UNEXPECTED FORMATION OF TERTIARY CHLOROPERFLUOROALKANES UPON

THE REACTION OF IODINE CHLORIDE WITH

BRANCHED PERFLUOROALKENES

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The nucleophilic iodofluorination of perfluoroalkenes by alkali metal fluorides and iodine [1] or iodine chloride [2] gives iodoperfluoroalkanes. The reaction of perfluoro-2-methyl-2-pentene with cesium fluoride and iodine chloride in sulfolane gave 2-chloroperfluoro-2-methylpentane in 59% yield (the conversion of the perfluoroalkene was 75%) instead of the expected 2-iodoperfluoro-2-methylpentane

 $(CF_3)_2C = CFC_2F_5 + CsF + ICl - \begin{cases} -- \times \rightarrow (CF_3)_2CIC_3F_7 \\ sulfolane, 90^\circ, 3h \\ -- \rightarrow (CF_3)_2CCIC_3F_7 \end{cases}$

By analogy, the reaction of perfluoroisobutylene with KF and ICl in sulfolane at 100°C gave 2-chloroperfluoro-2-methylpropane. The structures of these products were demonstrated by ¹⁹F NMR spectroscopy.

LITERATURE CITED

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