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THE SYNTHESIS OF NEW FLUOROSULFONYL SYSTEMS AND THEIR DERIVATIVES

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Fluorosultones offer a unique pathway for preparing new fluorosulfonyl fluorides. The reaction of fluorosultones with alcohols leads to the corresponding stable fluorosulfonyl esters:

 $\frac{Q}{\text{OCF}_2\text{CFX}\text{SO}_2} + \text{ROH} + \text{NaF} \rightarrow \text{RO-CCFXSO}_2\text{F}_{(1)} + \text{NaHF}_2 \qquad X = \text{F, CF}_3$

In place of ROH and NaF, the metal alkoxide salts can be used. The new fluorosulfonyl esters can be converted to fluorosulfonyl ethers via treatment with SF_{Δ} and HF:

RO- $CFXSO_2F + SF_4 \xrightarrow{HF} RO-CF_2CFXSO_2F + SOF_2$

Conversion of the fluorosulfonyl ethers to their corresponding sulfonic acids is possible.