



>>Entry Name: Sulfuryl fluoride, 11Cl

Synonym(s): Sulfuric oxyfluoride. Difluorodioxosulfur(VI). Vikane

CAS Registry Number: 2699-79-8

$\text{S}(\text{O})_2\text{F}_2$

Molecular Formula: $\text{F}_2\text{O}_2\text{S}$

Molecular Weight: 102.062

Accurate Mass: 101.958706

Percentage Composition: F 37.23%; O 31.35%; S 31.42%

Source/Synthesis: Synth. from $\text{SO}_2 + \text{AgF}_2$ or by thermolysis of $\text{Ba}(\text{SO}_3\text{F})_2$

Use/Importance: Reacts in base to give $\text{F}^{(-)}$. Reacts with nucleophiles in aq. soln.

Biological Use/Importance: Fumigant. Insecticide

Physical Description: Odourless, colourless, fairly inert gas. Stable to 400°

Melting Point: Mp -136.7° (-135.8°)

Boiling Point: Bp -55.4°

Solubility: Sol. H_2O

Density: d^{-55} 0.17

Hazard & Toxicity: Poison by ingestion, mildly toxic by inhalation. Exposure can cause nausea, vomiting, cramps and itching. May be narcotic

>>Derivative: NH_3 complex

Synonym(s): Amminedifluorodioxosulfur(VI)

CAS Registry Number: 94929-60-9

Molecular Formula: $\text{F}_2\text{H}_3\text{NO}_2\text{S}$

Molecular Weight: 119.092

Accurate Mass: 118.985255

Percentage Composition: F 31.91%; H 2.54%; N 11.76%; O 26.87%; S 26.93%

Physical Description: Isol. only in N_2 matrix

Other Data: Weak 1:1 donor-acceptor complex

References:

Lide, D.R. *et al.*, *J. Chem. Phys.*, 1957, **26**, 734, (*struct*)

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Jolly, W.L., *Prep. Inorg. React.*, 1966, **3**, 35, (*rev, ir, nmr*)

Brauer, G., *Handbuch Prep. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **1**, 188, (*synth*)

Holloway, J.H. *et al.*, *Adv. Inorg. Chem. Radiochem.*, 1983, **27**, 168, (*rev*)

Sass, C.S. *et al.*, *J. Phys. Chem.*, 1985, **89**, 1002, (*amine, ir*)

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