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REACTIONS OF THIOLATE ANIONS WITH VARIOUS FLUOROBENZENES: EFFECT OF THE SIZE OF THE ANION

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The investigations of the reactions of the thiolate anions with various fluorobenzenes to yield thioethers of the type $C_6F_xH_y(SR)_z$ have been extended to examine the effect of the size of the thiolate anion. The anions employed, RS^- ($R = CH_3, CH_3CH_2, (CH_3)_2CH, (CH_3)_3C$) showed that there was little difference observable when the hydrogen atoms of the methanethiolate anion were replaced stepwise by methyl groups. The size of the thiolate does not appear to be a limiting factor of these reactions. The reactions will be discussed, the effects of the solvent reviewed, and the characterization of the new products discussed.

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SYNTHESIS AND SOME REACTIONS OF FLUOROTRIFLUOROMETHYL- SULPHINE

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Fluorotrifluoromethylsulphine ($CF_3.CF=S=O$, 1), the first perfluoroalkylsulphine, has been prepared by the dechlorination of 1-chloro-1,2,2,2-tetrafluoroethanesulphonyl chloride ($CF_3.CFCl.SOCl$, 2). The sulphonyl chloride (2), synthesised in five-stages from hexafluoropropene, is dechlorinated with copper powder in a flow system to give an 80% yield of the sulphine (1), with CF_3COF and CF_3CSF as the main by-products.

The structural assignment of the sulphine (1), which is a single isomer, is based on spectroscopic and chemical evidence. It decomposes slowly at room temperature to give trifluoroacetyl fluoride and sulphur possibly via fluorotrifluoromethyloxathiiran ($CF_3.CF.S.O$). Reactions of the sulphine are described.

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