COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Rubidium nitrate; $RbNO_3$; [13126-12-0] (2) Rubidium chlorate; $RbClO_3$; [13446-71-4] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kuzina, V.A.; Tsibulevskaya, T.A. *Zh. Neorg. Khim.* 1976, *21*, 2868-70; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1976, *21*, 1583-4.
VARIABLES: T/K = 298.2 Composition	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

Rubidium Chlorate mass %	Rubidium Chlorate mol % (compiler)	Rubidium Nitrate mass %	Rubidium Nitrate mol % (compiler)	$RbNO_3/RbClO_3$ distrib coeff	Nature of the solid phase[a]
6.21[b]	0.701	-	-	-	A
5.44	0.629	3.33	0.441	0.008	C
5.05	0.600	6.58	0.896	0.008	"
4.63	0.555	7.92	1.088	0.009	"
3.94	0.479	9.91	1.379	0.008	"
3.88	0.476	11.04	1.553	0.008	"
3.84	0.485	13.78	1.993	0.007	"
3.75	0.482	15.63	2.302	0.008	"
3.45	0.452	17.62	2.643	0.009	"
3.33	0.449	20.36	3.142	0.008	"
3.01	0.419	23.66	3.776	0.008	"
2.85	0.414	27.36	4.551	0.008	"
2.79	0.420	30.46	5.258	0.008	"
2.55	0.409	35.50	6.516	0.009	"
2.57	0.431	38.82	7.453	-	D
2.57	0.431	38.82	7.453	-	"
1.76	0.293	39.19	7.477	-	B
-	-	40.21	7.592	-	"

[a] A = $RbClO_3$; B = $RbNO_3$; C = solid solution based on $RbClO_3$;
D = solid solution based on $RbClO_3$ + $RbNO_3$

[b] For the binary system the compiler computes the following:
soly of $RbClO_3$ = mol kg^{-1}

AUXILIARY INFORMATION

COMMENTS AND/OR ADDITIONAL DATA:

The distribution coefficients of rubidium nitrate in the chlorate in the range of crystallization of the solid solution were calculated from the equation

$$D_{RbNO_3/RbClO_3} = (x_1/y_1)\ (1 - y_1/(1-x_1))$$

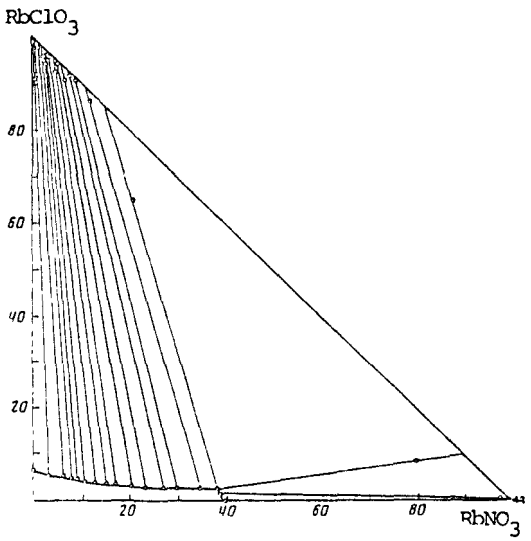
where x_1 is the mole fraction of rubidium nitrate in the solid phase, and y_1 the mole fraction of this component in the liquid phase. The results are given in the above table.

continued...

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Rubidium nitrate; $RbNO_3$; [13126-12-0] (2) Rubidium chlorate; $RbClO_3$; [13446-71-4] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kuzina, V.A.; Tsibulevskaya, T.A. *Zh. Neorg. Khim.* 1976, *21*, 2868-70; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1976, *21*, 1583-4.

COMMENTS AND/OR ADDITIONAL DATA: (Continued)

The phase diagram is given below (based on mass % units).



