



>>Entry Name: Tris(trifluoromethanesulfonato)lanthanum

Synonym(s): Lanthanum trifluoromethanesulfonate. Lanthanum triflate

CAS Registry Number: 52093-26-2

Related CAS Registry Numbers(s): 67878-29-9

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

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

Molecular Weight: 586.117

Accurate Mass: 585.762419

Percentage Composition: C 6.15%; F 29.17%; La 23.70%; O 24.57%; S 16.41%

Source/Synthesis: Synth. by boiling La_2O_3 with $\text{F}_3\text{CSO}_3\text{H}$, followed by thermal dehydration

Use/Importance: Commercially available. Used in manuf. of antiperspirants and in template synth. Catalyses range of amine-nitrile reactions

Physical Description: Hygroscopic white solid

Solubility: Sol. H_2O

Aldrich: 43060-9

Fluka: 61560

>>Derivative: Nonahydrate

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

CAS Registry Number: 85920-49-6

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

Molecular Weight: 748.254

Accurate Mass: 747.857504

Percentage Composition: C 4.82%; H 2.42%; F 22.85%; La 18.56%; O 38.49%; S 12.86%

Physical Description: Colourless needles

Solubility: Sol. H_2O , EtOH, MeCN

Other Data: Contains tricapped trigonal prismatic $\text{La}(\text{OH}_2)_9^{3(+)}$. Y, Gd, Lu analogues are isomorphous

References:

- Massaux, J. *et al.*, *Anal. Chim. Acta*, 1974, **73**, 416, (*polarog*)
Roberts, J.E. *et al.*, *Thermochim. Acta*, 1978, **25**, 233, (*synth, tga*)
Seminova, A. *et al.*, *Inorg. Chim. Acta*, 1980, **40**, 249, (*synth, ir, complexes*)
U.S. Pat., 1980, 4 219 540; *CA*, 1981, **94**, 36120, (*use*)
Harrowfield, J.Mc.B. *et al.*, *Aust. J. Chem.*, 1983, **36**, 483, (*hydrate, cryst struct*)
Vincentini, G. *et al.*, *J. Less-Common Met.*, 1983, **94**, 285, (*synth, complexes*)
Forsberg, J.H. *et al.*, *J.O.C.*, 1987, **52**, 1017, (*use*)
Chatterjee, A. *et al.*, *Acta Cryst. B*, 1988, **44**, 381, (*hydrate, cryst struct*)
Smith, P.H. *et al.*, *Inorg. Chem.*, 1988, **27**, 4154, (*use*)
Forsberg, J.H. *et al.*, *J. Het. Chem.*, 1988, **25**, 761, (*use*)
Hamidi, M.E.M. *et al.*, *Polyhedron*, 1994, **13**, 1787, (*synth, ir, Raman*)