

CuHo₂[B₂O₅]₂: Ein unerwarteter Strukturtyp in der Reihe der Kupferlanthanoidborate

CuHo₂[B₂O₅]₂: An Unexpected Structure Type in the Series of Copper Lanthanoid Borates

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Single crystals of the new compound CuHo₂[B₂O₅]₂ were obtained by using a B₂O₃ flux technique with CuO and Ho₂O₃ at 1050 °C. X-ray investigations on single crystals led to the space group P 2₁/c (Nr. 14) with lattice parameters $a = 454.3(2)$; $b = 726.0(4)$; $c = 936.0(5)$ pm; $\beta = 90.77(1)^\circ$; $Z = 2$. The compound is isotypic to CuTb₂[B₂O₅]₂ as well as to the gadolinite structure (FeY₂[BeSiO₅]₂). The structure exhibits layer-like $^{2-}_{\infty}[\text{B}_2\text{O}_5]^{4-}$, a two-dimensional anion consisting of edge sharing BO₄-tetrahedra, which form four- and eight-membered rings. The layers are connected by elongated CuO₆-octahedra and slightly distorted tetragonal LnO₈-antiprisms.

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