

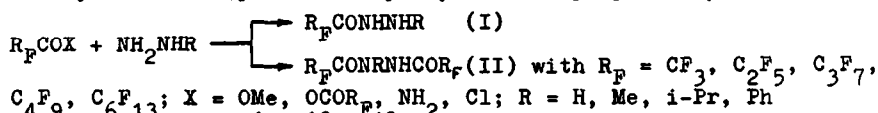
0-25

CONFORMATIONAL FEATURES OF FLUORINATED MONO- AND DIACYL-HYDRAZINES

M. G. Voronkov*, I. D. Kalikhman, E. N. Medvedeva, T. I. Yushmanova and V. A. Lopyrev

Institute of Organic Chemistry, Siberian Division, Ac. Sci. USSR, 664033 Irkutsk (U.S.S.R.)

The structure and conformational features of N-Me, N-i-Pr, N-Ph-perfluoroacyl- and bis(perfluoroacyl)hydrazines prepared by the scheme



have been studied by 1H , ^{13}C , ^{19}F NMR spectroscopy. The data obtained have been compared with the results for nonfluorinated analogs and 1,2-diacyl dimethylhydrazines (III). Restricted N-CO bond rotation accounts for the existence of monoacylhydrazines as two (E and Z) and diacylhydrazines as four conformations (EE, ZE, EZ and ZZ). Conformations conditioned by the restricted rotation about the N-N bond are not detected in the NMR spectra. Compounds I are in exclusively the Z-form. For II with R = H, the ZZ-conformation is typical, for those with R = Me, i-Pr, Ph, of the two forms observed the EE rotamer is predominant over the ZE.

0-26

THE SYNTHESIS AND CHEMISTRY OF N-HALOALKYL-1,1-DIFLUOROMETHYL-AMINES

Yuan Yang Zheng* and Darryl D. DesMarteau

Kansas State University, Manhattan, Kansas 66506 (U.S.A.)

The synthesis and chemistry of N-haloalkyl-1,1-difluoromethylenimines will be presented. At high temperature, $CF_2=NCl$ reacts with olefins, by a free radical process, to provide $RN=CF_2$ ($R = CF_2, CF_2Cl, CF_2CFCF_2, CF_2CH_2Cl, CF_2CFCF_2Br$) in high yields. The reactions of these compounds with CF_3OOH result in the formation of CF_3OOCF_2NHR by addition across the C-N double bond. These amines yield the corresponding oxaziridines, $RNCF_2O$, upon reaction with KHF_2 at 22°C. The compounds $CF_2=NR$ are isomerized by CsF to $CF_2N=CFR'$ ($R' = CF_2Cl, CFCF_2, CFCF_2Br, CH_2Cl$) at room temperature in excellent yields. All of the new compounds were characterized by their IR, NMR, and mass spectra, and their physical properties were determined.