COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Iodic acid; HIO_3; [7782-68-2] (3) Water; H_2O; [7782-18-5]	Shklovskaya, R.M.; Arkhipov, S.M. Kidyarov, B.I.; Mitnitski, P.L. *Izv. Sib. Otd. Akad. Nauk SSSR Ser. Khim. Nauk* 1976, (6), 89-91.
VARIABLES: T/K = 273 to 373 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES:

The solubility of lithium iodate in aqueous solutions containing 10 mass % HIO_3[a]

t/°C	solubility of $LiIO_3$	
	mass %	mol kg^{-1} (compiler)
0	45.07	4.512
10	45.30	4.554
20	43.62	4.255
25	43.53	4.239
30	42.91	4.133
40	42.83	4.120
50	42.70	4.098
60	42.52	4.068
70	42.19	4.013
80	42.1	4.00
90	41.1	3.84
100	42.19	4.013

[a]Initial composition of aqueous solution is 10 mass % HIO_3.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The compiler assumes that saturated solutions were prepared isothermally. Equilibrium was reached in 8 hours.

The iodate concentration of the saturated solutions was determined by titration with thiosulfate solution.

SOURCE AND PURITY OF MATERIALS:

"Chemically pure" grade $LiIO_3$ was used. The total amount of impurities did not exceed 0.001 %.

Iodic acid was prepared as described in ref (1).

ESTIMATED ERROR:

Nothing specified.

REFERENCES:

1. Vulikh, A.I.; Bogatyrev, V.L.; Kaz'minskaya, V.A.; Zherdienko, L.P. *Methody Polucheniya Khimcheskikh Reaktivov i Preparatov IREA, Vyp.* 16.M., S.5.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Ammonium iodate; NH_4IO_3; [13446-09-8] (3) Water; H_2O; [7732-18-5]	Tarasova, G.N.; Vinogradov, E.E.; Lepeshkov, I.N. *Zh. Neorg. Khim.* 1976, *21*, 3373-6; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1976, *21*, 1858-60.
VARIABLES: Composition at 298.2 K.	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	NH_4IO_3 mass %	NH_4IO_3 mol % (compiler)	Nature of the solid phase[a]
0.00	0.000	3.72[b]	0.359	A
1.13	0.116	2.79	0.270	"
9.14	1.001	1.48	0.153	A+C
9.35	1.026	1.47	0.152	"
9.28	1.083	1.50	0.155	"
9.17	1.005	1.46	0.151	"
9.34	1.026	1.50	0.155	"
19.48	2.344	0.12	0.014	C
37.21	5.557	0.15	0.021	"
37.93	5.721	0.16	0.023	"
42.27	6.769	0.06	0.009	"
41.92	6.692	0.19	0.029	C+B
42.14	6.735	0.05	0.008	"
43.90[b]	7.195	-	-	B

[a] A = NH_4IO_3; B = $LiIO_3$; C = $NH_4IO_3.2LiIO_3$

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

soly of $LiIO_3$ = 4.303 mol kg^{-1}

soly of NH_4IO_3 = 0.200 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Isothermal method used. Equilibrium was reached in 5-6 days. The liquid and solid phases were analyzed for Li^+ by the periodate method. Iodate was determined by titration with sodium thiosulfate in the presence of H_2SO_4 and KI and NH_4^+ was determined gravimetrically with sodium tetraphenyborate.

The composition and nature of the solid phases were found by use of Schreinemakers' method of residues, X-ray diffraction, thermography and infrared spectroscopy.

SOURCE AND PURITY OF MATERIALS:

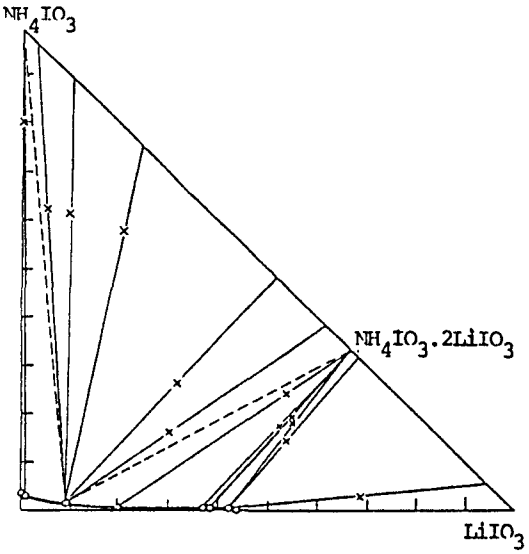
Lithium iodate was prepd from lithium carbonate and iodic acid. NH_4IO_3 was prepd by mixing a slight excess of NH_4OH with HIO_3 in water. The precipitate was then filtered and washed to remove the excess NH_3.

ESTIMATED ERROR:

Soly: nothing specified.
Temp: precision ± 0.1 K.

COMMENTS AND/OR ADDITIONAL DATA:

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



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium sulfate; Li_2SO_4; [13453-86-6] (2) Lithium iodate; $LiIO_3$; [13765-03-2] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Tsibulevskaya, K.A. *Zh. Neorg. Khim.* 1978, 23, 2565-6; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1978, 23, 1421-2.
VARIABLES:	PREPARED BY:
Composition at 298.2 K	Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$LiIO_3$		Li_2SO_4		Nature of the solid phase[a]
mass %	mol % (compiler)	mass %	mol % (compiler)	
43.82[b]	7.173	-	-	A
41.53	6.778	2.25	0.607	"
37.76	5.956	3.80	0.991	"
35.99	5.690	5.87	1.535	"
32.40	4.965	7.36	1.865	"
27.35	4.078	10.67	2.632	"
25.44	3.755	11.91	2.908	"
22.30	3.247	14.19	3.417	"
19.51	2.799	16.00	3.797	"
17.66	2.550	18.50	4.418	A+B
16.51	2.355	18.73	4.418	B
14.98	2.112	19.41	4.526	"
12.96	1.789	19.80	4.521	"
9.43	1.268	21.30	4.736	"
7.51	0.945	22.03	4.825	"
5.55	0.727	23.17	5.020	"
2.99	0.385	24.34	5.183	"
-	-	25.84	5.401	"

[a] A = α-$LiIO_3$; B = $Li_2SO_4.H_2O$

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Isothermal method used. Equilibrium was reached in 15-20 days.

Aliquots of liquid phases were analyzed for iodate by iodometric titration and for sulfate gravimetrically as barium sulfate. Before precipitating the sulfate ion, the aliquots were treated with hydroxylamine hydrochloride in acidic medium to reduce IO_3^-, after which iodine was removed by boiling the solution. The solid phases were identified by the method of residues, and X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:

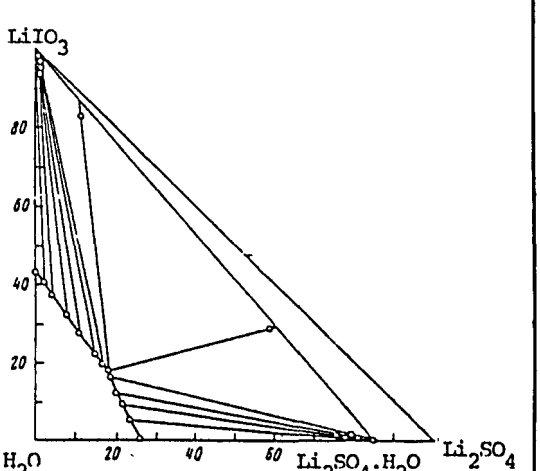
Highly pure grade α-$LiIO_3$ and lithium sulfate monohydrate were used.

ESTIMATED ERROR:

Soly: nothing specified.
Temp: precision ± 0.1 K.

COMMENTS AND/OR ADDITIONAL DATA:

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



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium chloride; LiCl; [7447-41-8] (2) Lithium iodate; $LiIO_3$; [13765-03-2] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Kuzina, V.A. *Zh. Neorg. Khim.* 1979, *24*, 203-6; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1979, *24*, 113-4.
VARIABLES: Composition at 298.2 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$LiIO_3$		LiCl		Nature of the solid phase[a]
mass %	mol % (compiler)	mass %	mol % (compiler)	
43.82[b]	7.173	-	-	A
39.58	6.147	0.96	0.64	"
32.34	4.662	3.73	2.31	"
20.08	2.600	9.37	5.203	"
12.58	1.543	13.77	7.247	"
6.96	0.831	18.77	9.617	"
3.37	0.407	25.91	13.42	"
2.04	0.255	32.82	17.59	"
1.97	0.251	35.61	19.46	"
1.90	0.243	35.94	19.68	A+C
1.95	0.250	36.60	20.15	C
1.70	0.218	36.96	20.34	C+D
0.89	0.115	39.11	21.67	D
0.71	0.093	41.03	23.01	"
0.52	0.069	42.99	24.42	"
0.39	0.052	44.68	25.67	"
0.33	0.044	45.16	26.03	D+B
-	-	45.51	26.19	B

[a] A = α-$LiIO_3$; B = LiCl; C = $LiIO_3.LiCl.H_2O$; D = $2LiIO_3.3LiCl.3H_2O$

[b] For the binary system the compiler computes the following:
soly of $LiIO_3$ = 4.289 mol kg^{-1}

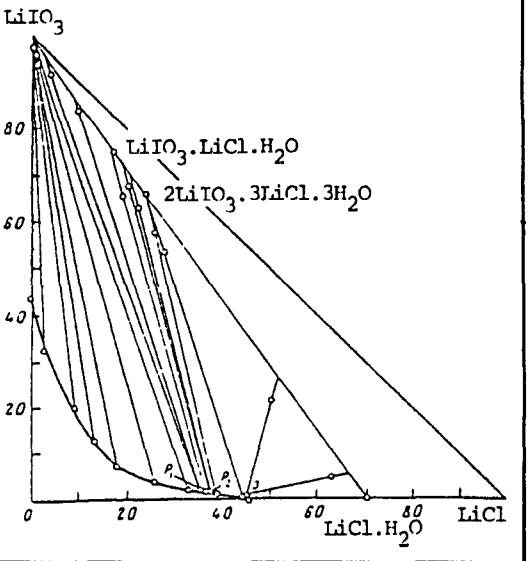
AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
The ternary system $LiIO_3$-LiCl-H_2O was studied by the isothermal method. Equilibrium was established in 20-30 days. Aliquots of the liquid phases were analyzed for lithium by ion exchange, and for iodate by iodometric titration. The chloride was determined by difference. The solid phases were identified by the method of residues, checked by X-ray diffraction, and thermographically.

SOURCE AND PURITY OF MATERIALS:
α-$LiIO_3$ and $LiCl.H_2O$ were of special purity grade.

ESTIMATED ERROR:
Soly: nothing specified.
Temp: precision ± 0.1 K.

COMMENTS AND/OR ADDITIONAL DATA:
The phase diagram based on mass % units is given below.



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium bromide; LiBr; [7550-35-8] (2) Lithium iodate; $LiIO_3$; [13765-03-2] (3) Water; H_2O; [7732-18-5]	Arkhipov, S.M.; Kashina, N.I.; Kidyarov, B.I.; Kuzina, V.A. *Zh. Neorg. Khim.* 1983, *28*, 2647-9; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1983, *28*, 1503-4.
VARIABLES: Composition at 298.2 K	PREPARED BY: Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	LiBr mass %	LiBr mol % (compiler)	Nature of the solid phase[a]
43.80[b]	7.168	-	-	A
36.40	5.521	2.39	0.759	"
33.51	5.103	6.00	1.913	"
26.40	3.864	10.77	3.301	"
17.10	2.427	18.66	5.545	"
6.39	0.915	31.66	9.497	"
3.34	0.501	39.01	12.25	"
2.13	0.340	45.33	15.13	"
1.86	0.303	47.25	16.10	A+B
1.46	0.239	48.01	16.43	B
0.86	0.145	51.07	18.03	"
0.65	0.113	53.50	19.47	"
0.40	0.071	55.60	20.75	"
0.32	0.058	56.47	21.32	"
0.18	0.034	59.58	23.49	B+C
0.17	0.032	59.90	23.73	C
0.14	0.027	60.40	24.09	"
0.15	0.029	61.04	24.59	C+D
-	-	61.55	24.93	D

[a] A = α-$LiIO_3$; B = $LiIO_3.LiBr.2H_2O$; C = $LiIO_3.2LiBr.4H_2O$; D = $LiBr.2H_2O$

[b] For the binary system the compiler computes the following: soly of $LiIO_3$ = 4.286 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Isothermal method used. Equilibrium was reached in 20-30 days. The lithium content was determined by ion exchange, and the iodate content was determined iodometrically. The bromide content was obtained by difference.

The bromide content in a sample of the liquid phase containing low concentration of iodate was determined by argentometric titration.

The composition of the solid phase was determined by the method of residues, and the result was checked by X-ray analysis.

SOURCE AND PURITY OF MATERIALS:

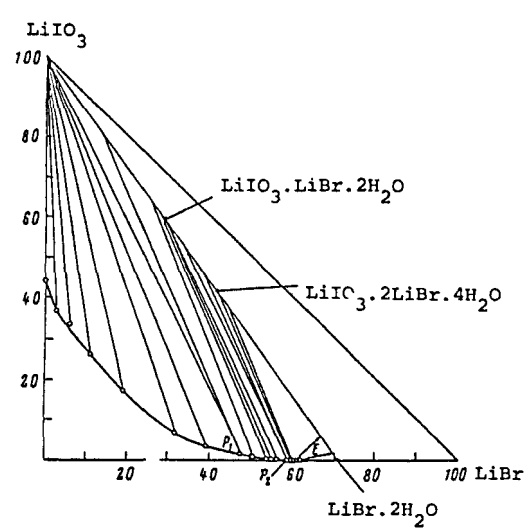
"Special purity" grade α-$LiIO_3$ and $LiBr.2H_2O$ were used.

ESTIMATED ERROR:

Soly: nothing specified.
Temp: precision ± 0.1 K.

COMMENTS AND/OR ADDITIONAL DATA:

Isotherm based on mass % units is reproduced below.



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodide; LiI; [10377-51-2] (2) Lithium iodate; $LiIO_3$; [13765-03-2] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M. Kidyarov, B.I.; Vdovkina, T.E.; Kuzina, V.A. *Zh. Neorg. Khim.* 1983, *28*, 2701-3; *Russ, J. Inorg. Chem. (Engl. Transl.)* 1983, *28*, 1533-4.
VARIABLES:	PREPARED BY:
Composition at 298.2 K	Hiroshi Miyamoto

EXPERIMENTAL VALUES:

Composition of saturated solutions				
$LiIO_3$		LiI		Nature of the solid phase
mass %	mol % (compiler)	mass %	mol % (compiler)	
43.82[b]	7.173	-	-	A
34.31	5.534	8.86	1.942	"
29.52	4.662	12.34	2.648	"
25.89	4.126	16.77	3.631	"
18.97	3.000	23.41	5.029	"
14.24	2.276	29.11	6.322	"
11.96	1.930	32.17	7.054	"
8.11	1.363	38.97	8.895	"
3.95	0.710	47.78	11.67	"
3.12	0.606	53.37	14.08	"
1.77	0.360	57.37	15.84	A+C
1.14	0.235	58.75	16.43	C
0.91	0.188	59.06	16.54	"
0.79	0.168	60.75	17.50	"
0.73	0.159	62.12	18.34	B+C
-	-	62.00	18.01	B

[a] A = α-$LiIO_3$; B = $LiI.3H_2O$; C = $3LiIO_3.2LiI.6H_2O$

[b] For the binary system the compiler computes the following:
soly = 4.289 mol kg^{-1}

AUXILIARY INFORMATION

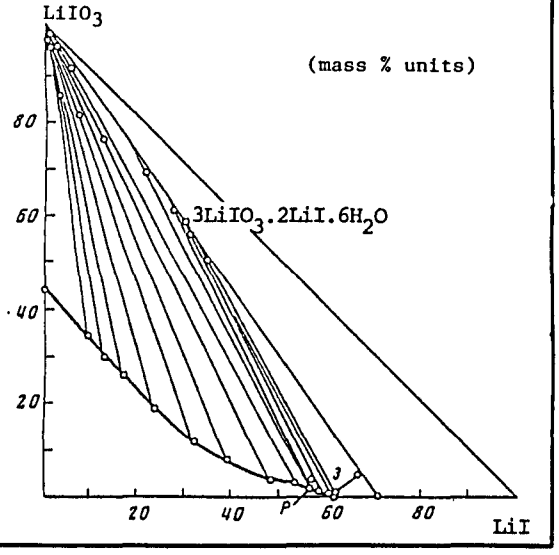
METHOD/APPARATUS/PROCEDURE:
Isothermal method used. Equilibrium was reached in 20-30 days. The iodate content in samples of coexisting phases was determined by iodometric titration. The iodide content in the liquid phase was determined by argentometric titration. The composition of solid phases was determined by the method of residues, and the result checked by X-ray analysis.

ESTIMATED ERROR:

Soly: nothing specified.
Temp: precision ± 0.1° K.

SOURCE AND PURITY OF MATERIALS:
"Special purity" grade α-$LiIO_3$ and analytical grade LiI were used

COMMENT AND/OR ADDITIONAL DATA:



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Sodium iodate; $NaIO_3$; [7681-55-2] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, E.I.; Mitnitskii, P.L. *Zh. Neorg. Khim.* 1974, *19*, 1975-6; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1974, *19*, 1082-3.
VARIABLES: Composition at 298.2 K	PREPARED BY: Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	$NaIO_3$ mass %	$NaIO_3$ mol % (compiler)	Nature of the solid phase[a]
43.82[b]	7.173	-	-	A
43.63	7.127	0.045	0.0068	"
41.90	7.008	3.32	0.510	A+B
38.75	6.160	3.05	0.446	B
32.56	4.808	3.94	0.535	"
30.87	4.413	3.17	0.416	"
26.96	3.707	4.03	0.509	"
24.58	3.285	4.11	0.505	"
18.97	2.374	4.11	0.473	"
14.09	1.680	4.63	0.507	"
10.22	1.177	5.27	0.558	"
6.237	0.6926	5.69	0.581	"
-	-	8.66[b]	0.856	"

[a] A = $LiIO_3$; B = $NaIO_3.H_2O$

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of $NaIO_3$ = 0.479 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
Solubility in the system was studied by the isothermal method. Equilibrium between the liquid and solid phases was established in 30 days.

The alkali metal content of the liquid and solid phases was determined by flame photometry, and iodate was estimated by a volumetric method. The compiler assumes that iodate content was determined iodometrically. The solid phases were identified by the method of residues, and by X-ray diffraction analysis.

SOURCE AND PURITY OF MATERIALS:
Chemically pure $LiIO_3$ and $NaIO_3$ were recrystallized twice from aqueous solutions.

ESTIMATED ERROR:
Soly: nothing specified.
Temp: precision ± 0.1 K.

REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Potassium iodate; KIO_3; [7758-05-6] (3) Water; H_2O; [7732-18-5]	Azarova, L.A.; Vinogradov, E.E.; Mikhailove, E.M.; Pakhomov, V.I. *Zh. Neorg. Khim.* 1973, *18*, 2559-63; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1973, *18*, 1357-60.
VARIABLES: Composition at 323.2 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 50.0°C.

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	KIO_3 mass %	KIO_3 mol % (compiler)	Nature of the solid phase[a]
0.00	0.000	13.08[b]	1.251	A
3.95	0.455	11.47	1.124	"
1.47	0.168	13.14	1.277	"
3.66	0.428	13.19	1.312	"
9.87	1.19	9.49	0.969	"
13.86	1.733	9.05	0.962	A+C
14.22	1.817	10.56	1.147	"
14.55	1.849	9.76	1.054	"
16.15	2.073	9.04	0.986	"
16.15	2.073	9.04	0.986	"
13.91	1.713	7.66	0.802	"
14.91	1.901	9.69	1.050	"
14.25	1.791	9.09	0.971	C
14.39	1.808	8.92	0.952	"
31.55	4.391	0.42	0.050	"
29.67	4.048	0.71	0.082	"
18.53	2.345	5.49	0.590	"
42.27	6.793	0.30	0.041	C+B
41.68	6.648	0.37	0.050	"
40.00	6.231	0.40	0.053	"
42.15	6.769	0.37	0.050	B
43.28[b]	7.028	0.00	0.000	"

[a] A = KIO_3; B = $LiIO_3$; C = $KIO_3.2LiIO_3$

[b] For binary systems, the compiler computes the following:
soly of $LiIO_3$ = 4.20 mol kg^{-1}, soly of KIO_3 = 0.703 mol kg^{-1}

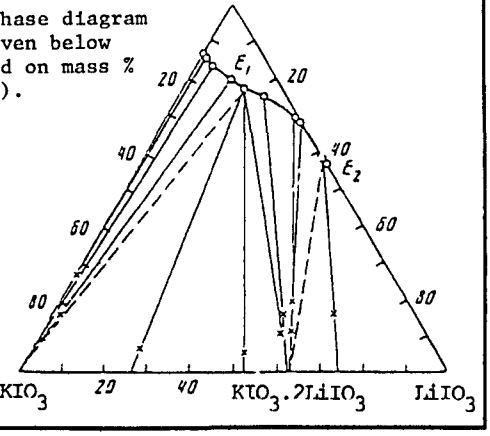
METHOD/APPARATUS/PROCEDURE:
Solubilities were determined isothermally at 50°C in a thermostated water bath. Equilibrium in the system was reached after continual stirring for 4-5 days.
The total IO_3^- content in the sample was found by iodometric titration. Lithium was determined by flame photometry and the periodate method. Potassium was determined with tetraphenylborate.

The composition and nature of the solid phases were determined by Schreinemakers' method, X-ray diffraction, thermography, infrared spectroscopy, and crystallography.

SOURCE AND PURITY OF MATERIALS:
C.p. grade potassium iodate used. Lithium iodate prepared from lithium carbonate and HIO_3. Purities checked by chemical and X-ray diffraction methods, however the results were not given.

ESTIMATED ERRORS:
Nothing specified.

COMMENTS AND/OR ADDITIONAL DATA:
The phase diagram is given below (based on mass % units).



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Potassium iodate; KIO_3; [7758-05-6] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Kashina, N.I.; Arkhipov, S.M.; Kuzina, V.A.; Kidyarov, B.I. *Zh. Neorg. Khim.* 1975, *20*, 783-5; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1975, *20*, 441-2.
VARIABLES: Composition at 298 K.	PREPARED BY: Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	KIO_3 mass %	KIO_3 mol % (compiler)	Nature of the solid phase[a]
0.00	0.000	8.39[b]	0.765	A
6.42	0.722	6.70	0.640	"
13.10	1.560	5.47	0.554	"
14.16	1.700	5.18	0.529	A+C
14.82	1.782	4.64	0.474	C
17.41	2.112	2.91	0.300	"
19.54	2.392	1.60	0.166	"
23.50	2.990	1.06	0.115	"
26.71	3.523	0.89	0.100	"
31.94	4.459	0.28	0.033	"
36.22	5.339	0.18	0.023	"
38.32	5.811	0.16	0.021	"
42.87	6.927	0.07	0.010	B+C
43.82[b]	7.173	0.00	0.000	B

[a] A = KIO_3; B = $LiIO_3$; C = $KIO_3.2LiIO_3$

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of KIO_3 = 0.428 mol kg^{-1}

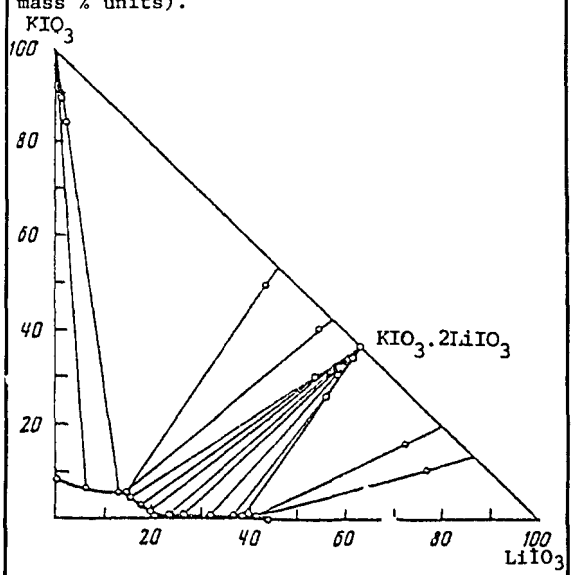
AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
The solubility in KIO_3-$LiIO_3$-H_2O system was studied by the isothermal method. Equilibrium was reached in 10 days. The iodate content in the liquid was determined iodometrically, and the potassium content detd gravimetrically as tetraphenylborate. Lithium concentrations were determined by difference, and in several instances by flame photometry. X-ray diffraction patterns were recorded.

SOURCE AND PURITY OF MATERIALS:
Chemically pure grade KIO_3 and $LiIO_3$ were used.

ESTIMATED ERROR:
Nothing specified.

COMMENTS AND/OR ADDITIONAL DATA:
The phase diagram is given below (based on mass % units).



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Rubidium iodate; $RbIO_3$; [13446-76-9] (3) Water; H_2O; [7732-18-5]	Karataeva, I.M.; Vinogradov, E.E. *Zh. Neorg. Khim.* 1974, *19*, 3156-60; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1974, *19*, 1726-9.
VARIABLES: Composition at 323 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 50°C

$LiIO_3$		$RbIO_3$		Nature of the solid phase[a]
mass %	mol % (compiler)	mass %	mol % (compiler)	
43.25[c]	7.020	-	-	A
39.40	6.062	0.12	0.013	"
36.23	5.341	0.17	0.018	A+C
36.27	5.351	0.19	0.020	"
36.17	5.336	0.28	0.029	C
33.48	4.780	0.48	0.048	"
25.90	3.386	0.94	0.086	"
27.20	3.598	0.64	0.059	"
26.11	3.419	0.88	0.080	"
25.05	3.246	1.04	0.0941	"
22.79	2.890	1.43	0.127	C+B[b]
22.71	2.876	1.40	0.124	"
22.72	2.877	1.40	0.124	"
22.64	2.864	1.37	0.121	"
19.10	2.318	1.23	0.104	B
11.98	1.353	1.61	0.127	"
11.72	1.323	1.81	0.143	"
5.11	0.542	2.11	0.156	"
1.74	0.181	3.59	0.261	"
0.57	0.059	4.19	0.303	"
-	-	4.39[b]	0.317	"

continued.....

