

Volume 64 | Part 10 | October 2008 | Pages m1280-m1281 | 10.1107/S1600536808029243

Tricaesium tris(pyridine-2,6-dicarboxylato-κ³O²,N,O⁶)lutetium(III) octahydrate

V. Legrand, F. Aubert, A. D'Aléo, P. Rabiller and O. Maury

Tricaesium tris(pyridine-2,6-dicarboxylato-κ³O²,N,O⁶)lutetium(III) octahydrate

Colourless block crystals of the title compound, $Cs_3[Lu(dipic)_3]\cdot 8H_2O$ [dipic is dipicolinate or pyridine-2,6dicarboxylate, $C_7H_3NO_4$] were synthesized by slow evaporation of the solvent. The crystal structure of this Lu^{III}-complex, isostructural with the Dy^{III} and Eu^{III} complexes, was determined from a crystal twinned by inversion and consists of discrete [Lu(dipic)_3]³⁻ anions, Cs⁺ cations and water molecules involving hydrogen bonding. The Lu atom lies on a twofold rotation axis and is coordinated by six O atoms and three N atoms of three dipicolinate ligands. One Cs atom is also on a twofold axis. The unit cell can be regarded as successive layers along the crystallographic *c*-axis formed by [Lu(dipic)_3]³⁻ anionic planes and [Cs⁺, H₂O] cationic planes. In the crystal structure, although the H atoms attached to water molecules could not be located, short O—O contacts clearly indicate the occurrence of an intricate hydrogenbonded network through contacts with other water molecules, Cs cations or with the O atoms of the dipicolinate ligands.



Figure 1. The molecular structure of $[Lu(dipic)_3]^{3-}$ with the atom numbering scheme. Displacement ellipsoids are drawn at 50% probability level and H atoms are omitted for clarity ...





Legrand et al.

Volume 64 | Part 10 | October 2008 | Pages m1280-m1281 | 10.1107/S1600536808029243

Figure 2. Crystal packing of $Cs_3[Lu(dipic)_3] \cdot 8H_2O$ with hydrogen bonds (in dotted line) and coordinate bonds to caesium. $[Lu(dipic)_3]^{3-}$ anions and Cs^+ ...





Volume 64 | Part 10 | October 2008 | Pages m1280–m1281 | 10.1107/S1600536808029243

Legrand et al.