COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Copper(II) oxide; CuO; [1317-38-0] (2) Copper(II) perchlorate; $Cu(ClO_4)_2$; [13770-18-8] (3) Sodium hydroxide; NaOH; [1310-73-2] (4) Water; H_2O; [7732-18-5]	Nasanen, R.; Tamminen, V. *J. Am. Chem. Soc.* 1949, *71*, 1994-8.
VARIABLES: Ionic strength of the solvent at 25°C.	**PREPARED BY:** T. P. Dirkse

EXPERIMENTAL VALUES: Solubility product of CuO at 25°C.[a]

$(\text{ionic strength})^{1/2}$	$10^2 C_{Cu}$	$10^2 C_{NaOH}$	C_{NaClO_4}	pH	pK_s^o
0.097	0.694	0.199	----	5.55	19.68
0.091	0.688	0.394	----	5.65	19.69
0.085	0.683	0.587	----	5.87	19.73
0.156	1.928	0.907	----	5.46	19.62
0.151	1.900	1.161	----	5.53	19.61
0.147	1.880	1.327	----	5.58	19.64
0.145	1.872	1.398	----	5.61	19.63
0.138	1.838	1.712	----	5.89	19.66
0.137	1.831	1.760	----	6.02	19.63
0.135	1.824	1.822	----	6.78	19.66
0.247	1.263	0.362	0.0440	5.55	19.60
0.242	1.243	0.713	0.0433	5.63	19.67

[a] All concentrations are in mol dm^{-3}.

The mean value of pK_s^o is 19.65 giving 2.2×10^{-20} mol^3 dm^{-9} for K_s^o. This was calculated from the relationship:

$$C_{OH^-} = (S_{CuO}/S_{hydroxysalt})^2 [ClO_4^-]$$ S is the solubility product constant.

which was derived by solving simultaneously the equations for the solubility product constant of CuO and of the cupric hydroxyperchlorate.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Mixtures of $Cu(ClO_4)_2$, NaOH solution, and H_2O were prepared, kept at 25 ± 0.1°C and occasionally stirred. The pH of the solutions was measured until it became constant. The pH was measured with a glass electrode. In these solutions a cupric hydroxyperchlorate and CuO were equilibrium solid phases and from the K_s^o of the basic perchlorate (which was determined separately), the pH of the solution, and the concentration of the ClO_4^- ion, the K_s^o of CuO was calculated. This calculation was based on the assumption that the Cu^{2+} ion concentration was the same for all equilibria in the system.

SOURCE AND PURITY OF MATERIALS:

All materials were of purified or reagent grade quality. The $Cu(ClO_4)_2$ was prepared from CuO and $HClO_4$.

ESTIMATED ERROR:

No details are given.

REFERENCES: