



>>Entry Name: Fluorosulfuric acid, 11Cl

Synonym(s): Fluorosulfonic acid

CAS Registry Number: 7789-21-1

FS(O)₂OH

Molecular Formula: FHO₃S

Molecular Weight: 100.071

Accurate Mass: 99.963043

Percentage Composition: F 18.99%; H 1.01%; O 47.96%; S 32.04%

Source/Synthesis: Synth. from KHF₂ + SO₃ + H₂SO₄

Use/Importance: Commercially available. Fluorinating and dehydrating agent; alkylation catalyst

Physical Description: Colourless liq., fuming in moist air. Stable to 900°

Melting Point: Mp -89°

Boiling Point: Bp 163°

Solubility: Sol. HOAc, PhNO₂, Et₂O; insol. CCl₄, CS₂

Density: d²⁰ 1.726

Hazard & Toxicity: Reacts vigorously with H₂O

Aldrich: 23653-5

Fluka: 47500

>>Derivative: Iodo salt

see Iodine fluorosulfate (I(SFO₃)), [HTP95-C](#)

>>Derivative: Triiodo salt

see Iodine fluorosulfate iodide (I(SFO₃)I₂), [HTP61-P](#)

>>Derivative: Nitrosyl salt

see Nitrosyl fluorosulfate, [HTQ01-C](#)

>>Derivative: Antimony pentafluoride compd. (1:1)

see Hydrogen pentafluoro(fluorosulfato-*O*)antimonate, [HTG10-G](#)

>>Derivative: Me ester

see Methyl fluorosulfate, [HTX21-R](#)

References:

Gillespie, R.J., *Acc. Chem. Res.*, 1968, **1**, 202, (rev)

Jache, A.W., *Adv. Inorg. Chem. Radiochem.*, 1974, **16**, 177, (rev)

Brauer, G., *Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **1**, 193, (synth)

Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **10**, 812

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, FLZ000