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The compiler assumes that the isothermal method was used. Equilibrium between the liquid and solid phases was established in 14 days. The liquid and solid phases were analyzed for ions: Li^+ by the periodate method, Rb^+ gravimetrically with sodium tetraphenylborate, and IO_3^- by iodometric titration in sulfuric acid solution.

To determine the composition and nature of solid phases formed in the systems, the authors used Schreinemakers' method of wet residues, X-ray diffraction, thermography, and infrared spectroscopy.

SOURCE AND PURITY OF MATERIALS:

Lithium iodate was prepared from lithium carbonate and iodic acid. Although the purity of lithium iodate was checked by chemical, thermal and X-ray diffraction analyses, the results were not given. C.p. grade rubidium iodate was used.

ESTIMATED ERROR:

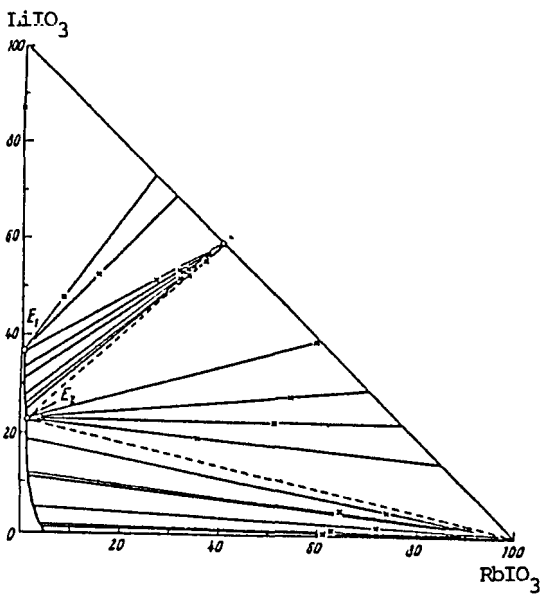
Nothing specified.

REFERENCES:

COMPONENTS:	EVALUATOR:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Rubidium iodate; $RbIO_3$; [13446-76-9] (3) Water; H_2O; [7732-18-5]	Karataeva, I.M.; Vinogradov, E.E. *Zh. Neorg. Khim.* 1974, *19*, 3156-60; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1974, *19*, 1726-9.

COMMENTS AND/OR ADDITIONAL DATA:

The phase diagram for 50°C is given below



EXPERIMENTAL VALUES (Continued)

[a] A = $LiIO_3$; B = $RbIO_3$; C = $2LiIO_3.RbIO_3$

[b] The compiler assumes that $2LiIO_3.RbIO_3.RbIO_3$ given in the original paper should read $2LiIO_3.RbIO_3 + RbIO_3$.

For the binary systems, the compiler computes the following:

soly of $LiIO_3$ = 4.191 mol kg^{-1}

soly of $RbIO_3$ = 0.176 mol kg^{-1}

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Rubidium iodate; $RbIO_3$; [13446-76-9] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Kashina, N.I.; Arkhipov, S.M.; Kuzina, V.A.; Kidyarov, B.I. *Zh. Neorg. Khim.* 1975, *20*, 783-5; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1975, *20*, 441-2
VARIABLES: Composition at 298 K.	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	$RbIO_3$ mass %	$RbIO_3$ mol % (compiler)	Nature of the solid phase[a]
0.00	0.000	2.36[b]	0.167	A
4.36	0.454	1.09	0.0793	"
10.58	1.168	0.75	0.058	"
15.88	1.849	0.67	0.054	"
21.15	2.603	0.47	0.040	A+C
25.65	3.314	0.23	0.021	C
30.57	4.188	0.148	0.0142	"
34.08	4.879	0.105	0.0105	"
38.37	5.814	0.067	0.0071	"
43.11	6.987	0.037	0.0042	B+C
43.82[b]	7.173	0.000	0.0000	B

[a] A = $RbIO_3$; B = $LiIO_3$; C = $RbIO_3.2LiIO_3$

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of $RbIO_3$ = 0.0928 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The solubility in $LiIO_3$-$RbIO_3$-H_2O system was studied by the isothermal method. Equilibrium was reached in 10 days. The iodate content in the liquid was determined iodometrically, and rubidium determined gravimetrically as the tetraphenyl borate. Lithium was determined by difference, and in several instances by flame photometry. X-ray diffraction patterns were recorded.

The composition of the solid phases were determined by the method of residues, and was checked by X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:

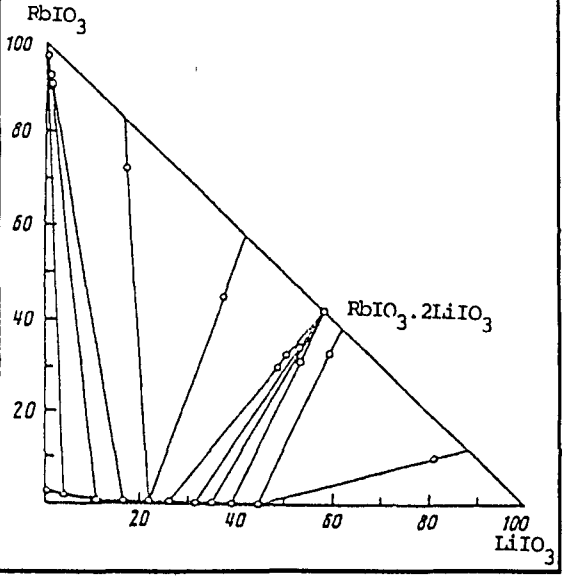
Chemical pure grade $LiIO_3$ and $RbIO_3$ were used.

ESTIMATED ERROR:

Nothing specified.

COMMENTS AND/OR ADDITIONAL DATA:

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



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Cesium iodate; $CsIO_3$; [13454-81-4] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, E.I.; Mitnitskii, P.L. *Zh. Neorg. Khim.* 1974, *19*, 1975-6; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1974, *19*, 1082-3.
VARIABLES: Composition at 298.2 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	mass %	mol % (compiler)	Nature of the solid phase[a]
43.82[b]	7.173	-	-	A
42.98	7.005	0.519	0.0500	"
42.52	6.896	0.647	0.0620	A+B
39.70	6.178	0.609	0.0560	B
36.45	5.423	0.610	0.0536	"
34.19	4.936	0.611	0.0521	"
32.36	4.562	0.611	0.0509	"
28.13	3.762	0.612	0.0484	"
24.98	3.217	0.612	0.0466	"
21.16	2.609	0.618	0.0450	"
15.35	1.777	0.640	0.0438	"
12.63	1.422	0.646	0.0430	"
8.103	0.8726	0.744	0.0473	"
4.59	0.479	1.006	0.06203	"
-	-	2.61[b]	0.157	"

[a] A = $LiIO_3$; B = $CsIO_3$

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of $CsIO_3$ = 0.0871 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Solubility in the system was studied by the isothermal method. Equilibrium between liquid and solid phases was established in 30 days.

Lithium content in samples of the liquid and solid phases were determined by flame photometry, and cesium was determined gravimetrically as the tetraphenylborate. The authors report that iodate was determined by volumetric method. The compiler assumes that this is an iodometric titration. The solid phases were identified by the method of residues, and by X-ray diffraction analysis.

SOURCE AND PURITY OF MATERIALS:

C.p. grade $LiIO_3$ and $CsIO_3$ were recrystallized twice from aqueous solutions.

ESTIMATED ERROR:

Soly: nothing specified.
Temp: precision ± 0.1 K.

REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Cesium iodate; $CsIO_3$; [13454-81-4] (3) Water; H_2O; [7732-18-5]	Karataeva, I.M.; Vinogradov, E.E. *Zh. Neorg. Khim.* 1974, *19*, 3156-60; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1974, *19*, 1726-9.
VARIABLES:	**PREPARED BY:**
Composition at 323 K	Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	$CsIO_3$ mass %	$CsIO_3$ mol % (compiler)	Nature of the solid phase[a]
43.29[b]	7.031	-	-	A
42.91	7.119	1.73	0.170	"
43.73	7.358	1.83	0.182	A+B
43.62	7.328	1.84	0.183	"
43.78	7.361	1.74	0.173	"
34.24	5.024	1.73	0.150	B
31.32	4.435	1.94	0.162	"
30.07	4.203	2.16	0.178	"
19.12	2.348	2.23	0.162	"
3.68	0.393	4.10	0.259	"
-	-	5.07[b]	0.312	"

[a] A = $LiIO_3$; B = $CsIO_3$

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

soly of $LiIO_3$ = 4.198 mol kg^{-1}

soly of $CsIO_3$ = 0.174 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The compiler assumes that the isothermal method was used. Equilibrium between the liquid and solid phases was established in 14 days. The liquid and solid phases were analyzed for ions: Li^+ by the periodate method, IO_3^- by iodometric titration in sulfuric acid solution, and Cs^+ by difference.

To determine the composition and nature of solid phases formed in this system, the authors used Schreinemakers' method of wet residues, X-ray diffraction, thermography and infrared spectroscopy.

SOURCE AND PURITY OF MATERIALS:

Lithium iodate was prepared from lithium carbonate and iodic acid. Although the purity of the lithium iodate was checked by chemical, thermal and X-ray diffraction analyses, the results were not given.

C.p. grade cesium iodate was used.

ESTIMATED ERROR:

Nothing specified.

REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium carbonate; Li_2CO_3; [554-13-2] (2) Lithium iodate; $LiIO_3$; [13765-03-2] (3) Water; H_2O; [7732-18-5]	Arkhipov, S.M.; Kashina, N.I.; Kidyarov, B.I. *Zh. Neorg. Khim.* 1982, 27, 539; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1982, 27, 306-7.
VARIABLES: Composition at 298.2 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

Li_2CO_3		$LiIO_3$		Nature of the solid phase[a]
mass %	mol % (compiler)	mass %	mol % (compiler)	
1.21	0.298	-	-	A
1.01	0.251	1.22	0.123	"
0.76	0.193	3.90	0.403	"
0.73	0.186	4.28	0.444	"
0.31	0.083	9.80	1.068	"
0.11	0.033	19.71	2.377	"
0.074	0.025	29.37	3.960	"
0.063	0.022	35.13	5.095	"
0.049	0.019	39.87	6.168	"
0.040	0.016	42.48	6.821	"
0.037	0.015	43.71	7.147	A+B
-	-	43.80[b]	7.168	B

[a] A = Li_2CO_3; B = $LiIO_3$

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

soly of $LiIO_3$ = 4.286 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
The isothermal method was used. Equilibrium was reached in 7 days. Samples of the liquid phase were analyzed for iodate by iodometric titration, and carbonate by back-titration using methyl red indicator. The compositions of the solid phases were determined by the method of residues and checked by X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:
"Special purity" grade α-lithium iodate and lithium carbonate were used.

ESTIMATED ERROR:
Soly: nothing specified.
Temp: precision ± 0.1 K.

REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium nitrate; $LiNO_3$; [7790-69-4] (2) Lithium iodate; $LiIO_3$; [13765-03-2] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I. *Zh. Neorg. Khim.* 1975 *20*, 1442-4; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1975, *20*, 811-2.
VARIABLES:	PREPARED BY:
Composition at 298 K.	Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	$LiNO_3$ mass %	$LiNO_3$ mol % (compiler)	Nature of the solid phase[a]
0.00	0.000	47.10	18.88	A
2.37	0.367	45.90	18.76	A+B
2.37	0.367	45.90	18.76	"
2.48	0.375	43.75	17.47	B
2.96	0.446	42.84	17.04	"
4.49	0.644	36.39	13.77	"
5.51	0.752	30.45	10.97	"
7.63	1.041	27.80	10.01	"
10.16	1.392	25.12	9.08	"
12.04	1.640	22.26	8.00	"
15.67	2.161	19.01	6.92	"
19.35	2.685	15.12	5.53	"
24.93	3.547	10.72	4.02	"
43.82[b]	7.173	0.00	0.00	"

[a] A = $LiNO_3.3H_2O$; B = $LiIO_3$

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

soly of $LiIO_3$ = 4.289 mol kg^{-1} at 25°C.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Equilibrium in the ternary system was reached isothermally after 10-15 days.

Specimens of the liquid and solid phases were analyzed volumetrically, presumably (compiler) iodometrically for the iodate, and gravimetrically for the nitrate ion with nitron as a precipitant.

