

1925

Scale Formation in Water Cooling System of Refrigerating Machines

Edward Bartow
State University of Iowa

Let us know how access to this document benefits you

Copyright ©1925 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Bartow, Edward (1925) "Scale Formation in Water Cooling System of Refrigerating Machines," *Proceedings of the Iowa Academy of Science*, 32(1), 327-327.
Available at: <https://scholarworks.uni.edu/pias/vol32/iss1/52>

This Research is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

value corresponds to a thermal equilibrium near 2800°A . This result is analogous to that of Moser and Isgarischew (*Zeit. fur Elektrochem.*, 16, 613, 1910) who found that the equilibrium $\text{CO}_2 \rightarrow \text{CO} + \frac{1}{2}\text{O}_2$ under the influence of the silent discharge gives 15.84% of the CO_2 decomposed. This may be shown to correspond to a thermal equilibrium of 2500°A . They also found HCl to be 0.6% decomposed by the silent discharge which may be shown to be analogous to a thermal effect of 2000°A . J. H. Davies (*Zeit. Phys. Chem.*, 64, 657-684, 1908) found that 97.2% of ammonia is decomposed under the influence of the electric discharge. This equilibrium corresponds to a thermal equilibrium of 900°A . It appears that the equilibrium of a gaseous system under the influence of the silent electric discharge corresponds to a high temperature if the reaction velocities of the involved reaction are slow when the reaction occurs without the influence of the discharge.

SCALE FORMATION IN WATER COOLING SYSTEM OF REFRIGERATING MACHINES

EDWARD BARTOW

(*ABSTRACT*)

The overflow pipe from the cooling apparatus of a refrigerating machine at the State University of Iowa became completely clogged with scale in three weeks time. Investigation by analysis of the scale and water showed the precipitation to be due to an ammonia leak. The ammonia reacting with the CO_2 and the Bicarbonate of Ca, caused the heavy precipitation of practically pure CaCO_3 .

STATE UNIVERSITY OF IOWA.

THE PREPARATION OF PURE OCTANE

H. F. LEWIS AND G. ROERT YOHE

(*ABSTRACT*)

A study of the velocity factors involved in the preparation of octane by the Wurtz reaction has been made and a new technic developed. Using 50 grams of butyl bromide, 10.5 grams of bird shot sodium or a 25% excess, and 40 cc. of ether, at the reflux temperature, yields of 73% have been obtained in five hours when the mixture is agitated, and without agitation, but 44%.

By dropping the butyl bromide on the sodium contained in a