

COMPONENTS:				ORIGINAL MEASUREMENTS:			
(1) Potassium dihydrogenphosphate; KH_2PO_4 ; [7778-77-0]				Paravano, N.; Mieli, A.			
(2) Phosphoric acid; H_3PO_4 ; [7664-38-2]				Gaz. Chim. Ital. 1908, 11, 535-44.			
(3) Water; H_2O ; [7732-18-5]							
VARIABLES:				PREPARED BY:			
Composition and temperature				J. Eysseltová			
EXPERIMENTAL VALUES:							
Saturation temperatures of the solutions of $KH_2PO_4 \cdot H_3PO_4$ in water.							
$KH_2PO_4 \cdot H_3PO_4$		$KH_2PO_4^a$		$H_3PO_4^a$		$t/^\circ C.$	solid phase
mass%	mol%	mass%	mol/kg	mass%	mol/kg		
0	0	0	0	0	0	0	ice
3.337	0.27	1.94	0.147	1.40	0.147	-0.6	"
8.824	0.69	4.82	0.385	3.47	0.385	-1.7	"
12.13	1.05	7.05	0.589	5.08	0.589	-2.5	"
20.50	1.94	11.92	1.101	8.58	1.101	-5.7	"
29.43	3.11	17.11	1.781	12.32	1.781	-6.7	"
36.98	4.32	21.50	2.506	15.48	2.506	-9.2	"
45.80	6.10	26.63	3.609	19.17	3.609	~0	KH_2PO_4
50.33	7.21	29.26	4.328	21.07	4.328	10.9	"
68.44	14.30	39.79	9.263	28.65	9.263	65.2	"
72.43	16.81	42.11	11.222	30.32	11.222	78.0	"
77.60	21.05	45.11	14.798	32.48	14.798	87.5	"
85.88	31.86	49.93	25.981	35.95	25.981	105.5	"
92.18	47.57	53.59	50.353	38.59	50.353	120.0	"
95.73	63.31	55.65	95.767	40.07	95.676	134.5	"
96.10	65.47	55.87	100	40.22	100	135.0	"
98.85	88.88	57.47	100	41.39	100	137.5	"
100	100	58.14		41.86		139.0	"
^a These values were calculated by the compiler.							
AUXILIARY INFORMATION							
METHOD/APPARATUS/PROCEDURE:				SOURCE AND PURITY OF MATERIALS:			
There was a constant ratio of KH_2PO_4/H_3PO_4 . Saturation temperatures were determined visually as the temperature of disappearance of the last crystal.				The $KH_2PO_4 \cdot H_3PO_4$ was prepared from an equimolar mixture of concentrated solutions of KH_2PO_4 and H_3PO_4 by slow crystallization.			
				Analysis: observed calculated			
				P_2O_5 60.44% 60.64%			
				K_2O 20.38% 20.13%			
				ESTIMATED ERROR:			
				No information is given.			
				REFERENCES:			

