



>>Entry Name: Tris(trifluoromethanesulfonato)samarium

Synonym(s): Samarium trifluoromethanesulfonate. Samarium triflate

CAS Registry Number: 52093-28-4

Related CAS Registry Numbers(s): 34629-23-7 85920-52-1

$\text{Sm}(\text{OSO}_2\text{CF}_3)_3$

Molecular Formula: $\text{C}_3\text{F}_9\text{O}_9\text{S}_3\text{Sm}$

Molecular Weight: 597.571

Accurate Mass: 598.775801

Percentage Composition: C 6.03%; F 28.61%; O 24.10%; S 16.10%; Sm 25.16%

Source/Synthesis: Synth. by boiling Sm_2O_3 with $\text{F}_3\text{CSO}_3\text{H}$, followed by thermal dehydration

Use/Importance: Fluorescent

Physical Description: White solid

Solubility: Sol. H_2O

Other Data: Pyrolysis affords SmF_3

Aldrich: 42571-0

Fluka: 84470

>>Derivative: Nonahydrate

Synonym(s): Nonaquasamarium(3+) tris(trifluoromethanesulfonate)

CAS Registry Number: 67878-32-4

Molecular Formula: $\text{C}_3\text{H}_{18}\text{F}_9\text{O}_{18}\text{S}_3\text{Sm}$

Molecular Weight: 759.708

Accurate Mass: 760.870886

Percentage Composition: C 4.74%; H 2.39%; F 22.51%; O 37.91%; S 12.66%; Sm 19.79%

Physical Description: Yellow cryst.

Other Data: Contains $[\text{Sm}(\text{OH}_2)_9]^{3(+)}$ ions

References:

U.S. Pat., 1971, 3615169; *CA*, 1972, **76**, 5436, (*synth, use*)

Massaux, J. *et al.*, *Anal. Chim. Acta*, 1974, **73**, 416, (*electrochem*)

Roberts, J.E. *et al.*, *Thermochim. Acta*, 1978, **25**, 233, (*synth, tga*)

Vincentini, G. *et al.*, *J. Less-Common Met.*, 1983, **94**, 285, (*synth, complexes*)

Chatterjee, A. *et al.*, *Acta Cryst. B*, 1988, **44**, 381, (*hydrate, cryst struct*)

Hamidi, M.E.M. *et al.*, *Polyhedron*, 1994, **13**, 1787, (*synth, ir, Raman*)