COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Disodium hydrogenphosphate; Na_2HPO_4; [7558-79-4] (2) 2-Propanone (acetone); C_3H_6O; [67-64-1] (3) Water; H_2O; [7732-18-5]	Ferroni, G.; Galea, J.; Antonetti, G. *Bull. Soc. Chim. Fr.* 1974, *12*, Pt. 1, 273-81.
VARIABLES: Composition at 25°C.	**PREPARED BY:** J. Eysseltová

EXPERIMENTAL VALUES:

A miscibility gap was found in the system. The following data are for the isothermal binodal curve at 25°C.

upper layer				lower layer				
density g/cm^3	Na_2HPO_4 mass%	C_3H_6O mass%	H_2O mass%	density g/cm^3	Na_2HPO_4 mass%	C_3H_6O mass%	H_2O mass%	solid phase[a]
0.7922	~0	100	0	----	----	----	----	A
0.793	~10^{-7}	95.60	4.40	----	----	----	----	B
0.821	~10^{-6}	84.30	15.70	----	----	----	----	"
0.8331	~10^{-6}	75.79	24.21	1.328	40.02	1.24	58.74	C
0.8612	0.043	61.29	38.47	1.311	38.75	2.04	59.21	"
0.9097	0.602	38.97	60.93	1.321	38.52	1.98	59.50	"
0.9524	2.170	23.84	73.99	1.307	38.21	1.58	60.21	"
				1.304	37.21	----	62.79	"

[a] The solid phases are: A = Na_2HPO_4; B = $Na_2HPO_4 \cdot 2H_2O$; C are supersaturated solutions which solidified when seeded.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
The samples were stirred in a thermostat for 48 hours. The equilibration was done in the dark. The HPO_4^{2-} ion content was determined by a pH titration after evaporating the sample to dryness and dissolving the residue in bidistilled water. The 2-propanone content was determined iodometrically.	Merck reagent grade Na_2HPO_4 was dehydrated at 100°C and stored in a vacuum over NaOH. BLB reagent grade 2-propanone was used. The water was distilled twice and deaerated.
	ESTIMATED ERROR: The temperature was held within ± 0.1 K. The analyses had a precision of 0.5%.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Disodium hydrogenphosphate; Na_2HPO_4; [7558-79-4] (2) Sodium perchlorate; $NaClO_4$; [7601-89-0] (3) 2-Propanone (acetone); C_3H_6O; [67-64-1] (4) Water; H_2O; [7732-18-5]	Ferroni, G.; Galea, J.; Antonetti, G. *Bull. Soc. Chim. Fr.* 1974, *12*, Pt. 1, 273-81.
VARIABLES:	**PREPARED BY:**
Two concentrations of $NaClO_4$ at 25°C.	J. Eysseltová

EXPERIMENTAL VALUES:

Composition of saturated solutions of Na_2HPO_4 in aqueous $NaClO_4$ at 25°C.

C_{NaClO_4}/mol dm^{-3}	concn H_2O[b]	$C_{Na_2HPO_4}$/mol dm^{-3}	solid phase[a]
1	100	0.805	A
"	90.9	0.050	binodal curve
"	83.3	0.023	" "
"	66.7	0.0011	" "
"	50.0	0.33×10^{-3}	A
"	33.3	$\sim 6.9 \times 10^{-5}$	B
"	9.1	$\sim 1.5 \times 10^{-6}$	"
"	0.0	$<10^{-7}$	C
3	100	0.201	A
"	90.9	0.013	"
"	83.3	0.0048	"
"	66.7	1.17×10^{-3}	"
"	50.0	0.84×10^{-4}	"
"	33.3	$\sim 1.9 \times 10^{-6}$	B
"	9.1	$\sim 3.3 \times 10^{-7}$	"
"	0.0	$<10^{-7}$	C

[a] The solid phases are A = $Na_2HPO_4 \cdot 12H_2O$; B is probably $Na_2HPO_4 \cdot 2H_2O$; C = Na_2HPO_4.

[b] The concentration unit is: mol/100 mol of solvent.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
The samples were stirred in a thermostat for 48 hours. Equilibration was done in the dark. The HPO_4^{2-} ion concentration was determined by an automatic potentiometric titration after evaporating the sample to dryness and dissolving the residue in bidistilled water. The 2-propanone content was determined iodometrically.	Merck reagent grade Na_2HPO_4 was dehydrated at 100°C and stored over NaOH in a vacuum. The $NaClO_4$ was reagent grade. The water was bidistilled and deaerated. BLB reagent grade 2-propanone was used.
	ESTIMATED ERROR: The temperature was controlled to within ± 0.1 K. The analyses had a precision of ± 0.5%.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Disodium hydrogenphosphate; Na_2HPO_4; [7558-79-4] (2) Methanol; CH_4O; [67-56-1] (3) Water; H_2O; [7732-18-5]	Bruder, K.; Vohland, P.; Schuberth, H. *Z. Phys. Chem. (Leipzig)* 1977, *4*, 721-9.
VARIABLES: Composition at 60°C.	**PREPARED BY:** J. Eysseltová

EXPERIMENTAL VALUES:

Part 1. Solubility in the CH_4O-H_2O-Na_2HPO_4 system at 60°C.

CH_3OH conc[a]	Na_2HPO_4 mol%	Na_2HPO_4 mass%[b]	CH_3OH conc[a]	Na_2HPO_4 mol%	Na_2HPO_4 mass%[b]
0.000	0.0918	44.39	0.313[c]	0.0045	2.79
0.040	0.0710	36.92	0.400	0.00204	1.22
0.050	0.0672	35.38	0.500	0.00080	0.453
0.100	0.0488	27.32	0.600	0.00021	0.113
0.150	0.0295	17.69	0.700	0.00011	0.0562
0.191	0.0130	8.30	0.800	0.000076	0.0369
0.200	0.0114	7.30	0.900	0.000060	0.0278
0.300	0.0047	2.93	0.950	0.000055	0.0249
			1.000	0.000054	0.0240

Part 2. The miscibility gap (conjugated solutions) in the CH_4O-H_2O-Na_2HPO_4 system.

CH_3OH conc[a]	Na_2HPO_4 mol%	Na_2HPO_4 mass%[b]	CH_3OH conc[a]	Na_2HPO_4 mol%	Na_2HPO_4 mass%[b]
0.040	0.071	36.92	0.191	0.013	8.30
0.073	0.051	28.65	0.124	0.032	19.23
0.097[d]	0.041	23.89			

[a] The concentration unit is: mol/100 mol of solvent.

[b] These values were calculated by the compiler.

[c] The point of transition of crystalline dihydrate into unsolvated salt.

[d] Critical solution.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Some mixtures were prepared by allowing the solid salt to equilibrate in the complex solvent. Other mixtures were prepared by adding methanol to aqueous solutions of Na_2HPO_4 until precipitation occurred. In all cases the liquid phase was evaporated to dryness and the residue was weighed. All data are designated as smoothed. No details are given about the computational procedure.

SOURCE AND PURITY OF MATERIALS:

The water was distilled twice. The methanol was obtained by rectification (n_D^{20} = 1.3286, d^{20} = 0.7913, b.p. = 64.6°C). The $Na_2HPO_4 \cdot 10H_2O$, a product of VEB Laborchemie Apolda, was dried by the method suggested by Menzies (1). The analysis by a Karl Fischer titration gave the water content as 0.04%.

ESTIMATED ERROR:

No details are given.

REFERENCES:

1. Menzies, A.W.; Humphrey, E.C. *C. R. Congr. Int. Appl. Electrocat. Electrochim.* 1912, *2*, 175.