SOURCE AND PURITY OF MATERIALS:

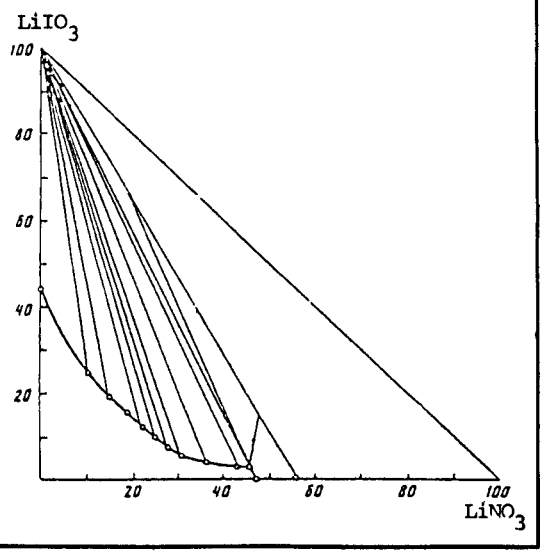
Chemically pure grade $LiIO_3$ and $LiNO_3$ were used.

ESTIMATED ERROR:

Nothing specified.

COMMENTS AND/OR ADDITIONAL DATA:

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



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium nitrate; $LiNO_3$; [7790-69-4] (2) Lithium iodate; $LiIO_3$; [13765-03-2] (3) Water; H_2O; [7732-18-5]	Vinogradov, E.E.; Karataeva, I.M. *Zh. Neorg. Khim.* 1976, *21*, 1664-6; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1976, *21*, 910-1.
VARIABLES: Composition at 323 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 50°C

$LiIO_3$		$LiNO_3$		Nature of the solid phase[a]
mass %	mol % (compiler)	mass %	mol % (compiler)	
43.25[b]	7.020	0.00	0.00	A
33.86	5.168	6.2	2.50	"
24.05	3.436	12.17	4.587	"
16.99	2.345	17.49	6.369	"
10.12	1.403	26.31	9.624	"
6.88	0.995	34.24	13.06	"
4.02	0.654	48.06	20.63	"
1.36	0.250	60.78	29.48	"
1.25	0.240	63.87	32.29	"
1.46	0.275	62.38	30.99	A+B
1.49	0.284	63.17	31.75	"
1.40	0.263	62.18	30.77	"
1.38	0.258	61.98	30.57	"
1.36	0.257	62.77	31.30	"
1.32	0.248	62.37	30.91	"
1.39	0.262	62.51	31.07	"
0.30	0.056	63.57	31.48	B
0.00	0.000	64.41	32.11	"

[a] A = $LiIO_3$; B = $LiNO_3$

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

soly of $LiIO_3$ = 4.191 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The method used was similar to that described in (1) (presumably an isothermal method: compiler). Equilibrium was reached in 14 days. The liquid and solid phases were analyzed for Li^+ by periodate method, and IO_3^- by titration with sulfuric acid and KI. Composition and nature of the solid phases determined by Schreinemakers' method of residues, X-ray diffraction, thermography, and IR spectroscopy.

SOURCE AND PURITY OF MATERIALS:

The compiler assumes that lithium iodate was prepd from lithium carbonate and iodic acid as described in (1). The source of $LiNO_3$ was not given.

REFERENCES:

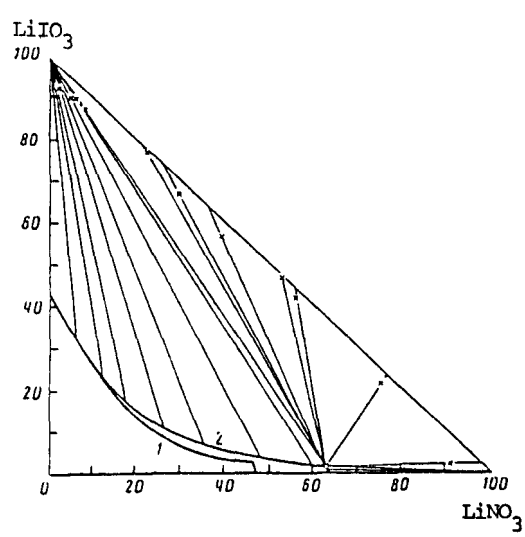
1. Karataeva, I.M.; Vinogradov, E.E. *Zh. Neorg. Khim.* 1974, *19*, 3156.

ESTIMATED ERROR:

Nothing specified.

COMMENTS AND/OR ADDITIONAL DATA:

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



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium phosphate; Li_3PO_4; [10377-52-3] (2) Lithium iodate; $LiIO_3$; [13765-03-2] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Vdovkina, T.E. *Zh. Neorg. Khim.* 1982, 27, 2985-6; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1982, 27, 1692-3.
VARIABLES: Composition at 298.2 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	Li_3PO_3 mass %	Li_3PO_3 mol % (compiler)	Nature of the solid phase[a]
43.82[b]	7.173	-	-	A
43.67	7.133	0.0024	0.00062	A+B
42.01	6.697	0.0036	0.00090	B
38.96	5.948	0.0038	0.00091	"
35.14	5.094	0.0040	0.00091	"
32.23	4.500	0.0042	0.00092	"
29.53	3.986	0.0045	0.00095	"
27.50	3.622	0.0049	0.0010	"
24.33	3.087	0.0061	0.0012	"
21.02	2.569	0.0067	0.0013	"
16.22	1.882	0.0070	0.0013	"
13.05	1.465	0.0073	0.0013	"
10.08	1.098	0.0081	0.0014	"
5.20	0.541	0.0085	0.0014	"
-	-	0.036	0.056	"

[a] A = $LiIO_3$; B = Li_3PO_4

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Isothermal method used. Equilibrium was established after 15-20 days. The iodate content was determined iodometrically. The phosphate concn in solution was determined colorimetrically as the vanadomolybdophosphate complex, and in the residues by titration after dissolving the solid in acid. The composition of the solid phase was determined by the method of residues and checked by X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:

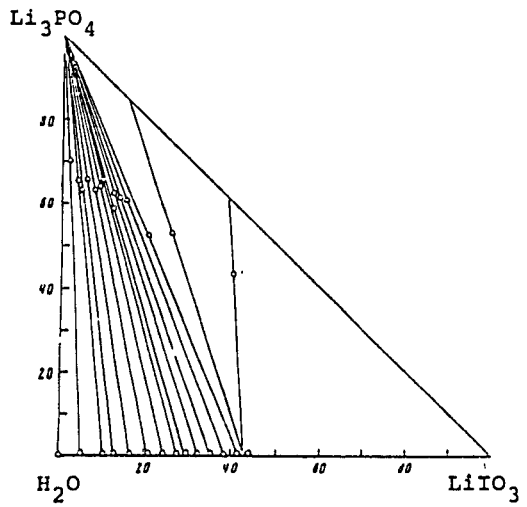
"Pure grade" lithium iodate and chemically pure grade lithium phosphate were used.

ESTIMATED ERROR:

Soly: nothing specified.
Temp: precision ± 0.1 K.

COMMENTS AND/OR ADDITIONAL DATA:

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



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13705-03-2] (2) Silver iodate; $AgIO_3$; [7783-97-3] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Vdovkina, T.E.; Poleva, G.V. *Zh. Neorg. Khim.* 1983, *28*, 2431-3; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1983, *28*, 1382-3.
VARIABLES: Composition at 298.2 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	$AgIO_3$ mass %	$AgIO_3$ mol % (compiler)	Nature of the solid phase[a]
-	-	0.0052	3.3×10^{-4}	A
7.48	0.795	0.00012	8.2×10^{-6}	SS
13.62	1.538	0.00067	4.9×10^{-5}	"
19.23	2.304	0.00062	4.8×10^{-5}	"
22.91	2.860	0.00059	4.7×10^{-5}	"
26.61	3.468	0.00056	4.7×10^{-5}	"
30.05	4.082	0.00052	4.5×10^{-5}	"
34.62	4.984	0.00050	4.6×10^{-5}	"
38.78	5.905	0.00048	4.7×10^{-5}	"
43.35	7.047	0.00047	4.9×10^{-5}	SS+B
43.35	7.047	0.00047	4.9×10^{-5}	"
43.82[b]	7.173	-	-	B

[a] A = $AgIO_3$ B = α-$LiIO_3$; SS = solid solution.

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of $AgIO_3$ = 1.8×10^{-4} mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Isothermal method used. Equilibrium was established after 25-30 days.
The iodate content in samples of coexisting phases was determined iodometrically, and the silver content in liquid phase was determined by atomic absorption.
The composition of solid phase was determined by the method of residues, and the result was checked by X-ray analysis.

SOURCE AND PURITY OF MATERIALS:

"Special purity" grade α-$LiIO_3$ was used.
Silver iodate was prepared by mixing aqueous silver nitrate and sodium iodate solutions.
The product contained Ag 37.98 mass % and IO_3 61.94 mass %, and the ratio IO_3/Ag = 1.01.
The X-ray diffraction pattern of the product was consistent with that in literature (ref 1).

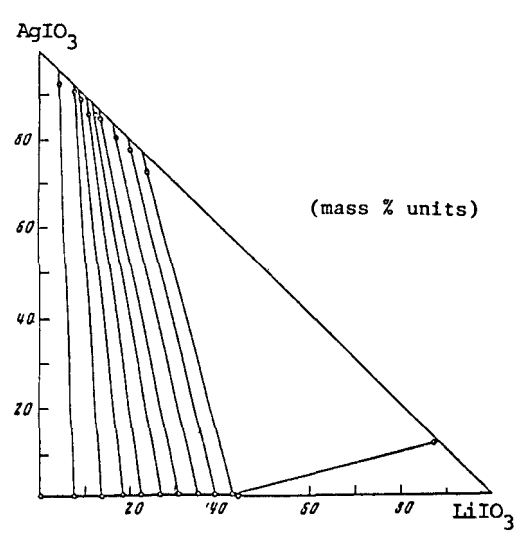
ESTIMATED ERROR:

Soly: 1-3 rel. %.
Temp: precision ± 0.1 K.

REFERENCES:

1. Rene, M.; Claude, G.J. *Solid State Chem.* 1980, *32*, 177.

COMMENT AND/OR ADDITIONAL DATA:



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Aluminum iodate; $Al(IO_3)_3$; [15123-75-8] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Kuzina, V.A; Poeva, G.V. *Zh. Neorg. Khim.* 1976, *21*, 3116-9; *Russ. J. Inorg. Chem.* (*Engl. Transl.* 1976, *21*, 1718-20.
VARIABLES:	**PREPARED BY:**
Composition at 298.2 K	Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	$Al(IO_3)_3$ mass %	$Al(IO_3)_3$ mol % (compiler)	Nature of the solid phase[a]
0.00	0.000	5.70[b]	0.197	A
4.91	0.526	3.16	0.112	"
8.18	0.893	1.96	0.0705	"
11.96	1.355	1.85	0.0691	"
15.71	1.841	1.37	0.0529	"
20.20	2.484	1.29	0.0523	"
24.73	3.203	1.26	0.0538	"
28.50	3.874	1.49	0.0668	"
30.48	4.249	1.53	0.0703	"
33.73	4.912	1.64	0.0787	"
39.00	6.150	2.11	0.110	"
40.96	6.678	2.41	0.130	A+B
40.96	6.678	2.41	0.130	"
42.18	6.840	0.94	0.0502	B
43.82[b]	7.173	0.00	0.0000	"

[a] A = $Al(IO_3)_2.6H_2O$; B = $LiIO_3$

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of $Al(IO_3)_3$ = 0.110 mol kg^{-1}

continued.....

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
The isothermal method used. Equilibrium was reached in 15-20 days. Aluminum content was determined by complexometric titration, lithium by flame photometry. The composition of the solid phases was determined by the method of residues, and checked by X-ray diffraction. The X-ray diffraction patterns were recorded on a URS-50-I diffractometer with Cu radiation. The IR spectra and thermogram were also recorded.

SOURCE AND PURITY OF MATERIALS:
Aluminum iodate was prepared at 80-90°C by neutralization of a saturated solution of iodic acid with an equivalent amount of freshly precipitated aluminum hydroxide. The solution was cooled to room temperature, and the solid dried and analyzed.
Found, mass %: Al 4.03; IO_3 78.7; H_2O 17.6.
Calcd. For $Al(IO_3)_3.6H_2O$, mass %: Al 4.09; IO_3 79.53; H_2O 16.38 (by difference).
"Very pure" grade $LiIO_3$ was used.

