



>>Entry Name: Scandium(III) perchlorate

Synonym(s): Scandium triperchlorate

CAS Registry Number: 14066-05-8

$\text{Sc}(\text{ClO}_4)_3$

Molecular Formula: $\text{Cl}_3\text{O}_{12}\text{Sc}$

Molecular Weight: 343.307

Accurate Mass: 341.80145

Percentage Composition: Cl 30.98%; O 55.92%; Sc 13.09%

Physical Description: White solid

Aldrich: 44414-6

>>Derivative: Hexahydrate

CAS Registry Number: 64924-42-1

Molecular Formula: $\text{Cl}_3\text{H}_{12}\text{O}_{18}\text{Sc}$

Molecular Weight: 451.398

Percentage Composition: Cl 23.56%; H 2.68%; O 63.80%; Sc 9.96%

Source/Synthesis: Obt. on drying heptahydrate over P_2O_5 ; or on drying at 110°

Physical Description: V. hygroscopic colourless cryst.

Other Data: Dec. above 110° successively to $\text{Sc}(\text{OH})(\text{ClO}_4)_2$, ScOCl , Sc_2O_3

>>Derivative: Heptahydrate

Molecular Formula: $\text{Cl}_3\text{H}_{14}\text{O}_{19}\text{Sc}$

Molecular Weight: 469.413

Percentage Composition: Cl 22.66%; H 3.01%; O 64.76%; Sc 9.58%

Physical Description: Hygroscopic colourless needle shaped cryst.

Solubility: V. sol. H_2O

>>Derivative: Cl_2O_6 adduct

Molecular Formula: $\text{Cl}_5\text{O}_{18}\text{Sc}$

Molecular Weight: 510.209

Percentage Composition: Cl 34.74%; O 56.45%; Sc 8.81%

Source/Synthesis: Synth. from hydrated ScCl_3 and Cl_2O_6

Physical Description: Orange solid

Other Data: Loses Cl_2O_6 at $95^\circ/10^{-2}$ mm

References:

Kilpatrick, M. *et al.*, *J. Electrochem. Soc.*, 1953, **100**, 85, (synth)

Petru, F. *et al.*, *Z. Chem.*, 1963, **3**, 473, (synth)

Belkova, M.M. *et al.*, *Zh. Fiz. Khim.*, 1966, **40**, 2546; *Russ. J. Phys. Chem. (Engl. Transl.)*, 1966, **40**, 1363, (thermal dec)

Korshunov, B.G. *et al.*, *Zh. Neorg. Khim.*, 1971, **16**, 3152; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1971, **16**, 1670, (synth)

Favier, F. *et al.*, *C. R. Hebd. Seances Acad. Sci. Ser. 2*, 1991, **313**, 619, (synth, ir, Raman)