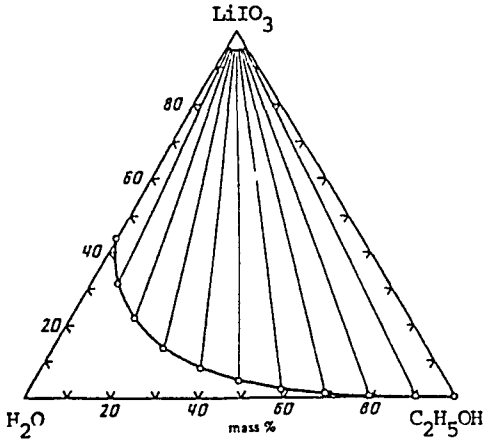
COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2] (2) Ethanol; C_2H_6O; [64-17-5] (3) Water; H_2O; [7732-18-5]	Arkhipov, S.M.; Pruntsev, A.E.; Kidyarov, B.I. *Zh. Neorg. Khim.* 1977, *22*, 3394-5; *Russ. J. Inorg. Chem.* (*Engl. Transl.*) 1977, *22*, 1855.
VARIABLES: Concentration of ethanol at 298 K	**PREPARED BY:** Hiroshi Miyamoto

EXPERIMENTAL VALUES:

Numerical solubility data for the ternary $LiIO_3$-ethanol-H_2O system were not given in the original paper. The phase diagram shown here was the only data reported.



As the alcohol concentration in the solution is increased, there is a marked decrease in the solubility of lithium iodate. Thus, the solubility of lithium iodate is reduced to one-half in a solution with 15.5 mass % C_2H_5OH. A further increase in alcohol concentration leads to a less pronounced decrease in the solubility of $LiIO_3$. The solubility of lithium iodate in anhydrous ethanol is <0.01 mass %.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The solubility of lithium iodate-ethanol-water system was investigated by the isothermal method. Equilibrium was established in 5-6 days. The authors do report that saturated solutions were analyzed for $LiIO_3$ (i.e. presumably for both Li^+ and IO_3^-, compiler), but no details were given.

SOURCE AND PURITY OF MATERIALS:

"Special purity" grade lithium iodate was used.
Ethanol was purified and dried by a published method (ref 1).

ESTIMATED ERROR:

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

REFERENCES:

1. Plyushev, V.E.; Shakhno, I.V.; Komissarova, L.N.; Nadexhdina, G. V. *Trudy Moskov. Inst. Tonk. Khim. Tekhol. im Lomonosova*, 1958, 7, 53.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium iodate; $LiIO_3$; [13765-03-2]	Miravitlles, Mille L.
(2) 2-Propanone (acetone); C_3H_6O; [67-64-1]	*Ann. Fis. Quim. (Madrid)* 1945, *41*, 120-37.
VARIABLES:	**PREPARED BY:**
T/K = 288, 293 and 298	R. Herrera

EXPERIMENTAL VALUES:

	Solubility[a]	
t/°C	mass %	mol kg^{-1}
15	0.0333	0.00183
20	0.0327	0.00180
25	0.0319	0.00175

[a]Molalities calculated by the compiler.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:
Saturated solutions were prepared in an Erlenmeyer flask by mixing the dried acetone with an excess of halate for two hours. The solution was constantly stirred by bubbling dry air (air was dried by passing it through $CaCl_2$ while pumping it into the solution). Air going out from the flask after bubbling in the solution carried some acetone vapor during this operation. The solution temperature was kept constant by immersing the flask in a constant temperature water bath. After two hours, the air exit was closed. The resulting pressure forced the saturated solution from the Erlenmeyer through a tube filled with cotton (which acted as a filter), and was collected in a small flask. This flask was stoppered and weighed. The halate contained in the sample was weighed after complete evaporation of acetone.

SOURCE AND PURITY OF MATERIALS:
Commercial redistilled acetone. This acetone was then dehydrated three times by leaving it in contact with calcium chloride for forty eight hours each time. Fresh $CaCl_2$ was used in each operation. Finally, the dehydrated acetone was distilled at 56.3°C.

Source and purity of $LiIO_3$ not specified.

ESTIMATED ERROR:
Nothing specified.

REFERENCES: