COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dipotassium hydrogenphosphate; K_2HPO_4; [7758-11-4] (2) Diammonium hydrogenphosphate; $(NH_4)_2HPO_4$; [7783-28-0] (3) Water; H_2O; [7732-18-5]	Sokolov, S.J. *Kaliy* 1937, *2*, 28-32.
VARIABLES:	**PREPARED BY:**
Composition at 0°C.	J. Eysseltová

EXPERIMENTAL VALUES:

Solubility in the K_2HPO_4-$(NH_4)_2HPO_4$-H_2O system at 0°C.

K_2HPO_4		$(NH_4)_2HPO_4$		H_2O	solid[b]
mass%	mol/kg[a]	mass%	mol/kg[a]	mass%	phase
----	----	36.24	4.30	63.76	A
7.94	0.75	31.93	4.02	60.13	"
15.66	1.61	28.60	3.88	55.74	"
17.82	1.86	27.36	3.77	54.82	"
29.34	3.41	21.39	3.28	49.27	"
38.35	5.02	17.86	3.08	43.79	"
43.74	6.08	15.01	2.75	41.25	"
48.90	7.74	14.87	3.10	36.23	A + B
48.58	7.58	14.66	3.01	36.76	B
48.52	6.61	9.35	1.68	42.12	"
48.14	6.05	6.22	1.03	45.64	"
47.64	5.72	4.59	0.72	47.77	"
45.72	4.83	-----	----	54.28	"

[a] The mol/kg H_2O values were calculated by the compiler.

[b] The solid phases are: A = $(NH_4)_2HPO_4$; B = $K_2HPO_4 \cdot 6H_2O$.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
The mixtures were equilibrated isothermally for several days. The P_2O_5 content was determined gravimetrically as $Mg_2P_2O_7$, potassium was determined gravimetrically as $KClO_4$, and nitrogen was determined by the Kjeldahl method.	Purified, commercial materials were used, but no details are given.
	ESTIMATED ERROR: No information is given.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dipotassium dhydrogenphosphate; K_2HPO_4; [7758-11-4] (2) Diammonium hydrogenphosphate; $(NH_4)_2HPO_4$; [7783-28-0] (3) Water; H_2O; [7732-18-5]	1. Bergman, A.G.; Dzuev, A.D. *Uch. Zap. Kabardino-Balkar. Univ. Ser. Sel. Khoz., Khim.-Biol.* 1966, 29, 40-4. 2. Bergman, A.G.; Dzuev, A.D.; Opredelnikova L.V. *Zh. Prikl. Khim.* 1967, 40, 1838-41.
VARIABLES:	PREPARED BY:
Temperature and composition.	J. Eysseltová

EXPERIMENTAL VALUES:

Composition and crystallization temperature of invariant points in the K_2HPO_4-$(NH_4)_2HPO_4$-H_2O system.

	K_2HPO_4		$(NH_4)_2HPO_4$		H_2O	solid[b]
t/°C.	mass%	mol/kg[a]	mass%	mol/kg[a]	mass%	phase
-18	30	3.02	13	1.73	57	A + D + F
-6	41	5.23	14	2.35	45	A + D + E
5	50	7.65	12.5	2.52	37.5	A + B + E
22	57	10.22	11	2.60	32	B + C + E

[a] The mol/kg H_2O values were calculated by the compiler.

[b] The solid phases are: A = $K_2HPO_4 \cdot 6H_2O$; B = $K_2HPO_4 \cdot 3H_2O$; C = K_2HPO_4; D = $(NH_4)_2HPO_4 \cdot 2H_2O$; E = $(NH_4)_2HPO_4$; F = ice.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
A visual polythermic method was used. The disappearance of the last crystals was observed.	Reagent grade K_2HPO_4 was recrystallized from water before use. Reagent grade $(NH_4)_2HPO_4$ was recrystallized from ammoniacal solutions before use.
	ESTIMATED ERROR: No details are given.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dipotassium hydrogenphosphate; K_2HPO_4; [7758-11-4] (2) Potassium carbonate; K_2CO_3; [584-08-7] (3) Water; H_2O; [7732-18-5]	Bergman, A.G.; Velikanova, L.V. *Zh. Neorg. Khim.* 1968, *13*, 557-61.
VARIABLES: Temperature and composition.	**PREPARED BY:** J. Eysseltová

EXPERIMENTAL VALUES:

Crystallization temperature and composition of invariant points in the K_2HPO_4-K_2CO_3-H_2O system.

