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IMPROVEMENTS IN THE SYNTHESIS OF DIFLUOROMETHANESULFONIC ACID

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The synthesis of sodium difluoromethanesulfonate from aqueous sodium sulfite and chlorodifluoromethane, known to deliver poor and erratic yields, became more productive, more selective and reproducible when adding sodium hydroxide, even in quantities smaller than the stoichiometry. This reaction has been optimized and its carbenic nature unambiguously proved when operating in deuterated water. "Sodium diflate" has been also produced from sodium sulfite and dibromodifluoromethane.

Anhydrous difluoromethanesulfonic acid was distilled from a mixture of hydrated sodium diflate, sulfuric acid and well-controlled quantities of oleum. Violent extensive decompositions occurred when using excess of thionyl chloride or sulfur trioxide. Chain mechanisms will be proposed. 'Diflic acid' efficiently catalyzed the condensation of acetic acid on ethylene and has been compared to triflic acid.