



>>Entry Name: Dysprosium(III) chloride (DyCl₃)

Synonym(s): Dysprosium trichloride

CAS Registry Number: 10025-74-8

Type of Compound Code(s): ND0310

DyCl₃

Molecular Formula: Cl₃Dy

Molecular Weight: 268.858

Accurate Mass: 268.835727

Percentage Composition: Cl 39.56%; Dy 60.44%

General Statement: Has YCl₃ struct. at r.t. but PuBr₃ struct. adopted at higher temps.

Physical Description: Hygroscopic white cryst.

Melting Point: Mp 718° (647, 654°)

Boiling Point: Bp 1530°

Solubility: Sol. H₂O, EtOH

Aldrich: 45083-9

>>Derivative: Hexahydrate

Synonym(s): Hexaaquadichlorodysprosium(1+) chloride

CAS Registry Number: 15059-52-6

Molecular Formula: Cl₃DyH₁₂O₆

Molecular Weight: 376.949

Accurate Mass: 376.899117

Percentage Composition: Cl 28.22%; Dy 43.11%; H 3.21%; O 25.47%

Physical Description: Bright yellow cryst.

Melting Point: Mp 162° (155°)

Other Data: Formulated as [DyCl₂(OH)₆]⁽⁺⁾Cl⁽⁻⁾. Begins to lose H₂O at 70°

Aldrich: 28927-2

Sigma: D1034

>>Derivative: Bis-DME complex

>>Derivative: Bis-THF complex

see Trichlorobis(tetrahydrofuran)dysprosium, [MKQ84-V](#)

References:

- Urbain, G. *et al.*, *C. R. Hebd. Seances Acad. Sci.*, 1908, **146**, 127, (*hexahydrate*)
Hönigschmid, O. *et al.*, *Z. Anorg. Allg. Chem.*, 1927, **165**, 284, (*hexahydrate*)
Templeton, D.H. *et al.*, *J. Phys. Chem.*, 1954, **58**, 940, (*cryst struct*)
Morrow, R.J. *et al.*, *J. Inorg. Nucl. Chem.*, 1962, **24**, 239, (*ir*)
Graeber, E.J. *et al.*, *Acta Cryst.*, 1966, **21**, 1012, (*cryst struct, hexahydrate*)
Ugro, J.V., *Nucl. Sci. Abstr.*, 1967, **21**, 30396; *CA*, **69**, 55126, (*hexahydrate*)
Brown, D., *Halides of the Lanthanides and Actinides*, Wiley-Interscience, 1968, 148, (*rev*)
Weigel, F. *et al.*, *Chem. Ber.*, 1969, **102**, 5, (*struct*)
Basile, L.J. *et al.*, *J. Chem. Phys.*, 1971, **55**, 3729, (*ir*)
Beck, H.P. *et al.*, *Z. Anorg. Allg. Chem.*, 1979, **453**, 79, (*synth, struct*)
Gmelin Handbook Inorg. Chem., Syst. No. 39, 1982, **C4a**, 51; **C4b**, 276, (*rev*)
Lee, E.P.F. *et al.*, *Proc. R. Soc. London, A*, 1982, **381**, 373, (*pe*)
Friedt, J.M. *et al.*, *Inorg. Chem.*, 1983, **22**, 2910, (*synth, Mössbauer*)
Inorg. Synth., 1983, **22**, 39; 1989, **25**, 146, (*synth*)
Uwamino, Y. *et al.*, *Bull. Chem. Soc. Jpn.*, 1986, **59**, 2263, (*pe*)
Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, DYG600