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The Relation of Substituents in the Hydrocarbon Radicals to the Formation and Reactions of Certain Mixed Ethers

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reactions and the proof of structure, insofar as such work involves organometallic compounds, it is necessary to determine specifically the mode of attachment of the metal to such polyvalent elements as carbon, nitrogen, oxygen and sulfur. For this reason, experiments are in progress on organobarium and organostrontium halides, as well as organomagnesium halides where the metal is attached particularly to sulfur and to oxygen. Because the polar nature of organometallic compounds makes them of such promise in the electronic interpretation of reactions, a quantitative study is being made of the reaction with substituted ethylenic compounds. Preliminary results of this work indicate that no addition takes place. A study is also in progress of the reaction of organometallic compounds with positive and negative halogens.

In studies on the mechanism of reduction by Grignard reagents, preliminary experiments show that magnesium halogen hydrides are not formed by catalytic reduction of organo-magnesium halides.

THE PREPARATION OF PERMANENT FILTER MATS FOR GOOCH CRUCIBLES

G. N. QUAM AND H. V. WRIGHT

A porcelain filter mat has been made (Sweeney and Quam — J.A.C.S. 46, 958, 1924) which withstands the heat of a blast lamp, remains constant in weight after repeated washing with aqua regia, has uniform porosity, and has the advantages of a Monroe crucible. Methods of standardizing the mats are being studied. The building of silica filter mats in silica crucibles is being investigated. Preliminary results indicate that a silica mat can be made according to the plan of the porcelain mat and have the added advantages that silica affords.

THE RELATION OF SUBSTITUENTS IN THE HYDRO- CARBON RADICALS TO THE FORMATION AND REACTIONS OF CERTAIN MIXED ETHERS

L. CHAS. RAIFORD AND J. C. COLBERT

Preliminary work in this laboratory indicates that substituents in the ring have an influence on the formation and decomposition of certain mixed ethers. The work now in progress concerns the activating or retarding influence of groups in the para position on the formation and reduction of such ethers.

The present work undertakes to compare the activity of 2:nitro:4-chlor phenol and 2:4-dinitro phenol. The methyl and ethyl ethers have been prepared, the ethers from the first being formed in lower yield than from the second. The benzyl ethers were obtained in fair yield from the corresponding potassium salts. The phenyl and allyl ethers of 2:4-dinitro phenol have been prepared and the corresponding derivatives of 2:nitro: 4-chlor phenol will be attempted later. Aluminium amalgam gave a 51% yield of 2:amino: 4-chlor-methoxy benzene together with a small amount of the azoxy derivative. The methyl, ethyl, and phenyl ethers of 2:4-dinitro phenol have been reduced with ammoniacal hydrogen sulphide and the benzoyl derivatives prepared.

THE BLEACHING OF SOY BEAN OIL WITH PEAT

H. V. WRIGHT AND G. A. PEIRCE

The color in soy bean oil is removed by four or five treatments at 120°C with 10% - 20% of its weight of north Iowa peat or peat ash. The removal of the color is accomplished with fewer treatments by first mixing the oil with an equal volume of solvent naphtha which is distilled off after the bleaching treatment. Exposure of the oil to strong sunlight, or better to ultra-violet rays, assists in removing the last traces of color.

A SIMPLE AUTOMATIC MERCURY PUMP WHICH PERMITS THE COLLECTION OF THE EXHAUST GAS

H. M. McLAUGHLIN AND F. E. BROWN

ABSTRACT

The Toeppler pump has been modified so that it operates continuously and automatically, maintains a high vacuum, guards completely against the inclusion of air in the exhaust gas, and is easily made by the ordinary chemical experimenter. A water pump at M (Fig. 1) lowers the mercury in E, F and at the same time draws mercury into K through N. Mercury is raised in E, F by atmospheric pressure through N as soon as the surface of the mercury in U is below the lower end of the tube N. Gas from the apparatus is forced out through F, G into a collection apparatus W. The system P, Q, R, S, T is used only in starting the pump.