



>>Entry Name: Scandium(III) chloride (ScCl₃)

Synonym(s): Scandium trichloride

CAS Registry Number: 10361-84-9

Related CAS Registry Numbers(s): 25813-71-2

ScCl₃

Molecular Formula: Cl₃Sc

Molecular Weight: 151.314

Accurate Mass: 149.86247

Percentage Composition: Cl 70.29%; Sc 29.71%

Source/Synthesis: Synth. from Sc₂O₃ + conc. HCl + NH₄Cl or by dehydration of hexahydrate with SOCl₂

Physical Description: White cryst.

Melting Point: Mp 968°

Boiling Point: Subl. 1342° *in vacuo*

Solubility: Sol. H₂O

Aldrich: 40935-9

>>Derivative: Hexahydrate

Synonym(s): Scandium(III) chloride hexahydrate

CAS Registry Number: 20662-14-0

Molecular Formula: Cl₃H₁₂O₆Sc

Molecular Weight: 259.405

Accurate Mass: 257.92586

Percentage Composition: Cl 41.00%; H 4.66%; O 37.01%; Sc 17.33%

Physical Description: Colourless hygroscopic cryst.

Melting Point: Mp 68° (dec.)

Solubility: V. sol. H₂O; sol. EtOH

Other Data: Loses H₂O above 60°. Forms oxychlorides above 240°

Aldrich: 45127-4

References:

Cleve, P.T., *Bull. Soc. Chim. Fr.*, 1879, **31**, 487, (*hexahydrate, synth*)

Crookes, W., *Philos. Trans. R. Soc. London, A*, 1908, **209**, 15; 1910, **210**, 359, (*hexahydrate, synth*)

Klemm, W. *et al.*, *Z. Anorg. Allg. Chem.*, 1947, **253**, 218, (*cryst struct*)

Wendlandt, W.W., *J. Inorg. Nucl. Chem.*, 1958, **5**, 118, (*hexahydrate, thermal dec*)

Petru, F. *et al.*, *Coll. Czech. Chem. Comm.*, 1960, **25**, 1143; 1968, **33**, 2720, (*Chexahydrate, ir, tga*)

Morrow, R.J. *et al.*, *J. Inorg. Nucl. Chem.*, 1962, **24**, 239, (*hexahydrate, ir*)

Crawford, N.P. *et al.*, *J.C.S.(A)*, 1969, 427, (*synth*)

Greenwood, N.N. *et al.*, *J.C.S.(A)*, 1969, 2878, (*ir, Raman*)

Sipachev, V.A. *et al.*, *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1969, **10**, 820; 1970, **15**, 905, (*hexahydrate, ir, Raman*)

Hart, F.A. *et al.*, *J. Organomet. Chem.*, 1970, **21**, 147, (*synth*)

Stotz, R.W. *et al.*, *Inorg. Chem.*, 1972, **11**, 1720, (*synth*)

Arkhangel'skii, I.V. *et al.*, *Zh. Neorg. Khim.*, 1972, **17**, 310; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1972, **17**, 163, (*hydrate, ir, tga*)

Gelivanov, G.K. *et al.*, *Zh. Fiz. Khim.*, 1973, **47**, 2182; *Russ. J. Phys. Chem. (Engl. Transl.)*, 1973, **47**, 1239, (*ir*)

Fjellr}ag, H. *et al.*, *Acta Chem. Scand.*, 1994, **48**, 294, (*nd*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, SBC000