COMPONENTS:		ORIGINAL MEASUREMENTS:				
(1) Tripotassium phosphate; K ₃ PO ₄ ; [7778-53-2]		D'Ans, J.; Schreiner, O.				
(2) Phosphoric acid; H ₃ PO ₄ ; [7664-38-2]		Z. Anorg. Chem. <u>1911</u> , 75, 95-102.				
(3) Water; H ₂ O; [7732-18-5]						
VARIABLES:		PREPARED BY:				
Composition at 25°C.		J. Eysseltová				
EXPERIMENTAL VALUES: Solubility in the K ₃ PO ₄ -H ₃ PO ₄ -H ₂ O system at 25°C.						
K ⁺ conc ^a	PO ₄ ³⁻ concn ^a	K ₃ PO ₄ ^b		H ₃ PO ₄ ^b		solid phase
		mass%	mol/kg	mass%	mol/kg	
9.14	3.13	64.71	8.84	0.84	0.25	K ₃ PO ₄
8.84	3.22	62.58	8.49	2.70	0.79	" ^c
8.42	3.44	59.61	8.23	6.23	1.68	" ^c
7.52	3.78	53.24	7.32	12.50	3.72	"
6.90	4.15	48.85	6.97	18.15	5.61	"
6.88	4.12	48.70	6.87	17.92	5.48	"
6.80	4.08	48.14	6.60	17.79	5.32	K ₂ HPO ₄ ^c
6.80	4.05	48.14	6.60	17.49	5.19	"
6.76	3.96	47.85	6.36	16.74	4.82	" ^c
6.50	3.85	46.01	5.72	16.12	4.34	" ^c
6.16	3.61	43.61	4.99	15.27	3.79	" ^c
5.24	3.25	37.09	3.62	14.74	3.12	" ^c
4.42	2.94	31.29	2.71	14.38	2.70	"
2.90	2.36	20.53	1.46	13.66	2.11	KH ₂ PO ₄ ^c
1.70	1.71	12.03	0.73	11.21	1.49	" ^c
1.60	1.67	11.32	0.68	11.14	1.46	"
1.48	1.46	10.46	0.61	9.51	1.21	"
1.78	3.15	12.60	0.95	25.06	4.10	"
2.18	4.65	15.43	1.57	38.45	8.51	"
2.54	6.32	17.98	2.98	53.64	19.29	"
2.66	6.76	18.83	3.75	57.56	24.89	"
2.98	8.03	21.09	10.00	68.96	70.85	" ^c
3.32	8.80	23.50	101.6	75.40	706.4	" ^c
^a The concentration unit is: mol/1000 g soln.						
^b These values were calculated by the compiler.						
^c These solid phases were analyzed.						
AUXILIARY INFORMATION						
METHOD/APPARATUS/PROCEDURE:			SOURCE AND PURITY OF MATERIALS:			
The solid phases were separated by pressing them between two porous plates. H ₃ PO ₄ was precipitated as NH ₄ MgPO ₄ ·6H ₂ O and weighed as Mg ₂ P ₂ O ₇ . Potassium was determined gravimetrically as KClO ₄ .			Commercial materials were used and were recrystallized before use.			
ESTIMATED ERROR:						
The temperature was controlled to within ± 0.05 K.						
REFERENCES:						

COMPONENTS:		ORIGINAL MEASUREMENTS:						
(1) Tripotassium phosphate; K_3PO_4 ; [7778-53-2]		Flatt, R.; Brunisholz, G.; Bourgeois, J. <i>Helv. Chim. Acta</i> <u>1956</u> , 39, 841-53.						
(2) Phosphoric acid; H_3PO_4 ; [7664-38-2]								
(3) Water; H_2O ; [7732-18-5]								
VARIABLES:		PREPARED BY:						
Composition at 25°C.		J. Eysseltová						
EXPERIMENTAL VALUES:								
Solubility in the $K_3PO_4-H_3PO_4-H_2O$ system at 25°C.								
K^+	H^+	$K_3PO_4^a$		$H_3PO_4^a$		H_2O	mass% ^a	solid phase ^c
eq%	eq%	mass%	mol/kg	mass%	mol/kg	M ^b	mass% ^a	
0	100.0	0	0	95.6	220	8.4	4.4	A
1.6	98.4	3.3	5.5	93.9	337	5.4	2.8	"
6.0	94.0	11.1	5.8	80.0	91.6	19.0	8.9	B
6.4	93.6	11.2	3.9	75.3	56.8	30.5	13.5	"
8.0	92.0	12.3	2.6	65.5	30.2	56.5	22.2	"
9.1	90.9	13.7	2.8	63.3	28.1	60.0	23.0	"
11.7	88.3	16.9	3.3	58.7	24.6	66.6	24.4	"
13.0	87.0	19.0	4.0	58.7	26.9	60.0	22.3	"
13.4	86.6	19.9	4.6	59.5	29.5	54.4	20.6	B + C
13.3	86.7	18.3	3.2	55.1	21.2	75.8	26.6	C
19.8	80.2	13.0	1.0	24.4	3.97	374.2	62.6	"
22.5	77.5	11.9	0.8	19.0	2.81	511.4	69.1	"
27.2	72.8	11.2	0.7	13.8	1.89	715.0	74.9	"
31.4	68.6	10.4	0.6	10.5	1.35	942.0	79.2	"
33.2	66.7	10.4	0.6	9.7	1.24	1000.0	79.9	"
38.6	61.4	13.5	0.8	9.9	1.32	863.4	76.6	"
43.6	56.4	19.2	1.3	11.4	1.68	620.4	69.4	"
49.0	51.0	27.7	2.2	13.3	2.30	410.5	59.0	"
56.0	44.0	41.8	4.6	15.2	3.59	226.7	43.0	"
59.3	40.7	51.5	7.5	16.3	5.18	145.3	32.2	C + D
59.0	41.0	50.9	7.3	16.3	5.09	149.3	32.8	D
60.6	39.4	52.4	7.7	15.7	5.03	145.0	31.9	D + E
62.1	37.9	50.8	6.9	14.3	4.19	167.5	34.9	E
(continued next page)								
AUXILIARY INFORMATION								
METHOD/APPARATUS/PROCEDURE:					SOURCE AND PURITY OF MATERIALS:			
No information is given.					No information is given.			
					ESTIMATED ERROR:			
					No information is given.			
					REFERENCES:			

