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## The Rate of Solution of Zn in H<sub>2</sub>SO<sub>4</sub> Under Pressures up to 347 Atmospheres

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show a slight increase in the rate of evaporation, thereby indicating that the rate of evaporation is influenced to a small degree by the surface tension of the liquid.

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### THE COMMERCIAL PREPARATION OF OXYGEN FROM LIME AND CHLORINE

O. R. SWEENEY AND A. W. RALSTON

The reaction of chlorine on a suspension of lime in the presence of suitable catalysts, such as nickel, cobalt and iron salts, has been studied. It was found that the optimum temperature is 94° C.; that the greatest unit efficiency of the catalyst, nickel nitrate, is obtained at a concentration of .02 g. per 100 c.c; that the rate of generation of oxygen is almost directly proportional to the rate of flow of the chlorine and that nickel and cobalt salts are distinctly superior to all other catalysts which were used. In addition it has been found that the catalyst is not easily poisoned, and may be used throughout a number of runs.

An apparatus has been designed which is capable of producing pure oxygen from lime and chlorine, and which is capable of recovering the catalyst for further use.

By the process outlined chlorine, now a drug on the market, is converted into calcium chloride and yields oxygen, both of which are in demand. Commercial possibilities of this reaction were pointed out.

IOWA STATE COLLEGE,  
AMES, IOWA.

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### THE RATE OF SOLUTION OF Zn IN H<sub>2</sub>SO<sub>4</sub> UNDER PRESSURES UP TO 347 ATMOSPHERES

THOS. C. POULTER AND GLEN E. FRAZER

A study is made of the factors influencing the rate of solution of Zn in H<sub>2</sub>SO<sub>4</sub>. The conditions of the surface, the local concentration of the acid at the surface of the Zn, and the size and shape of the pieces of Zn are found to be very important factors while pressures up to 347 atmospheres have very little direct influence upon the rate of reaction.

The pressure cell used for this work was exhibited.