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The Dissociation of Some Organic and Inorganic Substances at High Temperature

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pected that Fe_3C should also be metastable at a pressure of one atmosphere unless the added pressure of the gases lowers the activity of the Fe and C to such an extent as to change the Fe_3C from a stable to a metastable state.

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A CONTINUOUS READING ELECTRO-TITRATION APPARATUS

STEPHEN POPOFF AND J. HILDEBRAND

(ABSTRACT)

Goode's Single radio tube electro-titration set up was modified so as to give greater sensitivity. In place of the galvanometer a microammeter reading to 750 microamperes is used in the circuit.

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THE DISSOCIATION OF SOME ORGANIC AND INORGANIC SUBSTANCES AT HIGH TEMPERATURES

GLADYS M. WOODS AND THOS. C. POULTER

(ABSTRACT)

The following investigation was undertaken to ascertain whether the well known conductivity in many gaseous reactions at high temperatures is due entirely to the reaction or due partially to the dissociation of one or the other or both of the constituents into charged particles.

For the experimental work, a tube 150 mm. long and 15 mm. in diameter containing one platinum and one tungsten electrode was used. The electrodes were of wire and over lapped about 25 mm. and were about three mm. apart. This tube was heated to approximately 500 degrees, this being measured by a pyrometer.

A gentle stream of vapor of the following substances were passed through the tube at atmospheric pressure. A potential of from one to fifteen volts was applied to the electrodes and the current was read by means of a current galvanometer of sensitivity 0.021 microamperes per millimeter division.

The following substances showed a deflection ranging from one to fifteen scale divisions.

Glacial acetic acid	Amyl alcohol
Ethyl Acetoacetate	Iodine
Hydrochloric acid	Nitrobenzene

Those showing a deflection of less than one scale division are

75% acetic acid	Formic acid
Amylene	Bromine
Carbon tetrachloride	Mono brom benzene
Phenyl Chloride	Methyl Acetate

Those showing no deflection are

Benzene	Water
Methyl Alcohol	Ethyl Alcohol
Ammonia	Benzaldehyde
Toluene	Ethyl Bromide
Chloroform	Air

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CATALYSTS AND ACTIVATED MAGNESIUM IN THE PREPARATION OF GRIGNARD REAGENTS

HENRY GILMAN AND J. MERRIAM PETERSON

(ABSTRACT)

Many RX compounds enter sluggishly into reaction with magnesium in the preparation of organomagnesium halides. Furthermore, it is actually impossible to form RMgX compounds from some RX compounds. Accordingly, a study is in progress on catalysts and activated magnesium in order to extend the preparation of Grignard reagents. The results so far obtained show that when an alloy containing $12\frac{3}{4}\%$ copper and the remainder magnesium is heated in an evacuated tube at 200° for one hour with about one-half its weight of iodine, the activated alloy thus obtained is superior to that described by Baeyer and used so extensively at present.

It has been used in a study of the polarity of polyhalogen compounds and the yields of di-p-bromomagnesium benzene obtained from p-dibromobenzene are in excess of those obtained by the use of any activated magnesium hitherto obtained.

The same principle is being successfully employed in the study