COMPONENTS:		ORIGINAL MEASUREMENTS:						
(1) Tripotassium phosphate; K ₃ PO ₄ ; [7778-53-2]		Flatt, R.; Brunisholz, G.; Bourgeois, J.						
(2) Phosphoric acid; H ₃ PO ₄ ; [7664-38-2]		Helv. Chim. Acta <u>1956</u> , 39, 841-53.						
(3) Water; H ₂ O; [7732-18-5]								
EXPERIMENTAL VALUES cont'd:								
Solubility in the K ₃ PO ₄ -H ₃ PO ₄ -H ₂ O system at 25°C.								
K ⁺	H ⁺	K ₃ PO ₄ ^a		H ₃ PO ₄ ^a		H ₂ O	mass% ^a	solid phase ^c
eq%	eq%	mass%	mol/kg	mass%	mol/kg	M ^b		
66.1	33.9	50.9	6.5	12.1	3.33	188.8	37.0	E
66.8	33.2	51.1	6.5	11.7	3.22	191.1	37.2	"
71.5	28.5	52.8	6.6	9.7	2.6	199.8	37.5	"
74.4	25.6	53.7	6.7	8.5	2.3	205.4	37.7	"
82.3	17.7	58.7	7.8	5.8	1.7	195.2	35.4	E + F
100	0	48.1	4.4	0	0	424.4	51.9	F
^a These values were calculated by the compiler.								
^b The concentration unit is: mol g H ₂ O/100 eq of solute.								
^c The solid phases are: A = H ₃ PO ₄ ; B = KH ₅ (PO ₄) ₂ ; C = KH ₂ PO ₄ ; D = K ₅ H ₄ (PO ₄) ₃ ·H ₂ O;								
E = K ₂ HPO ₄ ·3H ₂ O; F = K ₃ PO ₄ ·7H ₂ O.								

COMPONENTS: (1) Potassium dihydrogenphosphate; KH_2PO_4 ; [7778-77-0] (2) Phosphoric acid; H_3PO_4 ; [7664-38-2] (3) Water; H_2O ; [7732-18-5]	ORIGINAL MEASUREMENTS: Orekhov, I.I.; Tereshchenko, L.Ya.; Balabanovich, Ya.K.; Vlasova, T.L. <i>Zh. Neorg. Khim.</i> <u>1969</u> , <i>14</i> , 1637-40.																																																															
VARIABLES: Temperature and composition.	PREPARED BY: J. Eysseľtová																																																															
EXPERIMENTAL VALUES: <p>Part 1. Definition of the sections:</p> <table border="1" data-bbox="315 541 896 633"> <thead> <tr> <th>section</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> </tr> </thead> <tbody> <tr> <td>mass% H_3PO_4</td> <td>4</td> <td>13.5</td> <td>20</td> <td>30</td> <td>40</td> <td>50</td> </tr> </tbody> </table> <p>Part 2. Eutectic points:</p> <table border="1" data-bbox="315 674 1218 919"> <thead> <tr> <th>section</th> <th>KH_2PO_4 mass%</th> <th>H_3PO_4 mass%</th> <th>H_2O mass%</th> <th>$t_s/^\circ C.^a$</th> <th>$t_c/^\circ C.^b$</th> <th>solid phase</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>14.0</td> <td>3.44</td> <td>82.56</td> <td>-2.5</td> <td>-10.0</td> <td>ice + KH_2PO_4</td> </tr> <tr> <td>2</td> <td>14.38</td> <td>11.54</td> <td>74.08</td> <td>-5</td> <td>-13</td> <td>"</td> </tr> <tr> <td>3</td> <td>19.35</td> <td>16.14</td> <td>64.25</td> <td>-7.5</td> <td>-13</td> <td>"</td> </tr> <tr> <td>4</td> <td>20.6</td> <td>24.3</td> <td>55.1</td> <td>-13</td> <td>-14.5</td> <td>"</td> </tr> <tr> <td>5</td> <td>21.9</td> <td>31.3</td> <td>46.8</td> <td>-21.5</td> <td>-24</td> <td>"</td> </tr> <tr> <td>6</td> <td>20.5</td> <td>39.74</td> <td>39.76</td> <td>-35</td> <td>-39</td> <td>"</td> </tr> </tbody> </table> <p>^a Eutectic temperature measured by heating. ^b Eutectic temperature measured by cooling.</p> <p style="text-align: right;">(continued next page)</p>		section	1	2	3	4	5	6	mass% H_3PO_4	4	13.5	20	30	40	50	section	KH_2PO_4 mass%	H_3PO_4 mass%	H_2O mass%	$t_s/^\circ C.^a$	$t_c/^\circ C.^b$	solid phase	1	14.0	3.44	82.56	-2.5	-10.0	ice + KH_2PO_4	2	14.38	11.54	74.08	-5	-13	"	3	19.35	16.14	64.25	-7.5	-13	"	4	20.6	24.3	55.1	-13	-14.5	"	5	21.9	31.3	46.8	-21.5	-24	"	6	20.5	39.74	39.76	-35	-39	"
section	1	2	3	4	5	6																																																										
mass% H_3PO_4	4	13.5	20	30	40	50																																																										
section	KH_2PO_4 mass%	H_3PO_4 mass%	H_2O mass%	$t_s/^\circ C.^a$	$t_c/^\circ C.^b$	solid phase																																																										
1	14.0	3.44	82.56	-2.5	-10.0	ice + KH_2PO_4																																																										
2	14.38	11.54	74.08	-5	-13	"																																																										
3	19.35	16.14	64.25	-7.5	-13	"																																																										
4	20.6	24.3	55.1	-13	-14.5	"																																																										
5	21.9	31.3	46.8	-21.5	-24	"																																																										
6	20.5	39.74	39.76	-35	-39	"																																																										
AUXILIARY INFORMATION																																																																
METHOD/APPARATUS/PROCEDURE: A visual polythermic method (1) was used as well as an isothermal method which involved conductivity measurements. Standard methods of analysis were used but no specific details are given.	SOURCE AND PURITY OF MATERIALS: Chemically pure H_3PO_4 and reagent grade KH_2PO_4 were used.																																																															
ESTIMATED ERROR: No information is given.																																																																
REFERENCES: 1. Bergman, A.G.; Luzhnaya, N.P. <i>Fiziko-Khimicheskie Osnovy Izucheniya i Ispol'zovaniya solyanykh Mestorozhdeniy Khlorid-sul'fatnogo Tipa</i> , Moscow, IAN SSSR, <u>1951</u> . 2. Babayan, S.G.; Pokhomov, B.G.; Melichov, I.V.; Merkulova, M.S. <i>Radiokhimiya</i> <u>1961</u> , <i>3</i> , 391.																																																																

COMPONENTS:

- (1) Potassium dihydrogenphosphate; KH₂PO₄; [7778-77-0]
 (2) Phosphoric acid; H₃PO₄ [7664-38-2]
 (3) Water; H₂O; [7732-18-5]

ORIGINAL MEASUREMENTS:

Orekhov, I.I.; Tereshchenko, L. Ya.;
 Balabanovich, Ya.K.; Vlasova, T.L.
 Zh. Neorg. Khim. 1969, 14, 1637-40.

