

REACTIONS OF POLYFLUOROAROMATIC COMPOUNDS WITH UNUSUAL ELECTROPHILIC REAGENTS

G. G. Yakobson*, V. V. Bardin and G. G. Furin

Institute of Organic Chemistry, 630090, Novosibirsk (U.S.S.R.)

Reactions of polyfluoroaromatic compounds with electrophilic reagents are interpreted on the basis of peculiarities of their electronic structure determined by introduction of fluorine in the benzene ring. The reactions of these compounds with electrophilic reagents of the type $\text{XF}_n^+ \text{MF}_m^-$ (X = Cl, Br, Xe; M = Sb, B, W) gives the products of regiospecific addition of two fluorine atoms. The examples are given of new reactions of Friedel-Crafts type with electrophiles generated by oxidation of arsenic, mercury, lead thiocyanate, diaryldiselenides, etc., with antimony pentafluoride. These reactions were also performed for the aromatic hydrocarbons using SbF_5 in graphite. The utility of these catalysts in the synthesis of organo-elemental fluorine-containing compounds is discussed.

CYCLOADDITIONS OF DIFLUOROMETHYLENECYCLOPROPANES

William R. Dolbier, Jr.* and Daniel Daly

Dept. of Chemistry, University of Florida, Gainesville, FL 32611, U.S.A.

Bruce E. Smart

Central Research & Development Dept., E. I. duPont de Nemours & Co., Wilmington, DE 19898 (U.S.A.)

The isomeric difluoromethylenecyclopropanes, 1 + 2 were allowed to react with various alkene and diene reagents in order to test the reactivity of these two species toward (2+2) and (2+4) cycloadditions. Reactions with 1,1-dichloro-2,2-difluoroethylene, butadiene, cyclopentadiene, furan and diphenylisobenzofuran were attempted. 1 was much



more reactive in (2+2) reactions, while 2 was more reactive in (2+4) cycloadditions. The only (2+4) reaction undergone by 1 was with diphenylisobenzofuran while the only (2+2) reaction of 2 was with 1,1-dichloro-2,2-difluoroethylene. No dimerizations of 1 or 2 were able to be observed. These results will be put in perspective with other fluorolefin cycloaddition and methylenecyclopropane cycloaddition results.