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POLYHALOGEN-CONTAINING DISULPHIDES: SYNTHESIS AND FORMATION OF THIIRANES

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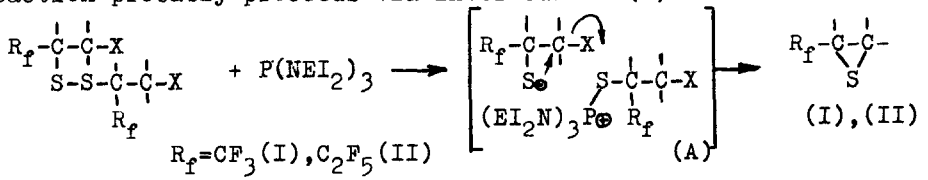
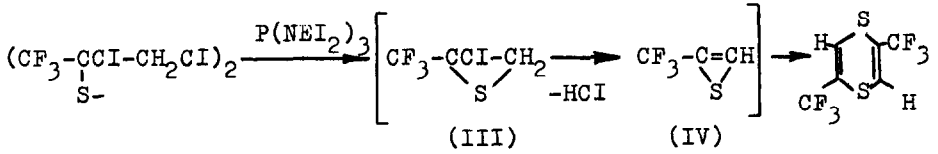
The investigation of the synthesis and reactivity of sulphur-containing organofluorine compounds revealed new polyhalogen-bearing disulphides. Symmetrical disulphides having halogen at β-position with respect to sulphur react with $P(NEI_2)_3$ to produce thiiranes, which depending on their structure are either final products (I) and (II) or undergo further conversions. The reaction probably proceeds via intermediate (A).



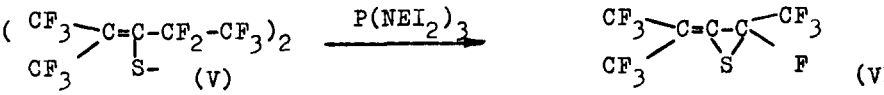
$R_f = CF_3$ (I), C_2F_5 (II)

Thiirane (III), an analogue of (I) having Cl in position 2, dehydrochlorinates to form an unstable ($4n\pi$-electron antiaromatic) thiirene (IV) which dimerizes later.



(III) (IV)

The same reaction of disulphide (V) yields allene-episulphide (VI) which is a representative of a rather inaccessible class of exo-unsaturated thiiranes.



(V) (VI)