NH_3 .																																																																										
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COMPONENTS: (1) Cesium dihydrogenphosphate; CsH_2PO_4 ; [18649-05-3] (2) Cesium chloride; CsCl ; [7647-17-8] (3) Water; H_2O ; [7732-18-5]	ORIGINAL MEASUREMENTS: 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.																																																																
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EXPERIMENTAL VALUES: Composition of saturated solutions in the CsH_2PO_4 - CsCl - H_2O system at 25°C. <table border="1" data-bbox="311 533 1057 874"> <thead> <tr> <th colspan="2">CsH_2PO_4</th> <th colspan="2">CsCl</th> <th rowspan="2">solid phase</th> </tr> <tr> <th>mass%</th> <th>mol/kg^a</th> <th>mass%</th> <th>mol/kg^a</th> </tr> </thead> <tbody> <tr> <td>59.51</td> <td>6.39</td> <td>----</td> <td>----</td> <td>CsH_2PO_4</td> </tr> <tr> <td>52.31</td> <td>5.63</td> <td>7.30</td> <td>1.07</td> <td>"</td> </tr> <tr> <td>45.16</td> <td>4.72</td> <td>13.22</td> <td>1.88</td> <td>"</td> </tr> <tr> <td>38.28</td> <td>3.86</td> <td>18.62</td> <td>2.57</td> <td>"</td> </tr> <tr> <td>33.80</td> <td>3.40</td> <td>22.91</td> <td>3.14</td> <td>"</td> </tr> <tr> <td>20.93</td> <td>2.12</td> <td>36.09</td> <td>4.99</td> <td>"</td> </tr> <tr> <td>7.19</td> <td>0.84</td> <td>55.42</td> <td>8.80</td> <td>"</td> </tr> <tr> <td>4.60</td> <td>0.58</td> <td>60.99</td> <td>10.5</td> <td>CsH_2PO_4 + CsCl</td> </tr> <tr> <td>3.42</td> <td>0.43</td> <td>61.73</td> <td>10.5</td> <td>CsCl</td> </tr> <tr> <td>1.47</td> <td>0.19</td> <td>64.47</td> <td>11.2</td> <td>"</td> </tr> <tr> <td>----</td> <td>----</td> <td>65.77</td> <td>11.4</td> <td>"</td> </tr> </tbody> </table> <p data-bbox="311 891 979 927">^aThe mol/kg H_2O values were calculated by the compiler.</p>		CsH_2PO_4		CsCl		solid phase	mass%	mol/kg ^a	mass%	mol/kg ^a	59.51	6.39	----	----	CsH_2PO_4	52.31	5.63	7.30	1.07	"	45.16	4.72	13.22	1.88	"	38.28	3.86	18.62	2.57	"	33.80	3.40	22.91	3.14	"	20.93	2.12	36.09	4.99	"	7.19	0.84	55.42	8.80	"	4.60	0.58	60.99	10.5	CsH_2PO_4 + CsCl	3.42	0.43	61.73	10.5	CsCl	1.47	0.19	64.47	11.2	"	----	----	65.77	11.4	"
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METHOD/APPARATUS/PROCEDURE: The mixtures were equilibrated isothermally for 15 days. The apparatus is described elsewhere (1). The analyses were done gravimetrically: chloride was determined as AgCl ; phosphorus was determined as $\text{Mg}_2\text{P}_2\text{O}_7$. The composition of the solid phases was determined by the wet-residue method.	SOURCE AND PURITY OF MATERIALS: Chemically pure CsCl was heated to 400°C, recrystallized and dried at 120°C. CsH_2PO_4 was synthesized from H_3PO_4 and Cs_2CO_3 . The latter was obtained by calcining $\text{Cs}_2(\text{COO})_2$. The maximum amount of impurities in the CsH_2PO_4 was 0.05 mass%. ESTIMATED ERROR: The temperature was controlled to within ± 0.1 K. No other details are given. REFERENCES: 1. Kuznetsova, G.P.; Stepin, B.D. <i>Zh. Neorg. Khim.</i> <u>1965</u> , <i>10</i> , 472.																																																																

COMPONENTS: (1) Cesium dihydrogenphosphate; CsH_2PO_4 ; [18649-05-3] (2) Potassium dihydrogenphosphate; KH_2PO_4 ; [7778-77-0] (3) Water; H_2O ; [7732-18-5]	ORIGINAL MEASUREMENTS: Sayamyan, E.A.; Bashugyan, D.P.; Karapetyan, T.I.; Grigoryan, K.G.; Khachikyan, A.V. Zh. Neorg. Khim. 1977, 22, 1119-23.																																																																