	K_2HPO_4		K_2CO_3		H_2O	
t/°C.	mass%	mol/kg[a]	mass%	mol/kg[a]	mass%	solid phases[b]
-37	4	0.40	39	4.95	57	ice + A + D
-31.5	21.5	2.17	21.8	2.78	56.7	ice + A + B
72	44.2	8.02	24.2	5.54	31.6	B + C + F
53	32.5	5.15	31.3	6.25	36.2	B + E + F
-7	3.2	0.37	48.3	7.20	48.5	B + D + E

[a] The mol/kg H_2O values were calculated by the compiler.

[b] The solid phases are: A = $K_2HPO_4 \cdot 6H_2O$; B = $K_2HPO_4 \cdot 3H_2O$; C = K_2HPO_4; D = $K_2CO_3 \cdot 6H_2O$; E = $2K_2CO_3 \cdot 3H_2O$; F = K_2CO_3.

Solubility isotherms in the temperature range -20 to +80°C are given in graphical form only.

Relative areas of individual crystallization fields are: ice-16.06%; $K_2CO_3 \cdot 6H_2O$-0.86%; $2K_2CO_3 \cdot 3H_2O$-3.26%; $K_2HPO_4 \cdot 6H_2O$-7.62%; $K_2HPO_4 \cdot 3H_2O$-11.38%; K_2CO_3-40.82%; K_2HPO_4-20%.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
A visual polythermic method was used in the temperature range of -37 to 80°C.	No information is given.
	ESTIMATED ERROR: The precision of the temperature was ± 0.2 to 0.4 K.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dipotassium hydrogenphosphate; K_2HPO_4; [7758-11-4] (2) Urea; CH_4N_2O; [57-13-6] (3) Water; H_2O; [7732-18-5]	Bergman, A.G.; Velikanova, L.V. *Zh. Neorg. Khim.* 1968, *13*, 1158-62.
VARIABLES: Temperature and composition.	**PREPARED BY:** J. Eysseltová

EXPERIMENTAL VALUES:

Temperature and composition of invariant points in the K_2HPO_4-$CO(NH_2)_2$-H_2O system.

	K_2HPO_4		urea		H_2O	
t/°C.	mass%	mol/kg[a]	mass%	mol/kg[a]	mass%	solid phases[b]
-19.7	27.3	2.62	13	3.62	59.7	A + B + E
-9.8	33.4	3.49	11.7	3.54	54.9	B + E + F
63	59.3	13.09	14.7	9.41	26	D + F + G
77.3	40.2	11.09	39	31.21	20.8	D + G + H
12	56.5	8.31	4.5	1.92	39	B + C + F
38.3	66.2	13.76	6.2	3.74	27.6	C + D + F

[a] The mol/kg H_2O values were calculated by the compiler.

[b] The solid phases are: A = ice; B = $K_2HPO_4 \cdot 6H_2O$; C = $K_2HPO_4 \cdot 3H_2O$; D = K_2HPO_4; E = α-urea; F = β-urea; G = γ-urea; H = δ-urea.

Solubility isotherms in the temperature range of -10 to +80°C are given in graphical form only.

Relative areas of the crystallization fields are: $K_2HPO_4 \cdot 6H_2O$-4.61%; ice-14.05%; $K_2HPO_4 \cdot 3H_2O$-1.51%; K_2HPO_4-31.73%; α-urea-3.73%; β-urea-17.33%; γ-urea-13.27%; δ-urea-13.77%.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Twelve parts of the system were studied by using a visual polythermic method. The cooling agent was solid carbon dioxide, either alone or with acetone.	No information is given.
	ESTIMATED ERROR: On the crystallization curves the temperature had a precision of ± 0.4°C. On the rest of the system it was ± 0.2°C.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dipotassium hydrogenphosphate; K_2HPO_4; [7758-11-4] (2) Urea; CH_4N_2O; [57-13-6] (3) Water; H_2O; [7732-18-5]	Bergman, A.G.; Dzuev, A.D. *Uch. Zap. Kabardino-Balkan. Univ., Ser. Sel.' -Khoz. Khim.-Biol.* 1969, 29, 40-4.
VARIABLES: Temperature and composition.	**PREPARED BY:** J. Eysseltová

