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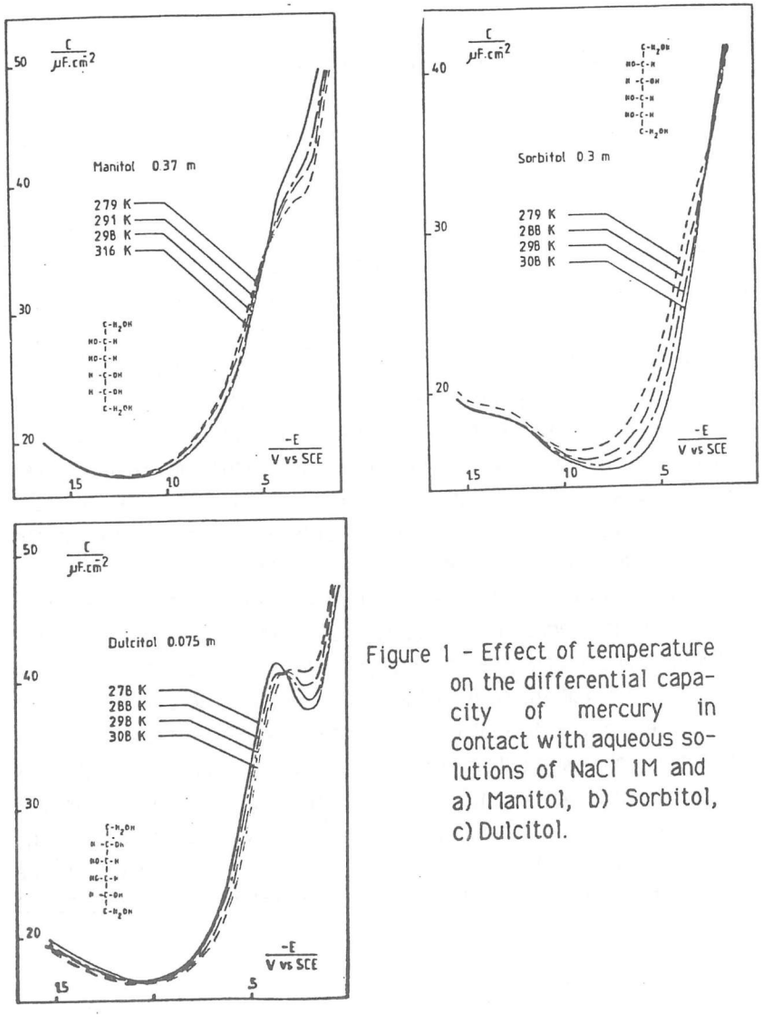

Figure 1 - Effect of temperature on the differential capacity of mercury in contact with aqueous solutions of NaCl 1M and a) Manitol, b) Sorbitol, c) Dulcitol.

KINETICS OF COPPER DISSOUTION IN NaOH and KOH MELTS

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The present work treats the kinetics and the mechanism of copper corrosion in alkaline NaOH and KOH melts at 550° C.

The experimental methods applied in this study are described in our previos work /1/.

These investigations resulted in the following conclusions:

- copper corrodes in NaOH and KOH melts with the oxygen from the air participating in the reaction:

$$1/2\ O_2 + 2NaOH \rightleftharpoons Na_2O_2 + H_2O \qquad (1)$$

$$1\ 1/2\ O_2 + 2KOH \rightleftharpoons 2KO_2 + H_2O \qquad (2)$$

with KO_2 concentration being greater; the rates of O_2 absorption in NaOH and KOH melts differ in almost two degrees,

- copper corrosion in alkali melts takes place with the participation of peroxide compounds:

$$2\ Cu + O_2^{2-} = Cu_2O + O^{2-} \qquad (3)$$

$$3\ Cu + 2O_2 = 3CuO + O^{2-} \qquad (4)$$

which explains the decrease in copper corrosion rate in undewatered initial melts.

Our conclusions concerning the participation of alkaline metal peroxides in the corrosion process correspond to analogical conclusions done in works /2,3/.

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