P-44

FREE RADICAL INDUCED REDUCTION OF C–Cl BOND IN CHLOROFLUOROETHERS BY ALCOHOLS AND ETHERS

Václav Dědek, František Liška, Jiří Fikar* and Petr Kuzmič

Department of Organic Chemistry, Prague Institute of Chemical Technology, 166 28 Prague 6 (Czechoslovakia)

The reduction of C-Cl bonds in (2,2-dichloro-1,1,2-trifluoroethyl)trichloromethylether (I), dichloromethyl(2,2-dichloro-1,1,2-trifluoroethyl)ether (II) and (2-chloro-1,1,2-trifluoroethyl)trichloromethylether (III) by means of alcohols (ethanol, 2-propanol, 2-butanol, 3-pentanol, cyclohexanol) as well as ethers (1,3-dioxolane, tetrahydrofurane, diethylether) under ultraviolet and γ-^{60}Co irradiation were studied.

$CFCl_2CF_2$-O-CCl_3 (I) $CFCl_2CF_2$-O-$CHCl_2$ (II)

$HCFClCF_2$-O-CCl_3 (III) $HCFClCF_2$-O-$CHCl_2$ (IV)

The optimum conditions of converting ethers I-III into (2-chloro-1,1,2-trifluoroethyl)dichloromethylether (IV) were found. The reduction efficiency of the solvents used for reduction of CCl_3 group decreases in order of tetrahydrofurane, 2-propanol, diethylether, 1,3-dioxolane, 2-butanol, cyclohexanol, ethanol and 3-pentanol, whereas in the case of $CFCl_2$ group in order of 2-propanol, 1,3-dioxolane, tetrahydrofurane, 2-butanol, ethanol and cyclohexanol.