EXPERIMENTAL VALUES cont'd:

Part 3. Solubility of KH₂PO₄ in aqueous solutions of H₃PO₄.^a
 temperature in °C.

section	10	20	30	40	50	60	70
1	----	17.1	20.6	23.1	----	----	----
2	17.33	20.28	23.4	26.21	29.1	32.46	34.71
3	20.6	23.54	25.7	29.1	32.29	34.88	37.37
4	23.22	25.62	29.25	31.7	33.82	36.1	37.62
5	26.56	28.22	31.72	33.63	35.64	37.4	38.57
6	29.6	30.74	33.0	35.3	37.5	39.4	41.25

^aThe solubility values are given as mass%.

The authors emphasize that supersaturated solutions are formed very easily.

Part 4. The relation of composition of saturated solutions to pH is given in graphical form only.

COMPONENTS:				ORIGINAL MEASUREMENTS:					
(1) Potassium dihydrogenphosphate; KH ₂ PO ₄ ; [7778-77-0]				Beremzhanov, B.A.; Voronina, L.V.; Savich, R.F.					
(2) Phosphoric acid; H ₃ PO ₄ ; [7664-38-2]				Prikl. Teor. Khim. 1978, 3-7.					
(3) Water; H ₂ O; [7732-18-5]									
VARIABLES:				PREPARED BY:					
Temperature and composition.				J. Eysseltová					
EXPERIMENTAL VALUES:									
Composition of saturated solutions in the KH ₂ PO ₄ -H ₃ PO ₄ -H ₂ O system.									
KH ₂ PO ₄		H ₃ PO ₄		K ₂ O	P ₂ O ₅	pH	refr. index	solid phase	
mass%	mol/kg ^a	mass%	mol/kg ^a	mass%	mass%				
temp = 25°C.									
24.8	2.43	0.30	0.04	8.65	13.10	8.25	1.355	KH ₂ PO ₄	
25.8	2.69	3.75	0.54	8.92	22.02	2.38	1.361		
25.0	2.86	10.9	1.73	8.67	20.78	1.97	1.381		
25.2	2.90	11.1	1.77	8.72	21.37	1.86	1.387		
27.2	3.42	14.4	2.51	9.4	22.41	1.61	1.397		
30.8	4.59	23.7	4.40	10.92	26.70	1.12	1.417		
30.4	4.86	23.7	5.26	10.67	31.57	0.56	1.417		
34.7	6.89	28.3	7.80	12.0	33.65	0.21	1.419		
36.7	8.74	32.8	10.97	12.7	35.58	0.20	1.422		
37.9	9.83	33.8	12.18	13.3	44.32	0.16	1.423		
temp = 35°C.									
27.2	2.74	0.0	0.00	9.4	14.3	3.5	1.360		KH ₂ PO ₄
28.0	3.02	4.0	0.60	9.5	17.3	2.76	1.373		
30.1	3.85	12.5	2.22	10.4	24.7	1.82	1.389		
31.9	4.47	15.7	3.05	11.1	28.0	1.20	1.400		
33.9	5.71	22.5	5.26	11.81	34.4	0.88	1.414		
38.0	6.10	27.3	7.01	13.3	39.8	0.30	1.417		
39.2	9.86	31.6	11.04	13.6	43.0	0.15	1.423		
41.5	12.44	34.0	14.16	14.3	46.6	0.02	1.424		
(continued next page)									
AUXILIARY INFORMATION									
METHOD/APPARATUS/PROCEDURE:				SOURCE AND PURITY OF MATERIALS:					
Crystalline KH ₂ PO ₄ was dissolved in phosphoric acid solutions of different concentrations. Four days were allowed for equilibration. No further details are given.				No details are given.					
				ESTIMATED ERROR:					
				No details are given.					
				REFERENCES:					

