



>>Entry Name: Dysprosium(III) perchlorate

Synonym(s): Dysprosium triperchlorate

CAS Registry Number: 14017-53-9

Related CAS Registry Numbers(s): 54690-38-9 61642-87-3

Dy(ClO₄)₃

Molecular Formula: Cl₃DyO₁₂

Molecular Weight: 460.851

Accurate Mass: 460.774707

Percentage Composition: Cl 23.08%; Dy 35.26%; O 41.66%

Source/Synthesis: Obt. by careful vacuum dehydration of hydrates or at 200-250° in Ar

Physical Description: Solid

Solubility: Sol. H₂O, MeOH, DMSO

Other Data: Dec. to DyOCl above 350°. Several hydrates known

Hazard & Toxicity: Potentially explosive

Aldrich: 44410-3

>>Derivative: Hexahydrate

CAS Registry Number: 14692-17-2

Molecular Formula: Cl₃DyH₁₂O₁₈

Molecular Weight: 568.942

Accurate Mass: 568.838097

Percentage Composition: Cl 18.69%; Dy 28.56%; H 2.13%; O 50.62%

Physical Description: Hygroscopic yellow cryst.

Solubility: Sol. H₂O, EtOH

Other Data: Prob. contains [Dy(H₂O)₆]³⁽⁺⁾ ions. Loses H₂O above 200°

>>Derivative: Octahydrate

CAS Registry Number: 90432-21-6

Molecular Formula: Cl₃DyH₁₆O₂₀

Molecular Weight: 604.973

Accurate Mass: 604.859227

Percentage Composition: Cl 17.58%; Dy 26.86%; H 2.67%; O 52.89%

Physical Description: Colourless cryst.

Solubility: Sol. H₂O

Other Data: Loses H₂O on heating

References:

Moeller, T. *et al.*, *J. Inorg. Nucl. Chem.*, 1965, **27**, 1477, (*synth*)

Bel'kova, M.M. *et al.*, *Zh. Neorg. Khim.*, 1965, **10**, 1374; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1965, **10**, 747, (*synth, dta*)

Forsberg, J.H. *et al.*, *Inorg. Chem.*, 1969, **8**, 883, (*synth*)

Birnbaum, E.R. *et al.*, *Inorg. Chem.*, 1973, **12**, 379, (*synth, haz*)

Cucinotta, V. *et al.*, *Thermochim. Acta*, 1976, **17**, 375, (*tga*)

Gmelin Handbook Inorg. Chem., Syst. No. 39, 1977, **C5**, 83; 116, (*rev*)

Petrov, K.I. *et al.*, *Zh. Neorg. Khim.*, 1977, **22**, 2141; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1977, **22**, 1158, (*ir*)

Legendziewicz, J. *et al.*, *J. Mol. Struct.*, 1984, **115**, 421, (*uv-vis*)

Legendziewicz, J. *et al.*, *Polyhedron*, 1984, **3**, 161, (*uv-vis*)

Wickleder, M.S. *et al.*, *Z. Anorg. Allg. Chem.*, 1999, **625**, 309-312, (*synth, xrd, anhyd*)

CA, **66**, 34344, (*synth*)