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Steric Hindrance in the Behavior of Phenyl Alkyl Ether and Derivatives

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o-nitrobenzaldehyde finds no support on the basis of gas evolved when treated with alkylmagnesium halides.

Benzylmagnesium halides, and related RMgX compounds like α -naphthylmethylmagnesium chloride (where the -MgX group is attached to a carbon that is attached in turn to an unsaturated carbon) have been found to give rearrangement products with new compounds like ethyl chlorocarbonate and ethylene oxide. In some cases (with benzylmagnesium chloride) rearrangement takes place to the para position. A study is in progress of the mechanism of such rearrangements.

In connection with the proof of the *non*-addition of RMgX compounds to an ethylenic linkage, it has been shown that cinnamyl chloride when treated with magnesium gives largely a Grignard reagent which when treated with carbon dioxide gives methyl atropic acid. The three other cases in the literature that have been offered as apparent proofs for the addition of RMgX compounds to an ethylenic linkage are also being investigated.

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THE ACTION OF THE ALKYL CHLORIDES IN THE WURTZ REACTION

HARRY F. LEWIS

At the last meeting of the Iowa Academy, a report was made on the mechanism of the Wurtz reaction using butyl and isobutyl bromides. The preparation of octane in this manner is costly and an attempt has been made to replace the bromide by the chloride. This report covers such experiments. Either in the presence or absence of ether as a solvent, the reaction is difficult to control. Yields of octane up to 20% based on the butyl chloride have been obtained. An extremely inflammable by-product is produced and it is difficult to complete a preparation without at least one fire. Using octane itself as a solvent, several bad explosions resulted.

STERIC HINDRANCE IN THE BEHAVIOR OF PHENYL ALKYL ETHER AND DERIVATIVES

L. CHAS. RAIFORD AND D. M. BIROSEL

It is known that phenyl alkyl ethers substitute in the phenyl radical less easily than phenol; nevertheless, phenetol will give a

tribromophenyl compound. When the allyl derivative is used, both phenyl and allyl radicals may be involved in the change. Experiments now in progress show that rearrangement of the allyl ether by heat, according to Claisen's method may cause a loss of bromine.

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DIPHENYLKETENE WITH NITROGEN TRICHLORIDE

G. H. COLEMAN AND A. W. CAMPBELL

Diphenylketene reacts with nitrogen trichloride in carbon tetrachloride solution. When this solution is warmed to 50° C with sodium hydroxide the addition product undergoes a rearrangement with the formation of imidobenzophenone. This rearrangement is similar to the rearrangement in Hofmann's method for the preparation of primary amines from amides. On passing dry HCl into the carbon tetrachloride solution, the hydrochloride of this compound is precipitated.

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NITROGEN TRICHLORIDE WITH BENZALACETOPHENONE

G. H. COLEMAN AND DAVID CRAIG

Nitrogen trichloride and benzalacetophenone in carbon tetrachloride solution between 20° and -15° react to form free nitrogen, ammonium chloride, benzalacetophenone dichloride, and a C-chloro-N-dichloroamino ketone. This compound can be reduced to the C-chloroamino ketone by means of concentrated hydrochloric acid. The hydrochloride and the benzoyl derivative of this compound were isolated and analyzed.

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MONOCHLOROAMINE WITH GRIGNARD REAGENTS

G. H. COLEMAN AND C. R. HOUSER

Certain Grignard reagents react with monochloroamine in dry ether solution to form amines. There is a wide variation in the