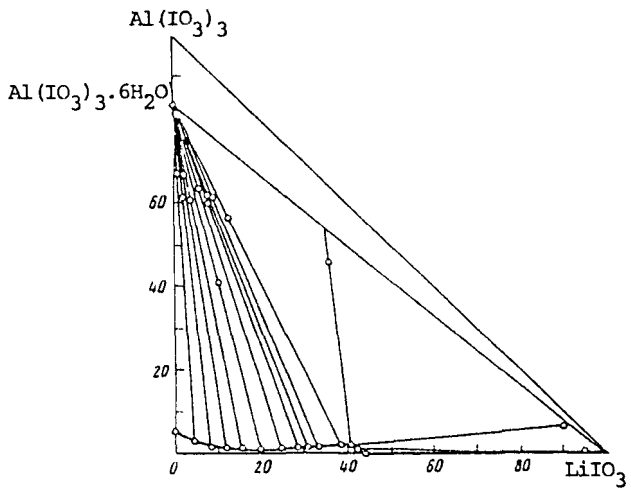
ESTIMATED ERROR:
Soly: error in flame photometry analysis did not exceed 1-3 rel %.
Temp: precision ± 0.1 K.

REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Aluminum iodate; $Al(IO_3)_3$; [15123-75-8] (3) Water; H_2O; [7732-18-5]	Shklovshaya, R.M.; Arkhipov, S.M. Kidyarov, B.I.; Kuzina, V.A.; Poleva, G.V. *Zh. Neorg. Khim.* 1976, *21*, 3116-9; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1976, *21*, 1718-20.

COMMENTS AND/OR ADDITIONAL DATA:

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



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
	ESTIMATED ERROR:
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Gallium iodate; $Ga(IO_3)_3$; [70504-12-0] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Tokareva, A.C.; Kuzina, V.A. *Zh. Neorg. Khim.* 1980, 25, 1112-6; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1980, 25, 618-9.
VARIABLES: Composition at 298.2 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	$Ga(IO_3)_3$ mass %	$Ga(IO_3)_3$ mol % (compiler)	Nature of the solid phase[a]
		0.85[b]	0.026	A
1.12	0.112	0.24	0.0074	B
2.49	0.253	0.13	0.0040	"
4.8	0.50	0.061	0.0019	"
6.57	0.692	0.040	0.0013	"
7.97	0.851	0.035	0.0011	"
10.99	1.209	0.032	0.0011	"
15.47	1.781	0.028	0.00099	"
17.35	2.038	0.030	0.0011	B+C
17.49	2.058	0.028	0.0010	C
19.78	2.385	0.029	0.0011	"
22.88	2.856	0.032	0.0012	"
25.16	3.225	0.035	0.0014	"
28.51	3.803	0.037	0.0015	"
32.98	4.651	0.041	0.0018	"
34.80	5.025	0.045	0.0020	"
36.37	5.363	0.052	0.0023	"
37.45	5.603	0.049	0.0022	C+D
37.61	5.640	0.051	0.0023	D
39.47	6.073	0.056	0.0026	"
42.57	6.848	0.064	0.0031	"

continued .....

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The investigation was carried out by the isothermal method. Equilibrium was reached in 25-30 days. Samples of the coexisting phases were analyzed for lithium by flame photometry. The photometry was carried out on solutions in which the lithium concentration did not exceed 10 μg ml^{-1}. The gallium content of liquid phases was determined by atomic absorption. Solutions for which the lithium and iodate ion concentrations range from 20 to 100 μg ml^{-1} do not influence the absorption of gallium. Analysis of these solutions was carried out by the restricted standards method with standard solutions based on gallium iodate. The solid phases were identified by the method of residues and checked by X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:

"Special purity" grade lithium iodate was used.
Gallium iodate was made by the reaction of gallium nitrate with iodic acid.

ESTIMATED ERROR:

Soly: rel. error 1-3 % (flame photometry) and 3-5 % (atomic absorption measurement).
Temp: precision ± 0.1 K.

REFERENCES:

COMPONENTS:	EVALUATOR:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Gallium iodate; $Ga(IO_3)_3$; [70504-12-0] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Tokareva, A.G.; Kuzina, V.A. *Zh. Neorg. Khim.* 1980, 25, 1112-6; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1980, 25, 618-9.

EXPERIMENTAL VALUES: (Continued)

Composition of saturated solutions

$LiIO_3$		$Ga(IO_3)_3$		Nature of the solid phase[a]
mass %	mol % (compiler)	mass %	mol % (compiler)	
42.87	6.927	0.066	0.0033	D+E
43.82[b]	7.173	-	-	E

[a] Solid phase compositions are:

A = $Ga(IO_3)_3.2H_2O$; B = solid solution based on $Ga(IO_3)_3.2H_2O$

C = $2Ga(IO_3)_3.LiIO_3.4H_2O$; D = $Ga(IO_3)_3.LiIO_3.2H_2O$; E = α-$LiIO_3$

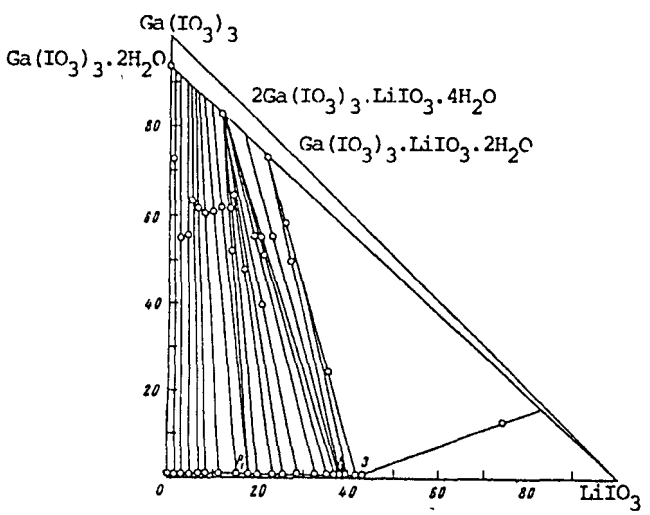
[b] For binary systems the compiler computes the following:

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of $Ga(IO_3)_3$ = 0.014 mol kg^{-1}

COMMENTS AND/OR ADDITIONAL DATA:

The phase diagram is given below.



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Indium iodate; $In(IO_3)_3$; [65597-32-2] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Poleva, G.A.; Kuzina, V.A. *Zh. Neorg. Khim.* 1981, *26*, 791-4; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1981, *26*, 425-7.
VARIABLES: Composition at 298.2 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	$In(IO_3)_3$ mass %	$In(IO_3)_3$ mol % (compiler)	Nature of the solid phase[a]
-	-	0.049[b]	0.0014	A
3.51	0.359	0.0080	0.00023	"
5.76	0.602	0.0075	0.00022	"
7.26	0.770	0.0070	0.00021	"
9.75	1.059	0.0065	0.00020	"
11.61	1.285	0.0060	0.00019	"
12.3	1.371	0.0070	0.00022	A+B
12.3	1.371	0.0070	0.00022	"
13.90	1.574	0.0074	0.00024	B
15.36	1.766	0.0087	0.00028	"
17.30	2.031	0.0084	0.00028	"
18.30	2.171	0.009	0.00030	B+C
18.30	2.171	0.009	0.00030	"
19.31	2.316	0.0083	0.00028	C
21.46	2.636	0.0068	0.00024	"
24.36	3.092	0.0038	0.00014	"
26.39	3.430	0.0033	0.00012	"
29.38	3.959	0.0021	0.000080	"
33.67	4.788	0.0020	0.000081	"
36.50	5.388	0.0019	0.000080	"
38.08	5.743	0.0018	0.000077	"
41.28	6.511	0.0017	0.000076	"

continued.....

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
Isothermal method. Equilibrium was established in 25-30 days.
Samples of satd sln and solids were analyzed for lithium by flame emission spectroscopy. The lithium content was detd by comparing the test solution with solutions containing only lithium. Indium in the liquid phase was detd by flame absorption spectrometry. The solid phases were identified by the method of "residues" and checked by X-ray diffraction. The thermographic investigation was carried out on an OD-102 derivatograph.

SOURCE AND PURITY OF MATERIALS:
"Special purity" grade lithium iodate was used, and indium iodate was made by reaction of indium nitrate with iodic acid.

ESTIMATED ERROR:
Soly: precision in lithium analysis $\leq$ 3 %.
Temp: precision $\pm$ 0.1 K.

REFERENCES:

COMPONENTS:	EVALUATOR:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Indium iodate; $In(IO_3)_3$; [65597-32-2] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Poleva, G.A.; Kuzina, V.A. *Zh. Neorg. Khim.* 1981, *26*, 791-4; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1981, *26*, 425-7.

EXPERIMENTAL VALUES (Continued)

Composition of saturated solutions at 25.0°C

$LiIO_3$		$In(IO_3)_3$		Nature of the solid phase[a]
mass %	mol % (compiler)	mass %	mol % (compiler)	
42.42	6.802	0.0028	0.00013	C+D
42.42	6.802	0.0028	0.00013	"
43.82[b]	7.173	-	-	D

[a] A = $In(IO_3)_3.H_2O$; B = $LiIO_3.In(IO_3)_3.H_2O$ C = $2LiIO_3.In(IO_3)_3.H_2O$; D = $LiIO_3$

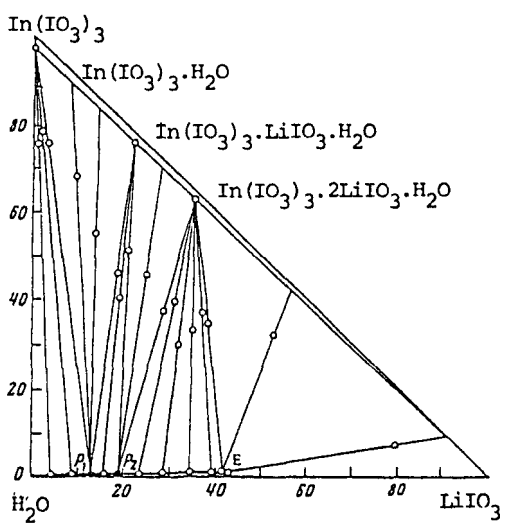
[b] For binary systems the compiler computes the following:

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of $In(IO_3)_3$ = 7.7 x 10^{-4} mol kg

COMMENTS AND/OR ADDITIONAL DATA:

The phase diagram is given below



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Thallium iodate; $TlIO_3$; [14767-09-0] (3) Water; H_2O; [7732-18-5]	Arkhipov, S.M.; Kashina, N.I.; Kidyarov, B.I.; Kuzina, V.A. *Zh. Neorg. Khim.* 1981, *26*, 1447-9; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1981, *26*, 779-80.
VARIABLES: Composition at 298.2 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$TlIO_3$ mass %	$TlIO_3$ mol % (compiler)	$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	Nature of the solid phase[a]
0.066[b]	0.0031	-	-	A
0.0030	0.00015	4.85	0.502	"
0.0019	0.000099	9.44	1.02	"
0.0025	0.00014	15.50	1.785	"
0.0029	0.00016	16.80	1.961	"
0.0040	0.00024	22.84	2.849	"
0.0058	0.00036	25.15	3.222	"
0.0070	0.00046	31.36	4.331	"
0.0072	0.00050	34.40	4.939	"
0.0075	0.00055	39.55	6.088	"
0.0094	0.00071	40.82	6.397	A+C
0.0092	0.00069	41.13	6.474	C
0.0090	0.00069	42.12	6.726	"
0.0091	0.00071	43.40	7.061	C+B
0.0063	0.00049	43.66	7.131	B
-	-	43.79[b]	7.165	"

[a] A = $TlIO_3$; B = $LiIO_3$; C = $LiIO_3.TlIO_3$

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

soly of $LiIO_3$ = 4.284 mol kg^{-1}

soly of $TlIO_3$ = 1.7 x 10^{-3} mol kg^{-1}

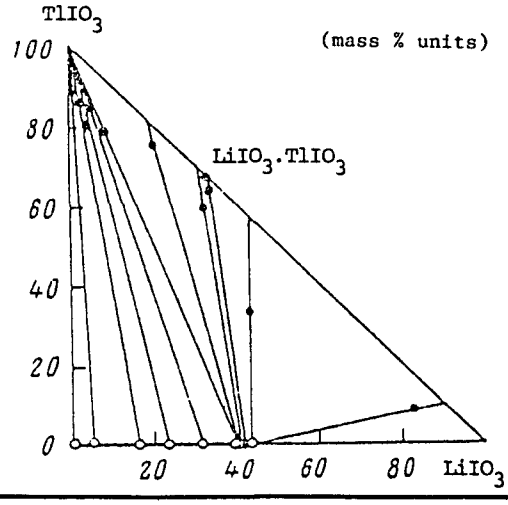
AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
Isothermal method used. Equilibrium was reached in 20 days. The iodate in samples of the liquid and solid phases with low $TlIO_3$ concentrations was detd by iodometric titration, and the thallium by flame emission photometry. The lithium concentration was obtained by difference. In samples of solid phases at higher $TlIO_3$ concentrations, the thallium was detd gravimetrically as the chromate, and lithium by flame emission photometry. The compositions of the solid phases were detd by the method of residues and X-ray diffraction.

ESTIMATED ERROR:
Soly: 0.3 rel % (samples of higher $TlIO_3$) and nothing specified (samples of lower $TlIO_3$).
Temp: precision ± 0.1 K.

