



>>Entry Name: Tris(trifluoromethanesulfonato)gadolinium

Synonym(s): Gadolinium trifluoromethanesulfonate. Gadolinium triflate

CAS Registry Number: 52093-29-5

Related CAS Registry Numbers(s): 34629-24-8 85920-54-3

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

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

Molecular Weight: 604.461

Accurate Mass: 604.780171

Percentage Composition: C 5.96%; F 28.29%; Gd 26.01%; O 23.82%; S 15.91%

Source/Synthesis: Synth. by boiling $\text{GdCl}_3 \cdot n\text{H}_2\text{O}$ with $\text{F}_3\text{CSO}_3\text{H}$, followed by thermal dehydration

Physical Description: White solid

Solubility: Sol. H_2O

Aldrich: 42517-6

>>Derivative: Nonahydrate

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

CAS Registry Number: 85920-54-3

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

Molecular Weight: 766.598

Accurate Mass: 766.875256

Percentage Composition: C 4.70%; H 2.37%; F 22.30%; Gd 20.51%; O 37.57%; S 12.55%

Physical Description: Colourless cryst.

Solubility: Sol. H_2O , EtOH, MeCN

Other Data: Contains $\text{Gd}(\text{OH}_2)_9^{3(+)}$ ions which are tricapped trigonal prismatic. Affords GdF_3 on pyrolysis

References:

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

Harrowfield, J.Mc.B. *et al.*, *Aust. J. Chem.*, 1983, **36**, 483, (*synth, cryst struct, hydrate*)

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

Bellesis, G.H. *et al.*, *J. Appl. Phys.*, 1987, **61**, 3286, (*epr*)

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