COMPONENTS:				ORIGINAL MEASUREMENTS:				
(1) Potassium dihydrogenphosphate; KH ₂ PO ₄ ; [7778-77-0]				Beremzhanov, B.A.; Voronina, L.V.; Savich, R.F.				
(2) Phosphoric acid; H ₃ PO ₄ ; [7664-38-2]				Prikl. Teor. Khim. 1978, 3-7.				
(3) Water; H ₂ O; [7732-18-5]								
EXPERIMENTAL VALUES cont'd:								
Composition of saturated solutions in the KH ₂ PO ₄ -H ₃ PO ₄ -H ₂ O system.								
KH ₂ PO ₄		H ₃ PO ₄		K ₂ O	P ₂ O ₅	pH	refr. index	solid phase
mass%	mol/kg ^a	mass%	mol/kg ^a	mass%	mass%			
temp = 50°C.								
23.6	2.26	----	0.00	10.25	15.41	3.70	1.365	KH ₂ PO ₄
29.9	3.28	3.3	0.50	10.35	17.99	3.10	1.370	
30.0	3.48	6.8	1.09	10.96	20.58	2.19	1.372	
31.5	4.09	12.0	2.16	10.90	25.11	1.78	1.373	
33.6	4.81	15.1	3.00	11.52	28.40	1.56	1.384	
35.2	5.59	18.6	4.10	12.19	31.81	1.12	1.398	
36.3	6.25	20.0	4.72	12.55	33.42	0.89	1.394	
38.7	7.56	23.7	6.43	13.39	37.2	0.69	1.401	
39.5	8.29	25.5	7.43	13.65	39.10	0.44	1.409	
40.9	9.10	26.1	8.07	13.75	40.25	0.34	1.410	
41.9	10.72	29.4	10.45	14.50	43.12	0.25	1.413	
42.5	11.69	30.8	11.77	14.70	44.50	0.23	1.415	
44.4	14.30	32.8	14.67	15.35	46.89	-0.04	1.419	
46.0	17.33	34.5	18.05	15.90	49.01	-0.08	1.423	

^aThe mol/kg H₂O values were calculated by the compiler.