SOURCE AND PURITY OF MATERIALS:
"Special purity" lithium iodate was used. Thallium iodate was made from thallium nitrate and lithium iodate.

COMMENTS AND/OR ADDITIONAL DATA:



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Titanium iodate; $Ti(IO_3)_4$; [73621-77-9] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Kuzina, V.A.; Vdovkina, T.E. *Zh. Neorg. Khim.* 1982, 27, 513-6; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1982, 27, 292-4.
VARIABLES:	**PREPARED BY:**
Composition at 298.2 K	Hiroshi Miyamoto

EXPERIMENTAL VALUES:

Composition of saturated solutions at 25.0°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	$Ti(IO_3)_3$ mass %	$Ti(IO_3)_3$ mol % (compiler)	Nature of the solid phase[a]
-	-	0.047[b]	0.00011	A
2.47	0.250	0.061	0.0015	B
4.95	0.514	0.22	0.0056	"
9.79	1.07	0.43	0.011	"
11.51	1.278	0.45	0.012	"
13.62	1.547	0.53	0.015	"
17.30	2.044	0.59	0.017	"
21.83	2.712	0.61	0.018	"
26.40	3.454	0.51	0.016	"
29.52	4.009	0.47	0.016	"
31.88	4.458	0.44	0.015	"
34.30	4.946	0.41	0.014	"
39.46	6.107	0.45	0.017	"
42.50	6.870	0.43	0.017	"
42.92	6.975	0.38	0.015	C
42.92	6.975	0.38	0.015	"
43.82[b]	7.173	-	-	D

[a] A = $Ti(IO_3)_4.2H_2O$; B = Solid solution based on $Ti(IO_3)_4.2H_2O$;

C = Solid solution + $LiIO_3$; D = $LiIO_3$

continued...

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Isothermal method used. Equilibrium was reached in 25-30 days. The iodate concentration in the coexisting phases was dedetermined iodometrically. The liquid phases were analyzed for tianium colorimetrically with chromotropic acid after preliminary reduction of the iodate ion with hydroxylammonium sulfate in an acidic medium followed by removal of iodine by evaporation of the solution. The lithium content was determined by difference, and also checked by flame emission spectrometry in the solutions after removal of titanium. The composition of the solid phases were determined by the method of Schreinemakers' resisues and checked by X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:

$Ti(IO_3)_4.2H_2O$ prepared by mixing freshly precipitated titanium hydroxide and a stoichiometric amount of 75 % iodic acid solution at 50 to 60°C. Purity of the product was reported as: found: Ti 6.12 %; IO_3 89.63 %; IO_3:Ti = 4.01.
calcd for $Ti(IO_3)_4.2H_2O$: Ti 6.11 %; IO_3 89.29 %.
Special purity grade lithium iodate was used.

ESTIMATED ERROR:

Soly: nothing specified.
Temp: precision ± 0.1 K.

REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Titanium iodate; $Ti(IO_3)_4$; [73621-77-9] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Kuzina, V.A.; Vdovkina, T.E. *Zh. Neorg. Khim.* 1982, 27, 513-6; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1982, 27, 292-4.

EXPERIMENTAL VALUES: (Continued)

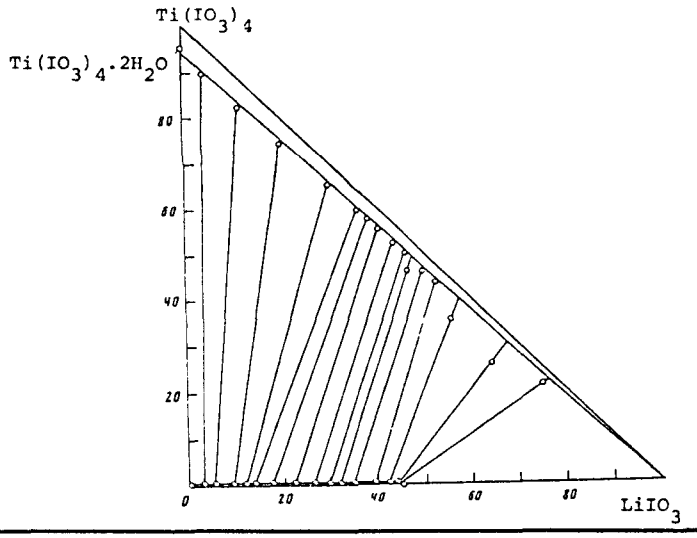
[b] For binary systems the compiler computes the following:

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of $Ti(IO_3)_4$ = 6.3 x 10^{-5} mol kg^{-1}

COMMENTS AND/OR ADDITIONAL DATA:

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



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
	ESTIMATED ERROR:
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Zirconium iodate; $Zr(IO_3)_4$; [22446-84-0] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Poleva, G.V.; Troitskaya, N.I. *Zh. Neorg. Khim.* 1982, 27, 257-8; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1982, 27, 145-6.
VARIABLES:	PREPARED BY:
Composition at 298.2K	Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

Lithium Iodate		Zirconium Iodate		Nature of the solid phase[a]
mass %	mol % (compiler)	mass %	mol % (compiler)	
-	-	0.0002[b]	0.05×10^{-4}	A
4.00	0.411	0.0026	0.61×10^{-4}	"
9.28	1.00	0.0060	1.5×10^{-4}	"
13.51	1.524	0.0087	2.3×10^{-4}	"
17.52	2.061	0.0092	2.5×10^{-4}	"
22.19	2.748	0.012	3.4×10^{-4}	"
28.06	3.721	0.017	5.2×10^{-4}	"
32.92	4.638	0.024	7.8×10^{-4}	"
38.16	5.766	0.058	2.0×10^{-3}	"
40.89	6.422	0.081	2.9×10^{-3}	"
43.54	7.108	0.092	3.5×10^{-3}	A+B
43.82[b]	7.173	-	-	B

[a] A = $Zr(IO_3)_4$; B = $LiIO_3$

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of $Zr(IO_3)_4$ = 3×10^{-6} mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
The system was studied by the isothermal method. Equilibrium was established after 15-20 days. Samples of the coexisting phases were analyzed for lithium by flame emission spectrometry. Zirconium concentrations >0.001 % in the samples of the liquid phase were determined gravimetrically by precipitation with mandelic acid; otherwise zirconium was determined photometrically with sodium hyposulfate.
The solid phases were identified by the method of residues, and checked by X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:
"Special purity" grade lithium iodate was used. Zirconium iodate was prepared as follows: freshly precipitated zirconium hydroxide was treated with 60-70 % iodic acid at room temperature, and the reaction mass diluted to an iodic acid concentration of 2-4 %. The product was heated to 60-80°C and dried. The purity of the product was given as follows:
Found, mass %: Zr 11.50; IO_3 89.1.
Molar ratio IO_3:Zr = 4.01:1.
Calcd for $Zr(IO_3)_4$, mass %: Zr 11.53; IO_3 88.47.
The X-ray diffraction pattern of the salt obtained corresponded to that for anhydrous zirconium iodate.

ESTIMATED ERROR:
Soly: rel. error in Li analysis 1-3 %.
Temp: nothing specified.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Hafnium iodate; $Hf(IO_3)_4$; [19630-06-9] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Tokareva, A.G. *Zh. Neorg. Khim.* 1981, *26*, 1701-2; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1981, *26*, 919-20.
VARIABLES: Composition at 298.2 K	PREPARED BY: Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	$Hf(IO_3)_4$ mass %	$Hf(IO_3)_4$ mol % (compiler)	Nature of the solid phase[a]
-	-	0.00037[b]	0.0000076	A
5.05	0.524	0.00060	0.000013	C
9.69	1.05	0.0011	0.000025	"
12.05	1.339	0.0025	0.000058	"
15.96	1.847	0.0065	0.00016	"
19.20	2.300	0.012	0.00030	"
22.70	2.828	0.014	0.00036	"
24.82	3.168	0.016	0.00042	"
27.62	3.644	0.019	0.00052	"
30.71	4.207	0.021	0.00060	"
32.39	4.533	0.025	0.00072	"
35.52	5.177	0.031	0.00094	"
39.34	6.040	0.035	0.0011	"
41.90	6.672	0.040	0.0013	"
43.33	7.049	0.063	0.0021	D
43.82[b]	7.173	-	-	B

[a] Solid phases are: A = $Hf(IO_3)_4$; B = $LiIO_3$;
C = solid solution based on $Hf(IO_3)_4$ D = solid solution based on $LiIO_3$ (assumed by the compiler)

[b] For binary systems the compiler computes the following:
soly of $LiIO_3$ = 4.289 mol kg^{-1}; soly of $Tl(IO_3)_4$ = 4.2 x 10^{-6} mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
The solubility in this system was studied by the isothermal method. Equilibrium was reached in 25-30 days. Samples of the co-existing phases were analyzed for lithium by emmission spectrometry, and the concentration of lithium was determined by comparing the solution being analyzed with solutions containing only lithium. The hafnium content was determined photometrically using Arsenazo III and reducing the iodate ion with hydroxylamine.
The solid phases were identified by the method of residues, and the results confirmed by X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:
Lithium iodate was "highly pure" grade, and hafnium iodate obtained by the action of aqueous iodic acid solution on freshly precipitated hafnium hydroxide. The salt obtained contained 20.31 mass % Hf and 79.45 mass % IO_3; mol ratio IO_3/Hf = 3.99. The product agrees with the data (1) for anhydrous hafnium iodate.

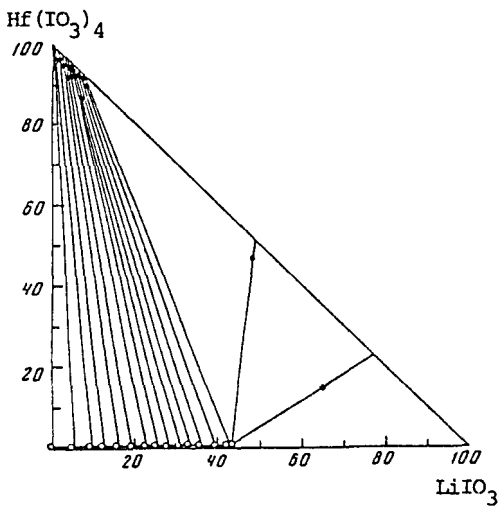
ESTIMATED ERROR:
Soly: within 1-3 rel % (flame photometry of Li).
Temp: precision ± 0.1 K.

REFERENCES:
1. Deabridges, J.; Rohmer, R. *Bull. Soc. Chim. Fr.* 1968, *2*, 521.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Hafnium iodate; $Hf(IO_3)_4$; [19630-06-9] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Tokareva, A.G. *Zh. Neorg. Khim.* 1981, *26*, 1701-2; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1981, *26*, 919-20.

COMMENTS AND/OR ADDITIONAL DATA:

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



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Lithium (I-4)-tetraoxorhenate(1-) Lithium perrhenate); $LiReO_4$; [13768-48-4] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I. *Zh. Neorg. Khim.* 1979, *24*, 2287-8; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1979, *24*, 1269-70.
VARIABLES:	**PREPARED BY:**
Composition at 298.2 K	Hiroshi Miyamoto

EXPERIMENTAL VALUES:

Composition of saturated solutions at 25.0°C

$LiIO_3$		$LiReO_4$		Nature of the solid phase[a]
mass %	mol % (compiler)	mass %	mol % (compiler)	
43.82[b]	7.173	-	-	A
35.98	6.009	8.89	1.050	"
26.20	4.633	21.90	2.738	"
21.50	3.907	28.08	3.608	"
14.53	2.956	41.10	5.914	"
9.51	2.114	50.40	7.923	"
4.83	1.245	61.51	11.21	"
2.08	0.631	70.41	15.11	"
1.71	0.528	71.36	15.57	A+B
-	-	74.25	16.81	B

[a] A = α-$LiIO_3$; B = $LiReO_4.H_2O$

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The ternary system $LiIO_3$-$LiReO_4$-H_2O was investigated by the isothermal method. Equilibrium was reached in 10-15 days.

Lithium in the liquid phases was determined by ion exchange, and iodate content was determined by iodometric titration in the presence of phthalate buffer at pH 5. The perrhenate concentration was found by difference. Solid phase compositions determined by the method of residues and checked by X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:

Special purity grade $LiIO_3$ was used. Lithium perrhenate was made from lithium hydroxide and perrhenate obtained by ion exchange from ammonium perrhenate.

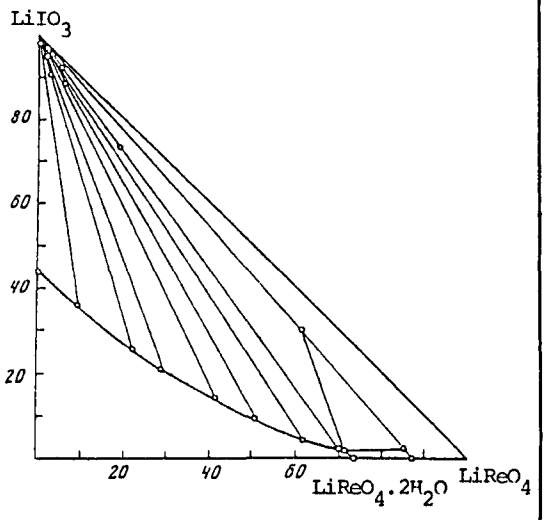
ESTIMATED ERROR:

Soly: nothing specified.

