



**>>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(ClO<sub>4</sub>)<sub>3</sub>

**Molecular Formula:** Cl<sub>3</sub>DyO<sub>12</sub>

**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. H<sub>2</sub>O, 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:** Cl<sub>3</sub>DyH<sub>12</sub>O<sub>18</sub>

**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. H<sub>2</sub>O, EtOH

**Other Data:** Prob. contains [Dy(H<sub>2</sub>O)<sub>6</sub>]<sup>3(+)</sup> ions. Loses H<sub>2</sub>O above 200°

**>>Derivative:** Octahydrate

**CAS Registry Number:** 90432-21-6

**Molecular Formula:** Cl<sub>3</sub>DyH<sub>16</sub>O<sub>20</sub>

**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. H<sub>2</sub>O

**Other Data:** Loses H<sub>2</sub>O 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*)

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

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