

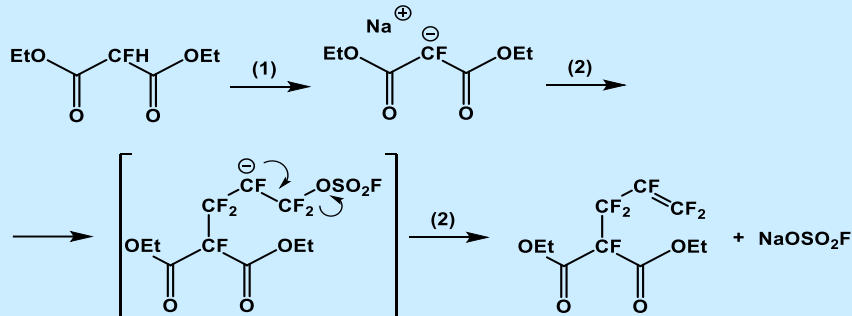
Pentafluoroallyl fluorosulfate (abb. FAFS)



Purity	97%
CAS Number	67641-28-5
Molecular Formula	C3F6O3S
Molecular Weight	230.09

In electrolyte membranes, the combined use of Rf-carboxylic acid and Rf-sulfonic acid structures is adopted from a practical standpoint. Synthesis methods of bifunctional monomers have been investigated to improve the mechanical properties and ionic conductivity of electrolyte polymers. We proposed a simple method for synthesizing vinyl monomers with two carboxyl groups from FAFS and 2-fluoromalonic acid di-ester (abb.; FDEM) using nucleophilic addition of the C anion of FDEM. The optimum range of reaction temperature was found based on the solubility and stability of the C-anion in FDEM and the selectivity of the reaction. In addition, as a solvent, MeCN, which has intermediate polarity, had good yield and purity.

Application



Notes:

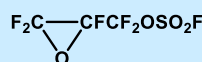
(1) NaH/solvent/4~7°C

(2) A; C-salt drops to FAFS, B; FAFS drops to C-salt, solvent

Table; Reaction conditions and Yield, Purity

No.	Eq. NaH	Solv.	Eq. FAFS	Drop	T(°C)	Yd. %	Purity%
1	1.15	DMF	1.2	A	-20	16	65
2	1.05	DMF/ MeCN	1.1	B	-20	34	79
3	1.05	MeCN	1.15	B	-15	72	97
4	1.10	DMF	1.15	B	-15	26	85
5	1.10	DMF/ THF	1.15	B	-60	14	50

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Perfluoroallyl fluorosulfate oxide ;

We are also producing FAFS oxidation reactant (CAS 124693-95-7).

Properties:

Appearance	Liquid
Boiling point, °C	62-64