



>>Entry Name: Lutetium(III) perchlorate

Synonym(s): Lutetium triperchlorate

CAS Registry Number: 14646-29-8

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

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

Molecular Weight: 473.318

Accurate Mass: 471.786306

Percentage Composition: Cl 22.47%; Lu 36.97%; O 40.56%

Source/Synthesis: Synth. by dehydration of hydrate with hot MeCN

Physical Description: Colourless solid

Solubility: Sol. H_2O , MeOH, DMSO

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

Hazard & Toxicity: Potentially explosive

Aldrich: 44389-1

>>Derivative: Hexahydrate

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

Molecular Weight: 581.409

Accurate Mass: 579.849696

Percentage Composition: Cl 18.29%; H 2.08%; Lu 30.09%; O 49.53%

Physical Description: Colourless cryst.

Solubility: Sol. H_2O , EtOH

Other Data: Prob. contains $\text{Lu}(\text{H}_2\text{O})_6^{3(+)}$ ions

>>Derivative: Octahydrate

CAS Registry Number: 14692-13-8

Molecular Formula: $\text{Cl}_3\text{H}_{16}\text{LuO}_{20}$

Molecular Weight: 617.44

Accurate Mass: 615.870826

Percentage Composition: Cl 17.23%; H 2.61%; Lu 28.34%; O 51.82%

Physical Description: Colourless cryst.

Solubility: Sol. H_2O

Other Data: Loses 5 mol H_2O above 155°

References:

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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*)

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