EXPERIMENTAL VALUES:

The authors report that the crystallization surface in the K_2HPO_4-$CO(NH_2)_2$-H_2O system consists of ten fields: ice; four modifications of urea; three crystal forms of K_2HPO_4 (the hexahydrate, the trihydrate and the anhydrous form); and two ternary compounds (but these are not specified).

The eutectic temperature is -19°C. The composition of the eutectic point is: 28 mass% K_2HPO_4 (2.70 mol/kg H_2O -compiler); 12.5 mass% urea (3.50 mol/kg H_2O-compiler) and 59.5 mass% water.

The isotherms are given only in graphical form.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
A visual polythermic method was used. The disappearance and the appearance of the first crystals was observed. Solid CO_2 was used as the cooling agent.	Reagent grade K_2HPO_4 was dried at 170°C before use. Reagent grade urea was recrystallized from ethanol and had a melting point of 132.5°C.
	ESTIMATED ERROR: Nothing is stated.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dipotassium hydrogenphosphate; K_2HPO_4; [7758-11-4] (2) Potassium nitrate; KNO_3; [7757-79-1] (3) Water; H_2O; [7732-18-5]	Endovitskaya, M.R.; Vereshchagina, V.I. *Zh. Neorg. Khim.* 1972, *17*, 877-9.
VARIABLES: Temperature and composition.	**PREPARED BY:** J. Eysseltová

EXPERIMENTAL VALUES:

Composition and crystallization temperature of invariant points in the K_2HPO_4-KNO_3-H_2O system.

	K_2HPO_4		KNO_3		H_2O	
t/°C.	mass%	mol/kg[a]	mass%	mol/kg[a]	mass%	solid phase[b]
31.5	31.5	3.28	13.5	2.42	55	B + D + E
-8	19.5	1.49	5.5	1.49	75	A + B + F
-11	38	3.69	3	0.50	59	B + C + D
-14	38	3.60	1.5	0.24	60.5	B + C + F

[a] The mol/kg H_2O values were calculated by the compiler.

[b] The solid phases are: A = α-KNO_3; B = β-KNO_3; C = $K_2HPO_4 \cdot 6H_2O$; D = $K_2HPO_4 \cdot 3H_2O$; E = K_2HPO_4; F = ice.

Some of the data in the article are given only in graphical form.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
A visual polythermic method was used. Solid carbon dioxide served as the cooling agent.	No information is given.
	ESTIMATED ERROR: The temperature had a precision of ± 0.1°C.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dipotassium hydrogenphosphate; K_2HPO_4; [7758-11-4] (2) Potassium chloride; KCl; [7747-40-7] (3) Water; H_2O; [7732-18-5]	Mráz, R.; Srb, V.; Tichý, S.; Vosolsobě, J. *Chem. Prům.* 1976, *26*, 511-4.
VARIABLES: Temperature and composition.	**PREPARED BY:** J. Eysseltová

EXPERIMENTAL VALUES:

Solubility isotherms in the K_2HPO_4-KCl-H_2O system.

K_2HPO_4 mass%	K_2HPO_4 mol/kg[a]	KCl mass%	KCl mol/kg[a]	H_2O mass%	solid phase[b]
		temp. = 25°C.			
0	0	26.4	4.81	73.6	A
0	0	26.6	4.86	73.4	"
1.3	0.10	26.0	4.79	72.7	"
2.0	0.15	24.8	4.54	73.2	"
2.1	0.16	24.2	4.40	73.7	"
15.7	1.36	18.1	3.66	66.2	"
20.2	1.83	16.6	3.52	63.2	"
17.3	1.49	16.3	3.29	66.4	"
17.5	1.49	15.5	3.10	67.0	"
26.4	2.49	12.9	2.85	60.7	"
31.5	3.15	11.2	2.62	57.3	"
42.2	5.05	9.9	2.77	48.0	"
38.3	4.17	9.0	2.29	52.7	"
42.2	4.83	7.7	2.06	50.1	A + B
44.4	5.34	7.9	2.22	47.7	B
46.8	5.79	6.8	1.96	46.4	"
50.9	6.81	6.2	1.93	42.9	"
59.0	8.77	2.4	0.83	38.6	B + C
61.8	9.93	2.5	0.93	35.7	C
66.4	12.10	2.1	0.89	31.5	"
62.6	10.15	2.0	0.75	35.4	"
66.5	12.11	2.0	0.85	32.5	"

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AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Saturated solutions were prepared at a temperature about 5 K higher than that of the isotherm to be studied. The samples were equilibrated for 4 hours with constant stirring. After being quiescent for 1 hour the phases were separated from each other and samples were taken for analysis. Silver content was determined by the Volhard method. HPO_4^{2-} ions were precipitated with excess $Bi(NO_3)_3$ and the Bi^{3+} ions were back titrated with Komplexon III.	No information is given.
	ESTIMATED ERROR: The temperature was controlled to within ± 0.2 K. The accuracy of the analysis for hydrogenphosphate ions was at least ± 3%.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dipotassium hydrogenphosphate; K_2HPO_4; [7758-11-4]	Mráz, R.; Srb, V.; Tichý, S.; Vosolsobě, J.
(2) Potassium chloride; KCl; [7747-40-7]	*Chem. Prům.* 1976, *26*, 511-4.
(3) Water; H_2O; [7732-18-5]	

EXPERIMENTAL VALUES cont'd:

Solubility isotherms in the K_2HPO_4-KCl-H_2O system.

K_2HPO_4 mass%	K_2HPO_4 mol/kg[a]	KCl mass%	KCl mol/kg[a]	H_2O mass%	solid phase[b]
		temp. = 25°C.			
59.3	8.64	1.3	0.44	39.4	C
66.7	11.70	0.6	0.24	32.7	"
67.9	12.18	0.1	0.04	32.0	"
60.2	8.68	0	0	39.8	"
		temp. = 50°C.			
0	0	29.6	5.63	70.4	A
5.6	0.47	27.3	5.45	67.1	"
9.2	0.78	23.8	4.76	67.0	"
14.0	1.24	21.5	4.47	64.5	"
39.1	4.49	11.0	2.95	49.9	"
59.8	9.61	4.5	1.69	35.7	"
69.5	13.71	1.4	0.64	29.1	C
70.0	13.39	0	0	30.0	"
		temp. = 75°C.			
0	0	33.2	6.66	66.8	A
5.9	0.52	29.6	6.15	64.5	"
10.0	0.91	27.1	5.77	62.9	"
13.7	1.28	25.0	5.46	61.3	"
20.2	2.02	22.4	5.23	55.4	"
47.3	6.38	10.2	3.21	42.5	"
60.1	9.85	4.9	1.87	35.0	"
69.4	13.93	2.0	0.93	28.6	"
73.9	16.25	0	0	26.1	C

[a] The mol/kg H_2O values were calculated by the compiler.

[b] The solid phases are: A = KCl; B = $2KCl \cdot K_2HPO_4 \cdot 5H_2O$; C = K_2HPO_4.

The authors state that, in fields where salts other than KCl exist as equilibrium solid phases, the precision of the results is poor because of the high viscosity of the saturated solutions. For the same reason, the authors could not determine the composition of eutonic solutions at 50°C and 75°C. They estimate that these solutions contain about 3% KCl at 50°C and less than 2% KCl at 75°C.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dipotassium hydrogenphosphate; K_2HPO_4; [7758-11-4] (2) Potassium borate; KBO_2; [13709-94-9] (3) Water; H_2O; [7732-18-5]	Beremzhanov, B.A.; Voronina, L.V.; Savich, R.F. *Khim. Khim. Tekhnol. (Alma Ata)* 1978, 29-36.
VARIABLES: Composition at 25° and 50°C.	**PREPARED BY:** J. Eysseltová

EXPERIMENTAL VALUES:

Solubility in the K_2HPO_4-KBO_2-H_2O system at 25°C.

K_2HPO_4			KBO_2					
mass%	mol%	mol/kg[a]	mass%	mol%	mol/kg[a]	refr. index	pH	solid[b] phase
----	----	----	0.368[a]	0.081	0.045	1.441	14.0	A
86.03[a]	36.42	35.4	-----	-----	-----	1.380	9.45	B
67.13	17.25	11.74	0.056	0.032	0.020	1.421	10.12	C
56.35	11.68	7.43	0.117	0.051	0.032	1.423	10.81	"
49.49	9.27	5.64	0.152	0.059	0.036	1.424	11.15	"
45.57	7.95	4.82	0.176	0.064	0.039	1.426	11.76	"
44.59	7.55	4.64	0.211	0.075	0.046	1.428	12.85	"
44.10	7.50	4.55	0.257	0.076	0.056	1.430	13.48	A + C
27.93	3.86	2.23	0.281	0.075	0.047	1.431	13.49	"
15.68	1.89	1.07	0.298	0.073	0.042	1.432	13.50	"
14.21	1.66	0.95	0.295	0.074	0.042	1.432	13.52	"
12.25	1.42	0.80	0.304	0.075	0.042	1.433	13.54	"
11.27	1.21	0.73	0.316	0.076	0.043	1.433	13.58	"
10.78	0.99	0.70	0.323	0.077	0.044	1.434	13.64	"
6.86	0.77	0.42	0.328	0.077	0.043	1.434	13.81	"

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AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
The isothermal method was used but no details are given.	No information is given.
	ESTIMATED ERROR: No details are given.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Dipotassium hydrogenphosphate; K_2HPO_4; [7758-11-4]	Beremzhanov, B.A.; Voronina, L.V.; Savich, R.F.
(2) Potassium borate; KBO_2; [13709-94-9]	*Khim. Khim. Tekhnol.* (*Alma Ata*) 1978, 29-36.
(3) Water; H_2O; [7732-18-5]	

EXPERIMENTAL VALUES cont'd:

Solubility isotherm in the K_2HPO_4-KBO_2-H_2O system at 50°C.

K_2HPO_4			KBO_2					
mass%	mol%	mol/kg[a]	mass%	mol%	mol/kg[a]	refr. index	pH	solid phase[b]
----	----	----	0.369[a]	0.090	0.046	1.445	14.0	A
91.76[a]	53.50		-----	-----	-----	1.390	9.65	B
74.48	22.94	16.86	0.164	0.109	0.078	1.398	11.20	C
69.58	18.98	13.21	0.176	0.096	0.071	1.400	11.40	"
66.15	16.89	11.28	0.187	0.088	0.067	1.405	11.48	"
64.68	15.62	10.58	0.211	0.087	0.074	1.410	11.50	"
63.70	15.25	10.14	0.234	0.127	0.079	1.415	11.56	"
61.25	14.06	9.13	0.246	0.120	0.077	1.427	11.63	"
60.76	14.00	8.96	0.290	0.119	0.090	1.430	11.70	"
58.80	12.74	8.25	0.292	0.116	0.087	1.433	11.75	A + C
50.96	9.67	5.99	0.234	0.100	0.058	1.434	11.88	A
39.20	6.13	3.71	0.176	0.083	0.035	1.435	12.27	"
24.50	3.20	1.89	0.211	0.068	0.034	1.436	12.39	"
12.65	1.42	0.83	0.292	0.061	0.040	1.438	12.65	"
9.80	0.99	0.62	0.304	0.059	0.041	1.440	12.88	"
9.31	0.98	0.59	0.328	0.058	0.044	1.443	13.05	"
7.35	0.77	0.46	0.332	0.057	0.043	1.443	13.27	"
6.37	0.58	0.39	0.339	0.057	0.044	1.444	13.54	"
5.90	0.57	0.36	0.351	0.056	0.045	1.444	13.70	"
1.96	0.18	0.12	0.374	0.055	0.046	1.445	13.70	"

[a] These values were calculated by the compiler.

[b] The solid phases are: A = KBO_2; B = K_2HPO_4; C = $K_2HPO_4 \cdot 3H_2O$.