COMPONENTS: (1) Potassium dihydrogenphosphate; KH_2PO_4 ; [7778-77-0] (2) Potassium hydroxide; KOH; [1310-58-3] (3) Water; H_2O ; [7732-18-5]	ORIGINAL MEASUREMENTS: Marshall, W.L. <i>J. Chem. Eng. Data</i> <u>1982</u> , 27, 175-80.																																																																																																																																												
VARIABLES: Temperature and five K/P ratios.	PREPARED BY: J. Eysseltová																																																																																																																																												
EXPERIMENTAL VALUES: <p style="text-align: center;">Immiscibility and liquid-vapor critical phenomena for aqueous potassium phosphate solutions.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">solute stoichiometry</th> <th style="text-align: center;">immiscibility boundary</th> <th style="text-align: center;">phase^c</th> <th colspan="2" style="text-align: center;">critical phenomenon</th> </tr> <tr> <th style="text-align: center;">K/PO_4 ratio</th> <th style="text-align: center;">mass%</th> <th style="text-align: center;">mol/kg^a</th> <th style="text-align: center;">$t^b/^\circ C$</th> <th></th> <th style="text-align: center;">$t/^\circ C$</th> <th style="text-align: center;">mass%^d</th> </tr> </thead> <tbody> <tr><td>1</td><td>5.05</td><td>0.39</td><td>386.8 ± 0.2</td><td>L₂</td><td>389.0 ± 0.5</td><td>2.2</td></tr> <tr><td>1</td><td>10.09</td><td>0.82</td><td>385.6 ± 0.1</td><td>L₂</td><td>388.5 ± 0.5</td><td>2.2</td></tr> <tr><td>1</td><td>14.8</td><td>1.28</td><td>385.7 ± 0.1</td><td>L₂</td><td>389.0 ± 0.5</td><td>2.2</td></tr> <tr><td>1</td><td>20.0</td><td>1.84</td><td>386.1 ± 0.2</td><td>L₂</td><td>388.9 ± 0.2</td><td>2.2</td></tr> <tr><td>1</td><td>25.0</td><td>2.45</td><td>386.9 ± 0.4</td><td>L^x</td><td>388.7 ± 0.5</td><td>2.2</td></tr> <tr><td>1</td><td>29.5</td><td>3.07</td><td>387.8 ± 0.4</td><td>L₁</td><td>389.0 ± 0.5</td><td>2.2</td></tr> <tr><td>1</td><td>33^d</td><td>3.62</td><td>389^d</td><td>L₁</td><td>389^d</td><td>2.2</td></tr> <tr><td>1</td><td>41.5</td><td>5.21</td><td>e</td><td>e₁</td><td>e</td><td>e</td></tr> <tr><td>1.2</td><td>5.07</td><td>0.37</td><td>376.0 ± 0.3</td><td>L₂</td><td>384.0 ± 0.5</td><td>1.8</td></tr> <tr><td>1.2</td><td>10.3</td><td>0.79</td><td>371.8 ± 0.2</td><td>L₂</td><td>383.9 ± 0.3</td><td>1.8</td></tr> <tr><td>1.2</td><td>15.1</td><td>1.23</td><td>371.0 ± 0.1</td><td>L₂</td><td>384.9 ± 0.3</td><td>1.8</td></tr> <tr><td>1.2</td><td>20.2</td><td>1.75</td><td>370.9 ± 0.2</td><td>L₂</td><td>384.0 ± 0.5</td><td>1.8</td></tr> <tr><td>1.2</td><td>25.1</td><td>2.32</td><td>372.0 ± 0.2</td><td>L₂</td><td>385.0 ± 0.2</td><td>1.8</td></tr> <tr><td>1.2</td><td>30.2</td><td>2.99</td><td>373.0 ± 0.1</td><td>L^x</td><td>384.5 ± 0.5</td><td>1.8</td></tr> <tr><td>1.2</td><td>35.1</td><td>3.74</td><td>374.9 ± 0.1</td><td>L₁</td><td>385.1 ± 0.1</td><td>1.8</td></tr> <tr><td>1.2</td><td>39^d</td><td>4.42</td><td>384.5^d</td><td>L₁</td><td>384.5^d</td><td>1.8</td></tr> <tr><td>1.2</td><td>40.2</td><td>4.64</td><td>e</td><td>e₁</td><td>e</td><td>e</td></tr> <tr><td>1.2</td><td>50.1</td><td>6.94</td><td>e</td><td>e</td><td>e</td><td>e</td></tr> </tbody> </table> <p style="text-align: right;">(continued next page)</p>		solute stoichiometry			immiscibility boundary	phase ^c	critical phenomenon		K/PO_4 ratio	mass%	mol/kg ^a	$t^b/^\circ C$		$t/^\circ C$	mass% ^d	1	5.05	0.39	386.8 ± 0.2	L ₂	389.0 ± 0.5	2.2	1	10.09	0.82	385.6 ± 0.1	L ₂	388.5 ± 0.5	2.2	1	14.8	1.28	385.7 ± 0.1	L ₂	389.0 ± 0.5	2.2	1	20.0	1.84	386.1 ± 0.2	L ₂	388.9 ± 0.2	2.2	1	25.0	2.45	386.9 ± 0.4	L ^x	388.7 ± 0.5	2.2	1	29.5	3.07	387.8 ± 0.4	L ₁	389.0 ± 0.5	2.2	1	33 ^d	3.62	389 ^d	L ₁	389 ^d	2.2	1	41.5	5.21	e	e ₁	e	e	1.2	5.07	0.37	376.0 ± 0.3	L ₂	384.0 ± 0.5	1.8	1.2	10.3	0.79	371.8 ± 0.2	L ₂	383.9 ± 0.3	1.8	1.2	15.1	1.23	371.0 ± 0.1	L ₂	384.9 ± 0.3	1.8	1.2	20.2	1.75	370.9 ± 0.2	L ₂	384.0 ± 0.5	1.8	1.2	25.1	2.32	372.0 ± 0.2	L ₂	385.0 ± 0.2	1.8	1.2	30.2	2.99	373.0 ± 0.1	L ^x	384.5 ± 0.5	1.8	1.2	35.1	3.74	374.9 ± 0.1	L ₁	385.1 ± 0.1	1.8	1.2	39 ^d	4.42	384.5 ^d	L ₁	384.5 ^d	1.8	1.2	40.2	4.64	e	e ₁	e	e	1.2	50.1	6.94	e	e	e	e
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METHOD/APPARATUS/PROCEDURE: The synthetic method was used. Samples of known composition were sealed in fused silica capillary tubes and heated. A chromel-alumel thermocouple was used with a digital readout unit. The experimental details are described in ref. (1).	SOURCE AND PURITY OF MATERIALS: Analytical reagent grade K_2HPO_4 and K_3PO_4 and certified ACS grade KH_2PO_4 were used.																																																																																																																																												
ESTIMATED ERROR: The temperature at which immiscibility occurs had a precision of ± 0.1 K and an accuracy of 0.5 - 1.0 K. The critical temperature had a precision of ± 0.1-0.2 K and an accuracy of 1.0-1.5 K.																																																																																																																																													
REFERENCES: 1. Marshall, W.L.; Hall, C.E.; Mesmer, R.E. <i>J. Inorg. Nucl. Chem.</i> <u>1981</u> , 43, 449.																																																																																																																																													

