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SELECTIVE HYDROLYSIS OF PERFLUOROCHLOROMETHYLSULFENYL CHLORIDES

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Hydrolysis of the sulfenyl chlorides $F_nCl_{3-n}CSCl$ (n = 1,2) yields the corresponding thiosulfinates, $F_nCl_{3-n}CS(O)SCF_nCl_{3-n}$, and thiosulfonates, $F_nCl_{3-n}CS(O)_2SCF_nCl_{3-n}$, as stable intermediates. Selective preparation of these intermediate products is possible by variation of the reaction conditions. A new mechanism for the hydrolysis, based upon additional experiments with the newly prepared products, will be presented. Further reactions of the thiosulfinates and -sulfonates are reported. Oxidation of $CF_2ClS(O)_2SCF_2Cl$, for example, gives the corresponding disulfone:

$$CF_2ClS(O)_2SCF_2Cl \xrightarrow{H_2O_2/H_2O} CF_2ClS(O)_2S(O)_2CF_2Cl$$

^{19}F- and ^{13}C-NMR-data confirm the proposed hydrolyses mechanism.

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