Temp: precision ± 0.1 K.

COMMENTS AND/OR ADDITIONAL DATA:

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



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Neodymium iodate; $Nd(IO_3)_3$; [14732-16-2] (3) Water; H_2O; [7732-18-5]	Vinogradov, E.E.; Tarasova, G.N. *Zh. Neorg. Khim.* 1982, *27*, 269-70; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1982, *27*, 153-4.
VARIABLES:	PREPARED BY:
Composition at 298.2 K	Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$Nd(IO_3)_3$ mass %	$Nd(IO_3)_3$ mol % (compiler)	$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	Nature of the solid phase[b]
0.15[b]	4×10^{-3}	-	-	A
0.02	5×10^{-4}	1.02	0.102	"
0.01	3×10^{-4}	2.80	0.285	"
<0.01	$<3 \times 10^{-4}$	6.75	0.712	"
<0.01	"	14.97	1.714	"
<0.01	"	18.96	2.266	"
<0.01	"	23.11	2.892	"
<0.01	$<4 \times 10^{-4}$	29.13	3.913	A
<0.01	"	35.30	5.129	"
<0.01	"	34.99	5.063	A+B
<0.01	"	35.18	5.103	"
-	-	43.30[b]	7.034	B

[a] A = $Nd(IO_3)_3.2H_2O$; B = $LiIO_3$

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

soly of $LiIO_3$ = 4.200 mol kg^{-1}

soly of $Nd(IO_3)_4$ = 2.2×10^{-3} mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The compiler assumes that the isothermal method was used. The experiments were carried out in a water thermostat, and equilibrium was established after 30-55 days.

The iodate concentration was determined by titration with sodium thiosulfate in the presence of sulfuric acid and potassium iodide, the neodymium ion by complexometric titration in the presence of hexamethylenetetramine and Methylthymol blue, and lithium by flame photometry.

The composition of the solid phase was determined by Schreinemakers' method of residues, and thermogravimetry.

ESTIMATED ERROR:

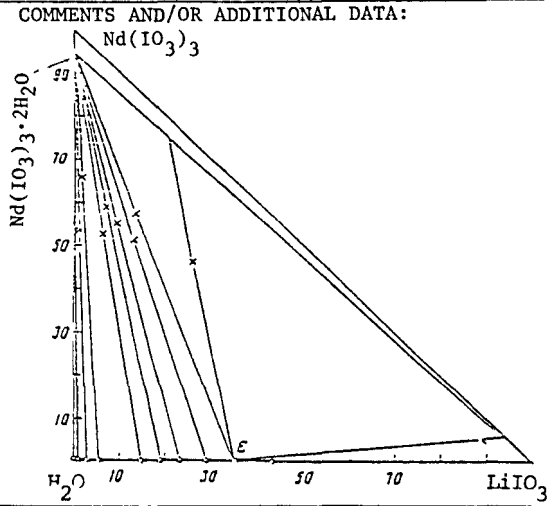
Soly: nothing specified.

Temp: precision ± 0.1 K.

SOURCE AND PURITY OF MATERIALS:

Lithium iodate synthesized from iodic acid and lithium carbonate. Neodymium iodate was made from neodymium oxide and iodic acid. The purity of the product was checked chemically.

COMMENTS AND/OR ADDITIONAL DATA:



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Samarium iodate; $Sm(IO_3)_3$; [134732-17-3] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Zherdienko, L.P. *Zh. Neorg. Khim.* 1977, *22*, 1139-41; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1977, *22*, 624-5.
VARIABLES: Composition at 298 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25°C

$Sm(IO_3)_3$ mass %	$Sm(IO_3)_3$ mol % (compiler)	$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	Nature of the solid
0.023[b]	0.00061	0.00	0.0000	A
0.020	0.00057	6.97	0.737	"
0.017	0.00051	13.10	1.472	"
0.015	0.00048	17.50	2.059	"
0.013	0.00044	23.42	2.941	"
0.012	0.00043	28.52	3.803	"
0.012	0.00046	33.10	4.673	"
0.013	0.00053	38.23	5.778	"
0.011	0.00047	41.56	6.583	A+B
0.011	0.00047	41.56	6.583	"
0.000	0.00000	43.82[b]	7.173	B

[a] A = $Sm(IO_3)_3.2H_2O$; B = $LiIO_3$

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

soly of $LiIO_3$ = 4.289 mol kg^{-1}

soly of $Sm(IO_3)_3$ = 3.4 x 10^{-4} mol kg^{-1}

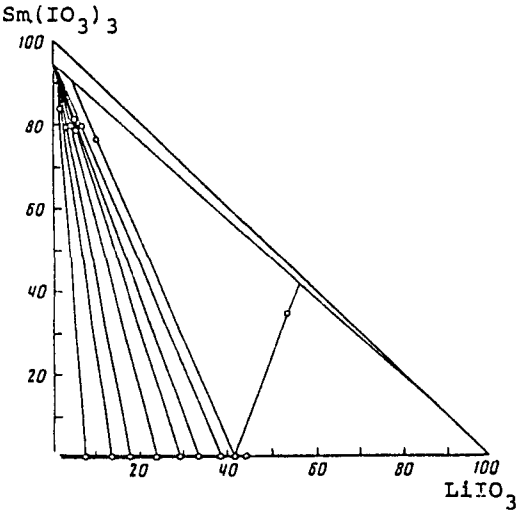
AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
The ternary system, $LiIO_3$-$Sm(IO_3)_3$-H_2O, was investigated by the isothermal method. Equilibrium in the system was reached in 20-30 days. Samarium content in the liquid phase was determined by complexometric titration and lithium by flame photometry. The solid phases were identified by the method of "residues" and checked by X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:
$Sm(IO_3)_3.2H_2O$ prepared from samarium carbonate and iodic acid. Special purity grade $LiIO_3$ was used.

ESTIMATED ERROR:
Nothing specified.

COMMENTS AND/OR ADDITIONAL DATA:
The phase diagram is given below (based on mass % units).



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Lithium hydroxide; LiOH; [1310-65-2] (3) Water; H_2O; [7732-18-5]	Tarasova, G.N.; Vinogradov, E.E.; Lepeshkov, I.N. *Zh. Neorg. Khim.* 1976, *21*, 874-5; *Russ. J. Inorg. Chem. (Engl. Transl.)* 1976, *21*, 478-9.
VARIABLES: Composition at 298.2 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 25.0°C

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	LiOH mass %	LiOH mol % (compiler)	Nature of the solid phase[a]
0.00	0.000	11.05	8.546	A
4.19	0.443	10.29	8.263	"
10.94	1.235	9.57	8.20	"
11.95	1.361	9.13	7.90	E_1
12.02	1.371	9.31	8.06	"
13.23	1.526	8.87	7.77	B
14.64	1.713	8.69	7.72	"
15.79	1.866	7.76	6.96	"
18.86	2.306	7.99	7.42	"
21.63	2.723	7.38	7.06	"
23.70	3.055	7.25	7.10	"
25.47	3.353	7.22	7.22	"
26.98	3.612	6.86	6.97	E_2
26.91	3.600	6.86	6.97	"
26.95	3.607	6.88	6.99	"
31.65	4.463	4.96	5.31	C
38.68	5.917	1.58	1.84	"
43.93[b]	7.203	0.00	0.00	"

[a] A = $LiOH.H_2O$; B $mLiIO_3.nLiOH$; C = $LiIO_3$;
The chemical formula of E_1 and E_2 was not given in the paper.

[b] For the binary system the compiler computes the following:
soly of $LiIO_3$ = 4.309 mol kg^{-1}

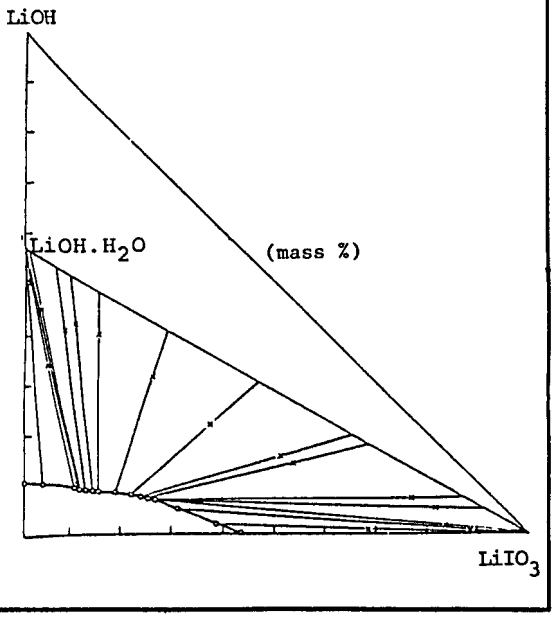
AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
Isothermal method used. Equilibrium was reached after continual stirring for 12-14 days. The hydroxide ion concentration was determined by titration with 0.1 mol dm^{-3} HCl in presence of Methyl Orange. Li^+ was determined by flame photometry and by the periodate method. The IO_3^- ion was determined by titration with sodium thiosulfate solution in the presence of sulfuric acid and KI.

SOURCE AND PURITY OF MATERIALS:
Lithium iodate was prepared from lithium carbonate and iodic acid. Lithium hydroxide freed of Li_2CO_3 by recrystallization from aqueous solution in silver vessels in a stream of nitrogen.

ESTIMATED ERROR:
Soly: nothing specified.
Temp: precision ± 0.1 K.

COMMENTS AND/OR ADDITIONAL DATA:



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2]	Ricci, J.E.; Amron, I.
(2) Iodic acid; HIO_3; [7782-68-5]	*J. Am. Chem. Soc.* 1951, *73*, 3613-8.
(3) Water; H_2O; [7732-18-5]	
VARIABLES:	**PREPARED BY:**
Composition at 298.2 K	Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	HIO_3 mass %	HIO_3 mol % (compiler)	density g cm^{-3}	Nature of the solid phase[a]
43.86[b]	7.184	0.00	0.00	1.558	A
43.96	7.323	1.03	0.177	1.579	"
43.96	7.563	3.13	0.557	1.620	"
43.83	7.964	6.67	1.25	1.697	"
43.56	8.508	11.18	2.257	1.797	"
43.08	9.229	16.65	3.687	1.923	"
42.49	9.797	20.89	4.979	2.027	"
41.48	10.59	26.56	7.012		"
40.81	10.82	28.80	7.890	2.237	"
40.42	11.14	30.78	8.767	2.300	"
40.16	11.17	31.40	9.024	2.312	A+S
40.25	11.19	31.30	8.993	2.310	"
40.16	11.14	31.30	8.973	2.311	"
(av)40.19	11.16	31.33	8.995	2.311	"
39.75	11.23	32.46	9.484	2.334	S
39.57	11.19	32.65	9.542	2.340	"
38.84	11.33	34.58	10.43	2.385	"
38.53	11.40	35.42	10.83		"
37.21	11.47	38.25	12.19	2.475	"
37.13	11.50	38.52	12.34	2.476	"
36.18	11.47	40.29	13.21	2.525	"
36.28	11.57	40.38	13.31		"
35.35	11.58	42.23	14.30	2.567	"
34.70	11.59	43.54	15.04	2.602	"

continued.....

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Satd slns prepd by placing excess solid and freshly boiled distilled water in glass-stoppered flasks, and rotating in a const temperature water bath.

After rotation and settling of the solid, the liquid was sampled by means of 1 ml specific gravity pipets. Solutions with at least 20 % H_2O were withdrawn through filter paper tips for separation of the solid. Those with less water were sampled only after sufficient settling. When the crystals were not too fine, one or two days of settling sufficed. For extremely fine ppts, separation was accomplished by centrifuging for one minute followed by replacing the bottle in the water-bath for five minutes until sufficiently clear supernatant liquid was available for sampling. Equilibrium was reached in 2 to 8 weeks depending on the composition. Equilibrium was checked for a few representative solutions in each series including the most viscous, before the whole series was analyzed. The solutions on the solubility curve of HIO_3 were all seeded with the solid before stirring at 25°C.

continued.....

SOURCE AND PURITY OF MATERIALS:

Some of the lithium iodate used was made by purification of two samples of commercial c.p. material which assayed ~97% $LiIO_3$. One sample contained insoluble $Ba(IO_3)_2$ and gave an acid reaction. Part of it was simply recrystallized twice and part was neutralized with Kahlbaum LiOH before the second crystallization. The other sample contained insoluble Li_2CO_3 and gave an alkaline reaction; this was neutralized with iodic acid and LiOH followed by two recrystallizations. The rest of the salt used was made from Kahlbaum Li_2CO_3 and c.p. iodic acid using LiOH for final neutralization.