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(3) Water; H ₂ O; [7732-18-5]	

EXPERIMENTAL VALUES cont'd:

K/PO ₄ ratio	mass%	mol/kg ^a	t ^b /°C	phase ^c	t/°C	mass% ^d
1.5	5.02	0.34	369.0 ± 2.0	L ₂	380.1 ± 0.1	1.5
1.5	10.05	0.72	364.0 ± 1.0	L ₂	380.0 ± 0.5	1.5
1.5	15.1	1.14	362.7 ± 0.1	L ₂	380.0 ± 0.5	1.5
1.5	20.1	1.61	361.7 ± 0.1	L ₂	380.0 ± 0.5	1.5
1.5	30.2	2.77	362.5 ± 0.1	L ₂	380.0 ± 0.5	1.5
1.5	39.8	4.23	365.0 ± 0.5	L _x	380.5 ± 0.5	1.5
1.5	45.2	5.28	372.5 ± 0.5	L ₁	380.0 ± 0.5	1.5
1.5	49 ^d	6.15	380 ^d	L ₁	380 ^d	1.5
1.5	50.3	6.48	e	e ¹	e	e
2 ^f	10.3	0.66	362.4 ± 0.4	L ₂	375.9 ± 0.2	1
2 ^f	20.0	1.44	360.0 ± 0.2	L ₂	376.8 ± 0.5	1
2 ^f	56 ^d	7.31	377 ^d	L ₁	377 ^d	1
2.12	4.73	0.28	369.4 ± 0.2	L ₂	377.3 ± 0.2	2
2.12	9.88	0.61	361.4 ± 0.5	L ₂	378.0 ± 0.2	2
2.12	16.7	1.12	360.9 ± 0.2	L ₂	379.2 ± 0.4	2
2.12	30.3	2.42	362.1 ± 0.2	L ₂	378.5 ± 0.4	2

^aThe mol/kg H₂O values were calculated by the compiler.

^bLower boundary of observation (appearance of second liquid phase with rising temperature).

^cL₁ = dilute liquid phase; L₂ = concentrated liquid phase; L_x = liquid phase near the consolute solution composition (where composition L₁ equals composition L₂).

^dThe mass% of solute was estimated graphically; values at upper temperature limit of immiscibility.

^eNo second liquid or critical phenomenon is observed at temperatures up to 410°C.

^fAdditional values are given in ref. (1).