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$$S_{CuO}=7.84+8.18+16.11-17.8$$
$$=14.33 \text{ (Entropy Unit).}$$

It is observed that this value agrees, on the whole, with those obtained from ΔF and ΔH.

Summary.

1) A heterogeneous electrode, $Cu\left|Cu_2O,\ CuO\right|\frac{N}{10}NaOH$, which was in equilibrium in the dark has been assumed to be a kind of reversible reaction system and the chemical kinetics of reactions in the dark and in the light has proved to be applicable to such a heterogeneous system. The velocity equation of the reaction system at any wave length and intensity of light is given by

$$\frac{d(\Delta P)}{dt}=k_1\cdot J_{abs}-k_d'[O_2],$$

and it has been ascertained that the velocity formula of the reaction in the dark satisfies the reaction of the first order:

$$-\frac{d(\Delta P')}{dt}=k_d'[O_2],$$

and the formula of the photochemical reaction, excluding the reaction in the dark, satisfies that of the zero order:

$$\frac{dP}{dt}k_1\cdot J_{abs}=k_1'.$$

2) On the other hand, making thermodynamical research on the said reaction system, the equilibrium constants in the light and the dark have been calculated from the formulae and they have proved to be in good agreement. Further thermodynamical constants have been calculated. Hence the entropy in the case of the formation of CuO, which has been proved to agree fairly well with the theoretical value. Thus, it has been experimentally demonstrated that the Becquerel effect of copper oxide electrode in alkali solution is brought about according to the photochemical reversible reaction of a heterogeneous system:

$$4\,CuO \underset{\text{dark}}{\overset{\text{light}}{\rightleftarrows}} 2\,Cu_2O+O_2$$

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