COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Trisodium phosphate; Na_3PO_4; [7601-54-9] (2) Water; H_2O; [7732-18-5]	Apfel, O. Dissertation, Technical University, Darmstadt, 1911.
VARIABLES:	**PREPARED BY:**
Temperature and Composition	J. Eysseltová

EXPERIMENTAL VALUES:

Composition of saturated solutions of Na_3PO_4 in water.

	PO_4^{3-}	Na_3PO_4 [a]		
t/°C	mol/kg sln	mass%	mol/kg	solid phase [b]
0	0.26	4.27	0.27	A
25	0.75	12.31	0.86	"
37	0.98	16.08	1.17	B
40	1.02	16.74	1.23	"
44	1.09	17.89	1.33	"
50	1.38	22.65	1.78	B + C [c]
55	1.595	26.18	2.16	C
65	1.84	30.20	2.64	"
70	1.99	32.66	2.96	"
75	2.14	35.12	3.30	"

[a] These values were calculated by the compiler.

[b] The solid phases are: A = $Na_3PO_4 \cdot 12H_2O$; B = $Na_3PO_4 \cdot 10H_2O$; C = $Na_3PO_4 \cdot 8H_2O$.

[c] The octahydrate is said to exist in the region 50 to 75°C "with great probability".

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
All the experiments were performed in a water thermostat. The attainment of equilibrium was checked by repeated analysis of the liquid phase. The liquid phase was separated from the solid phase by filtration through a mat of platinum wires. Phosphate was precipitated as $NH_4MgPO_4 \cdot 6H_2O$ and weighed as $Mg_2P_2O_7$. Sodium was determined as Na_2SO_4 after phosphoric acid had been removed as lead phosphate.	Nothing given.
	ESTIMATED ERROR: Nothing given.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Trisodium phosphate; Na_3PO_4; [7601-54-9]	Schroeder, W.C.; Berk, A.A.; Gabriel, A.
(2) Water; H_2O; [7732-18-5]	*J. Am. Chem. Soc.* 1937, 59, 1783-90.
VARIABLES:	PREPARED BY:
Temperature and Composition	J. Eysseltová

EXPERIMENTAL VALUES:

Solubility of Na_3PO_4 in water at 83 to 350°C.

	concn of Na_3PO_4			
t/°C	g(1)/100 g(2)	mass% [a]	mol/kg [a]	time/h [b]
83	61.1	37.93	3.72	39
83	62.2	38.35	3.79	39
101	78.4	43.95	4.78	43
101	76.8	43.44	4.68	43
115	88.6	46.98	5.40	48
115	90.3	47.45	5.50	48
115	89.8	47.31	5.47	48
121	93.2	48.24	5.68	86
129	91.1	47.67	5.55	45
129	89.3	47.17	5.44	45
139	88.2	46.85	5.37	39
139	88.7	47.00	5.40	39
139	88.8	47.03	5.41	39
150	83.9	45.62	5.11	16
150	79.8	44.38	4.86	16
150	83.1	45.38	5.06	44
150	78.9	44.10	4.81	44
150	82.2	45.12	5.01	44
150	84.1	45.68	5.12	18
150	78.6	44.01	4.79	18
159	76.0	43.18	4.63	66

(continued next page)

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Self-constructed high temperature solubility bomb with sampler ensuring the sampling at the operating temperature. The time of equilibration varied from case to case, because of the difficulty in attaining true equilibrium. Phosphate determinations were made by a colorimetric method using aminonaphtholsulfonic acid (1).

SOURCE AND PURITY OF MATERIALS:

Merck CP $Na_3PO_4 \cdot 12H_2O$ was used. The actual phosphate content of this material was determined by analysis but the results are not given. In some cases the dodecahydrate was dried at 120°C to give approximately the monohydrate or it was recrystallized at 250°C to give the anhydrous salt.

ESTIMATED ERROR:

Phosphate determination: the error not greater than 1%.

REFERENCES:

1. Fiske, C.H.; Subbarow, J.T.
J. Biol. Chem. 1925, *66*, 375.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Trisodium phosphate, Na_3PO_4; [7601-54-9]	Schroeder, W.C.; Berk, A.A.; Gabriel, A.
(2) Water; H_2O; [7732-18-5]	*J. Am. Chem. Soc.* 1937, 59, 1783-90.

EXPERIMENTAL VALUES cont'd:

Solubility of Na_3PO_4 in water at 83 to 350°C.

		concn of Na_3PO_4		
t/°C	g(1)/100 g(2)	mass% [a]	mol/kg [a]	time/h [b]
169	71.9	41.83	4.38	47
169	70.2	41.24	4.28	47
185	66.2	39.83	4.03	48
185	65.0	39.39	3.96	48
187	63.1	38.69	3.84	67
187	62.0	38.27	3.78	67
204	62.0	38.27	3.78	71
204	60.8	37.81	3.70	71
214	50.0	33.33	3.05	90
214	50.8	33.69	3.09	90
216	48.8	32.80	2.97	65
216	47.6	32.25	2.90	65
225	25.2	20.13	1.54	15
225	33.7	25.20	2.05	15
225	27.3	21.44	1.66	18
225	27.8	21.75	1.69	18
235	17.9	15.18	1.09	17
250	8.6	7.92	0.52	17
250	8.6	7.92	0.52	17
250	8.5	7.83	0.52	17
300	2.4	2.34	0.15	18
350	0.15	0.15	0.01	19

[a] These values were calculated by the compiler.

[b] This is the time allowed for equilibration.