The final product was obtained by slow evaporation with stirring on a hot-plate. After decantation the crystals were filtered by suction and washed with water. Ground and dried at 110-180°C, the product was found to be 99.9 to 100.1 % pure by determination of lithium as Li_2SO_4 and iodate by titration with $Na_2S_2O_3$ solution.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2]	Ricci, J.E.; Amron, I.
(2) Iodic acid; HIO_3; [7782-68-5]	*J. Am. Chem. Soc.* 1951, *73*, 3613-8.
(3) Water; H_2O; [7732-18-5]	

EXPERIMENTAL VALUES: (Continued)

Composition of saturated solutions

$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	HIO_3 mass %	HIO_3 mol % (compiler)	density g cm^{-3}	Nature of the solid phase[a]
34.09	11.61	44.79	15.77	2.636	S
33.62	11.57	45.60	16.23	-	"
33.48	11.62	46.00	16.50	-	"
32.89	11.57	47.02	17.10	2.695	"
32.81	11.60	47.25	17.26	2.702	"
29.86	11.48	52.74	20.97	2.848	"
27.25	11.30	57.45	24.63	2.979	"
(av)26.84	11.26	58.15	25.21	2.99_5	S+B
26.76	11.20	58.19	25.19	2.99_3	"
26.95	11.33	58.10	25.24	2.99_3	"
26.82	11.24	58.15	25.19	2.99_8	"
25.91	10.65	58.56	24.89	2.96_1	B
21.08	8.023	61.25	24.10	2.82_7	"
16.48	5.875	63.91	23.55	-	"
10.20	3.403	68.09	23.48	2.60_9	"
7.23	2.35	70.19	23.58	-	"
3.50	1.10	72.92	23.79	2.51_4	"
1.24	0.385	74.62	23.95	2.48_7	"
0.00	0.00	75.40[b]	23.89		"

[a] A = $LiIO_3$; B = HIO_3; S = solid solution

[b] For the binary systems, the compiler computes the following:

soly of $LiIO_3$ = 4.296 mol kg^{-1}

soly of HIO_3 = 17.42 mol kg^{-1}

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

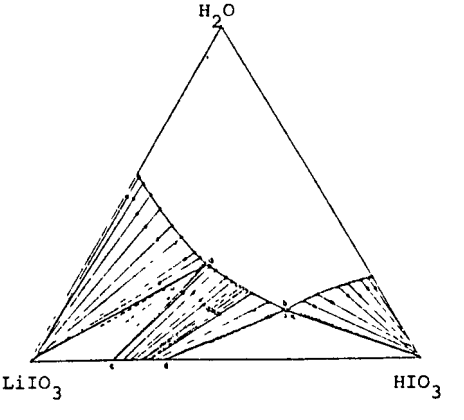
In most cases equilibrium was approached presumably from super-saturation, and some cases were obtained from undersaturation. For a few of the worst cases the rotation of the tubes was started at ∿45°C, and the temperature of the water-bath was slowly lowered to 25°C over a period of 30 hours, the slns being seeded with HIO_3 at ∿36°C. For the analysis of the saturated solutions the iodic acid content was determined by titration with standard NaOH solution, and the neutralized sample was then used for the determination of total iodate with standard $Na_2S_2O_3$ solution in the presence of H_2SO_4.

ESTIMATED ERROR:

Soly: precision was presumed within 0.1 %.
Temp: precision about ± 0.05 K (compiler).

COMMENTS AND/OR ADDITIONAL DATA:

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



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Iodic acid; HIO_3; [7782-68-5] (3) Water; H_2O; [7732-18-5]	Azarova, L.A.; Vinogradov, E.E. Mikhailova, E.M.; Pakhomov, V.I. *Zh. Neorg. Khim.* 1973 *18*, 239-42; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1973, *18*, 124-7
VARIABLES:	PREPARED BY:
Composition at 323.2 K	Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 50.0°C

HIO_3 mass %	HIO_3 mol % (compiler)	$LiIO_3$ mass %	$LiIO_3$ mol % (compiler)	Nature of the solid phase[a]
0.00	0.00	43.28[b]	7.028	A
4.26	0.766	43.54	7.574	"
23.72	5.912	41.76	10.07	"
20.67	4.740	40.83	9.057	"
26.28	6.823	41.03	10.30	"
30.27	8.330	39.53	10.52	A+C
30.44	8.429	39.62	10.61	"
46.31	17.05	33.98	12.10	C
47.11	18.32	34.83	13.10	"
51.69	21.20	31.78	12.61	"
55.19	22.79	28.48	11.38	"
34.65	10.23	37.99	10.86	"
44.91	16.58	35.47	12.67	"
59.90	26.53	25.65	10.99	C+B
61.38	29.14	25.90	11.89	"
61.14	29.31	26.37	12.23	"
61.36	30.20	26.77	12.75	"
62.15	26.57	22.49	9.301	B
68.78	24.76	10.90	3.796	"
76.02	25.97	1.98	0.654	"
78.62	27.36	0.00	0.00	"

[a] A = $LiIO_3$; B = HIO_3; C = $mLiIO_3.nHIO_3$

[b] For binary systems the compiler computes the following:
soly of $LiIO_3$ = 4.20 mol kg^{-1} soly of HIO_3 = 20.90 mol kg^{-1}

METHOD/APPARATUS/PROCEDURE:

Mixtures of $LiIO_3$, HIO_3 and H_2O were stirred in a thermostat for 7-14 days. Samples were allowed to stand in the thermostat, centrifuged over a period of 1 min, thermostated again, and only then the liquid phase was separated from the solid phase. HIO_3 was determined by titration with a standard NaOH solution, and then the total IO_3^- content in the sample was found by iodometric titration. Lithium was determined by flame photometry and the periodate method.
The composition and nature of solid phases were determined by the Schreinemakers', X-ray diffraction, and thermographic methods. X-ray diffraction patterns of solid phases were recorded by the Debye-Scherrer method with an RKU-114 camera with nickel-filtered Cu-Kα radiation.

SOURCE AND PURITY OF MATERIALS:

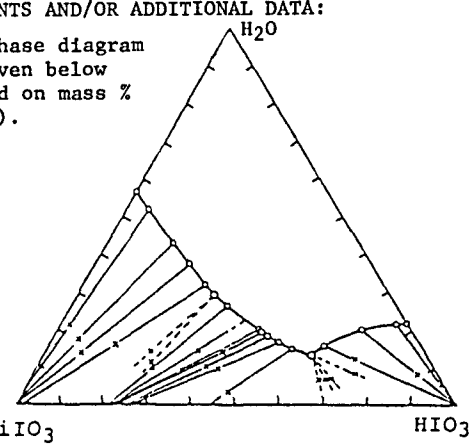
C.p. grade iodic acid used. $LiIO_3$ prepared from Li_2CO_3 and iodic acid. The product was analyzed chemically, and by X-ray diffraction, but the results were not given.

ESTIMATED ERROR:

Nothing specified.

COMMENTS AND/OR ADDITIONAL DATA:

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



COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Iodic acid; HIO_3; [7782-68-5] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Mitnitskii, P.L. *Izv. Sib. Otd. Akad. Nauk SSSR Ser. Khim. Nauk* 1976, (6), 89-91.
VARIABLES: Composition at 313 K.	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES: Composition of saturated solutions at 40°C

$LiIO_3$		HIO_3		Nature of the solid phase[a]
mass %	mol % (compiler)	mass %	mol % (compiler)	
43.83[b]	7.176	0.000	0.000	A
42.872	7.758	7.382	1.381	"
41.614	7.900	11.503	2.258	"
39.830	9.805	26.596	6.768	"
39.177	10.464	30.763	8.494	"
39.701	10.802	30.994	8.717	A+C
35.771	10.255	37.004	10.966	C
34.748	10.708	40.715	12.970	"
33.884	10.258	40.942	12.813	"
31.447	10.450	46.632	16.019	"
26.672	10.922	57.684	24.417	"
25.563	10.670	59.309	25.591	"
24.468	9.872	59.493	24.812	"
23.417	9.551	60.845	25.654	"
23.689	10.124	61.805	27.303	B+C
20.073	8.4238	64.961	28.181	B
18.121	7.200	65.443	26.880	"
13.189	4.931	68.649	26.531	"
11.598	4.069	68.311	24.776	"
9.193	3.192	70.398	25.271	"
6.344	2.119	72.00	24.862	"
2.787	0.877	73.525	23.909	"
0.000	0.000	73.70[b]	22.299	"

continued.....

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

For high concentrations of $LiIO_3$, saturated solutions were prepared isothermally. For high HIO_3 concentrations, saturated solutions were prepared isothermally from supersaturated solutions. Equilibrium was reached in 8 days for the former method, and in 30 days for the latter method.

The acid concentration in liquid and solid phases was determined by titration with standard NaOH solution, and the iodate concentration determined by titration with thiosulfate solution.

The composition of the solid phase was determined by Schreinemakers' method of residues and checked by X-ray diffraction.

SOURCE AND PURITY OF MATERIALS:

"Chemically pure" grade $LiIO_3$ was used. The total amount of impurities did not exceed 0.001 %.

Iodic acid was prepared as described in ref.(1).

ESTIMATED ERROR:

Nothing specified.

REFERENCES:

1. Vulikh, A.I.; Bogatyrev, V.L.; Kaz'minskaya, V.A.; Zherdienko, L.P. *Metody Polucheniya Khimcheskikh Reaktivov i Preparatov IREA, Vyp. 16*, M., s.5.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Iodic acid; HIO_3; [7782-68-5] (3) Water; H_2O; [7732-18-5]	Shklovskaya, R.M.; Arkhipov, S.M.; Kidyarov, B.I.; Mitnitskii, P.L.; *Izv. Sib. Otd. Akad. Nauk SSSR Ser. Khim. Nauk* 1976, (6), 89-91.

EXPERIMENTAL VALUES: (Continued)

[a] A = α-$LiIO_3$; B = HIO_3; C = solid solution

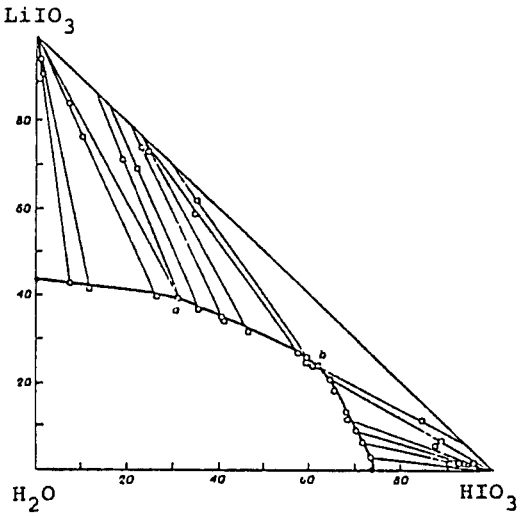
[b] For binary systems the compiler computes the following:

soly of $LiIO_3$ = 4.291 mol kg^{-1}

soly of HIO_3 = 15.93 mol kg^{-1}

COMMENTS AND/OR ADDITIONAL DATA:

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



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
	ESTIMATED ERROR:
	REFERENCES:

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Iodic acid; HIO_3; [7782-68-5] (3) Water; H_2O; [7732-18-5]	Lukasiewicz, T.; Pietaszewska, J.; Amija, J. *Biul. Wojsk. Acad. Teck.* 1979, *28*, 85-9.
VARIABLES: Temperature: 313 to 328 K pH: range of 1.9 to 3.5	**PREPARED BY:** A. Maczynski and H. Miyamoto

EXPERIMENTAL VALUES:

t/°C	pH	Composition of saturated solutions[a] HIO_3/mol %	$LiIO_3$/mol %
40	1.9	0.68	7.06
50	"	0.60	6.22
55	"	0.40	6.58
40	2.1	0.38	6.44
50	"	0.34	6.64
55	"	0.20	6.56
40	2.3	0.30	6.66
50	"	0.17	6.63
55	"	0.16	6.60
40	2.5	0.18	6.65
50	"	0.16	6.63
55	"	0.12	6.58
40	3.0	0.06	6.62
50	"	0.05	6.50
55	"	0.05	6.48
40	3.5	0.03	6.44
50	"	0.02	6.62
55	"	0.03	6.48

[a]Composition of solid phases not specified.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The method employs the fact that the solubility of $LiIO_3$ in water decreases as the temperature is increased.
A nearly saturated solution was prepared in a closed vessel at room temperature and placed in a thermostat. On heating to higher temperatures lithium iodate precipitated. The solution was kept at the higher experimental temperature for a few hours until the composition was constant. The analysis involved hydrogen ion concentration by NaOH titration, and iodate ion concentration determinations by iodometry as described in ref (1).

SOURCE AND PURITY OF MATERIALS:

Nothing specified.

ESTIMATED ERROR:

Soly: precision ± 1 % or better.
Temp: nothing specified.

REFERENCES:

1. Ricci, J.; Amron, I. *J. Am. Chem. Soc.* 1953, *73*, 3613