

1926

## The Absorption of Moisture by Hard Rubber

Geo. E. Thompson

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### Recommended Citation

Thompson, Geo. E. (1926) "The Absorption of Moisture by Hard Rubber," *Proceedings of the Iowa Academy of Science*, 33(1), 249-249.

Available at: <https://scholarworks.uni.edu/pias/vol33/iss1/69>

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the magnetic properties not at all, (2) the films are permanent in time in magnetic properties and do not rust.

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## POTENTIALS OF SPARK LINES OF MERCURY VAPOR

J. A. ELDRIDGE

(*ABSTRACT*)

It has been shown by a series of photometric readings on thirty spark lines of mercury falling in the range 2000-5000 angstroms, that these lines fall into three groups. (1) Excitation potential at about 20 volts, (2) excitation potential about 28 volts and (3) excitation potential about 55 volts. The exact values of these potentials are uncertain since they depend upon pressure and current conditions. If we accept the results of Smythe that double ionization occurs first at 20 volts and triple ionization certainly not under 100 volts we may suppose the first class of lines as due to the removal of the second valence electron. The other lines are not so easily explained but are probably due to electrons displaced from the inner levels.

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## THE ABSORPTION OF MOISTURE BY HARD RUBBER

GEO. E. THOMPSON

(*ABSTRACT*)

A study is being made of the effects of relative humidity and electric fields on moisture absorption by hard rubber.

A specimen of hard rubber is suspended in a constant temperature box from the beam of a sensitive chainomatic balance. The relative humidity of the box is varied by placing sulphuric acid of various concentrations in the box. The rubber specimen is suspended between two brass electrodes which are attached to a 10,000 volt transformer.

At 100 per cent humidity the effect of the electric field is to increase the rate of moisture absorption at first and later to diminish it. At 70 per cent humidity the electric field seemed to be without effect.