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Isothermal method. Equilibrium was reached in 20-30 days. Total anion concentration in the liquid phase detd by ion exchange, and chlorate detd by argentometric titrn after reduction to chloride. Nitrate was detd by difference. Specimens of the solid phase were analyzed for chlorate as described above, and for nitrate by reduction to ammonia using Devarda's alloy, volatilization, and colorimetric determination using Nessler's reagent. Solid phase compositions detd by the method of residues, and confirmed from X-ray diffraction patterns.	Highly pure grade $RbNO_3$ and $RbClO_3$ were used. No other information given.
	ESTIMATED ERROR: Soly: nothing specified. Temp: precision ± 0.1 K.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Rubidium chloride; RbCl; [7791-11-9] (2) Rubidium chlorate; $RbClO_3$; [13446-71-4] (3) Water; H_2O; [7732-18-5]	Arkhipov, S.M.; Kashina, N.I.; Revezina, T.V. *Zh. Neorg. Khim.* 1968, *13*, 587-8; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1968, *13*, 304.
VARIABLES: Composition T/K = 273, 298, 323	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions

t/°C	$RbClO_3$ mass %	$RbClO_3$ mol % (compiler)	RbCl mass %	RbCl mol % (compiler)	Nature of the solid phase[a]
0	2.12[b]	0.230	0.0	0.0	A
	1.41	0.155	1.95	0.299	"
	0.37	0.051	26.52	5.125	"
	0.29	0.048	42.12	9.821	"
	0.27	0.046	43.16	10.20	A+B
	0.28	0.047	43.11	10.18	"
	0.00	0.000	43.48	10.28	B
25	6.24[b]	0.705	0.0	0.0	A
	5.76	0.651	0.66	0.10	"
	5.36	0.608	1.40	0.222	"
	4.99	0.568	2.18	0.347	"
	4.63	0.529	3.00	0.479	"
	3.83	0.443	5.25	0.849	"
	3.27	0.385	7.70	1.27	"
	2.60	0.316	11.58	1.964	"
	1.91	0.247	18.43	3.324	"
	1.13	0.172	33.90	7.201	"
	0.83	0.15	48.18	12.32	A+B
	0.82	0.15	48.22	12.34	"
	0.34	0.062	48.50	12.37	B
	0.0	0.0	48.60	12.35	"

continued.....

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
The isothermal method was used. At 0°C, glass vessels with an oil seal were immersed in melting ice. At 25 and 50°C, test tubes were mounted in a thermostat with a special device for mixing. The test tubes were rotated at 60 rev min^{-1}, and equilibrium was reached in 10 hours. The liquid and solid phases were analyzed for ClO_3^- by adding an excess of $FeSO_4$ and back-titrating with potassium permanganate. The chloride content was determined by titration with silver nitrate solution with potassium chromate indicator. The composition of the solid phases was found by Schreinemakers' method of residues.	Rubidium chlorate and chloride used had a purity of 99.9 %.
	ESTIMATED ERROR: Nothing specified.
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Rubidium chloride; RbCl; [7791-11-9] (2) Rubidium chlorate; $RbClO_3$; [13446-71-4] (3) Water; H_2O; [7732-18-5]	Arkhipov, S.M.; Kashina, N.I.; Revezina, T.V. *Zh. Neorg. Khim.* 1968, *13*, 587-8; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1968, *13*, 304.

EXPERIMENTAL VALUES: (Continued)

Composition of saturated solutions

t/°C	$RbClO_3$ mass %	$RbClO_3$ mol % (compiler)	RbCl mass %	RbCl mol % (compiler)	Nature of the solid phase[a]
50	13.74[b]	1.670	0.0	0.0	A
	12.21	1.506	3.1	0.53	"
	5.22	0.734	22.92	4.503	"
	1.98	0.387	51.35	14.03	A+B
	1.99	0.390	51.40	14.06	"
	0.0	0.0	52.30	14.04	B

[a] A = $RbClO_3$; B = RbCl

[b] For the binary system the compiler computes the following:

soly of $RbClO_3$ = 0.128 mol kg^{-1} at 0°C

= 0.394 mol kg^{-1} at 25°C

= 0.9430 mol kg^{-1} at 50°C

COMMENTS AND/OR ADDITIONAL DATA:

The phase diagram for 25°C is given below (based on mass units).