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EXPERIMENTAL VALUES: Composition of saturated solutions in the CsH_2PO_4 - KH_2PO_4 - H_2O system at 25°C. <table border="1" data-bbox="385 531 1256 889"> <thead> <tr> <th colspan="2">CsH_2PO_4</th> <th colspan="2">KH_2PO_4</th> <th rowspan="2">solid phase</th> </tr> <tr> <th>mass%</th> <th>mol/kg^a</th> <th>mass%</th> <th>mol/kg^a</th> </tr> </thead> <tbody> <tr> <td>60.40</td> <td>6.37</td> <td>-----</td> <td>-----</td> <td>CsH_2PO_4</td> </tr> <tr> <td>52.80</td> <td>5.43</td> <td>4.9</td> <td>0.85</td> <td>"₂</td> </tr> <tr> <td>47.68</td> <td>4.76</td> <td>8.78</td> <td>1.48</td> <td>"</td> </tr> <tr> <td>46.80</td> <td>4.86</td> <td>11.30</td> <td>1.98</td> <td>CsH_2PO_4 + solid soln</td> </tr> <tr> <td>46.00</td> <td>4.56</td> <td>10.10</td> <td>1.69</td> <td>solid soln (3.3$\text{KH}_2\text{PO}_4 \cdot \text{CsH}_2\text{PO}_4$)</td> </tr> <tr> <td>44.48</td> <td>4.27</td> <td>10.15</td> <td>1.64</td> <td>solid soln (3.6$\text{KH}_2\text{PO}_4 \cdot \text{CsH}_2\text{PO}_4$)</td> </tr> <tr> <td>41.92</td> <td>3.83</td> <td>10.47</td> <td>1.61</td> <td>solid soln (4.3$\text{KH}_2\text{PO}_4 \cdot \text{CsH}_2\text{PO}_4$)</td> </tr> <tr> <td>21.70</td> <td>1.45</td> <td>13.34</td> <td>1.51</td> <td>solid soln (5.7$\text{KH}_2\text{PO}_4 \cdot \text{CsH}_2\text{PO}_4$)</td> </tr> <tr> <td>12.16</td> <td>0.710</td> <td>13.34</td> <td>1.32</td> <td>KH_2PO_4</td> </tr> <tr> <td>8.32</td> <td>0.476</td> <td>15.69</td> <td>1.52</td> <td>"₂</td> </tr> <tr> <td>-----</td> <td>-----</td> <td>17.4</td> <td>1.55</td> <td>"</td> </tr> </tbody> </table> <p data-bbox="385 899 1056 940">^aThe mol/kg H_2O values were calculated by the compiler.</p> <p data-bbox="357 950 1156 1011">The authors also present crystallographic and X-ray data for both phosphates and for the solid soln (3.3$\text{KH}_2\text{PO}_4 \cdot \text{CsH}_2\text{PO}_4$).</p>		CsH_2PO_4		KH_2PO_4		solid phase	mass%	mol/kg ^a	mass%	mol/kg ^a	60.40	6.37	-----	-----	CsH_2PO_4	52.80	5.43	4.9	0.85	" ₂	47.68	4.76	8.78	1.48	"	46.80	4.86	11.30	1.98	CsH_2PO_4 + solid soln	46.00	4.56	10.10	1.69	solid soln (3.3 $\text{KH}_2\text{PO}_4 \cdot \text{CsH}_2\text{PO}_4$)	44.48	4.27	10.15	1.64	solid soln (3.6 $\text{KH}_2\text{PO}_4 \cdot \text{CsH}_2\text{PO}_4$)	41.92	3.83	10.47	1.61	solid soln (4.3 $\text{KH}_2\text{PO}_4 \cdot \text{CsH}_2\text{PO}_4$)	21.70	1.45	13.34	1.51	solid soln (5.7 $\text{KH}_2\text{PO}_4 \cdot \text{CsH}_2\text{PO}_4$)	12.16	0.710	13.34	1.32	KH_2PO_4	8.32	0.476	15.69	1.52	" ₂	-----	-----	17.4	1.55	"
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METHOD/APPARATUS/PROCEDURE: Saturated solutions of both phosphates were mixed at 50°C and the mixtures were thermostated at 25°C for a week. P_2O_5 was determined gravimetrically as $\text{Mg}_2\text{P}_2\text{O}_7$. Potassium content was determined by flame photometry. The composition of the solid phases was determined by the wet-residue method.	SOURCE AND PURITY OF MATERIALS: Both salts were of a "chemically pure" grade. ESTIMATED ERROR: No information is given. REFERENCES:																																																																