COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Copper (I) oxide; Cu_2O; [1317-39-1] (2) Sodium Chlordie; NaCl; [7647-14-5] (3) Potassium chloride; KCl; [7447-40-7] (4) Carbon dioxide; CO_2 [124-38-9] (5) Water; H_2O; [7732-18-5]	Shlyapnikov, D. S.; Shtern, E. K. *Zh. Neorg. Khim.* 1977, *22*, 1100-6; *Russ. J. Inorg. Chem. (Engl. transl.)* 1977, *22*, 604-8.
VARIABLES: Concentration of chlorides, pressure of CO_2, and temperature.	**PREPARED BY:** T. P. Dirkse

EXPERIMENTAL VALUES: Solubility of Cu_2O in chloride solutions.

Salt	C_{salt}/mol dm^{-3}	20°C, pCO_2 = 50 atm C_{Cu}/g dm^{-3}	200°C, pCO_2 = 90 atm C_{Cu}/g dm^{-3}
none	0	0.40	0.047
NaCl	1	2.4127	4.8735
"	2	5.4181	10.2503
"	3	8.2000	15.0500
"	4	11.0000	19.1500
KCl	1	4.7449	5.8305
"	2	8.5429	14.7500
"	3	13.0541	21.8021
"	4	17.3600	29.4140

Some experiments were also carried out in which the total ionic strength of the solution was maintained at 4 mol dm^{-3} by adding $NaNO_3$. The solubility of Cu_2O increased with increasing Cl^- ion concentration but no numerical data are given. It was found that the cation also had an effect on the solubility of Cu_2O. Again, no numerical data are given, but a graph shows that the K^+ ion is most effective in increasing the solubility of Cu_2O under these conditions, with the other alkali metal ions being less effective.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

The Cu_2O and solvent were placed in an autoclave which was shaken mechanically for 24 hours. After this time, the autoclave was inverted and the mixture was filtered through a corundum filter fitted into the autoclave. The filtrate was acidified with HCl and treated with Br_2 to oxidize the copper which was then determined by the thiosulfate method. The pressure in the autoclave was maintained by adding a calculated amount of solid CO_2.

SOURCE AND PURITY OF MATERIALS:

The chlorides were reagent grade materials and were recrystallized. The Cu_2O was also a reagent grade substance.

ESTIMATED ERROR:

No details are given.

REFERENCES: