

Zur Kristallchemie der Kupfer(II)-Zinktellurate $\text{Cu}_5\text{Zn}_4\text{Te}_3\text{O}_{18}$ und $\text{Cu}_{1,5}\text{Zn}_{1,5}\text{TeO}_6$, mit einer Notiz über $\text{Cu}_{1,5}\text{Co}_{1,5}\text{TeO}_6$

On the Crystal Chemistry of the Copper(II) Zinc Tellurates $\text{Cu}_5\text{Zn}_4\text{Te}_3\text{O}_{18}$
and $\text{Cu}_{1,5}\text{Zn}_{1,5}\text{TeO}_6$ with a Note on $\text{Cu}_{1,5}\text{Co}_{1,5}\text{TeO}_6$

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Copper, Zinc, Cobalt, Tellurate, Crystal Structure

Single crystals of $\text{Cu}_5\text{Zn}_4\text{Te}_3\text{O}_{18}$ (I), $\text{Cu}_{1,5}\text{Zn}_{1,5}\text{TeO}_6$ (II) and $\text{Cu}_{1,5}\text{Co}_{1,5}\text{TeO}_6$ (III) have been prepared and investigated by X-ray work. The structure of (I) was solved in the monoclinic space group C_2^3-C2 , $a = 14.834(2)$, $b = 8.801(1)$, $c = 10.375(2)$ Å, $\beta = 93.27(2)^\circ$, $Z = 4$. (II) and (III) crystallize with cubic symmetry, space group $T_h^7-Ia\bar{3}$, $a_{(II)} = 9.557(1)$, $a_{(III)} = 9.570(1)$ Å, $Z = 8$. (I) shows a complicated structure formed by TeO_6 octahedra isolated from each other, Zn_2O_6 double tetrahedra and Zn_2O_8 double square pyramids. These polyhedra are incorporated into a network of edge and corner connected stretched CuO_6 octahedra. (II) and (III) are isotypic to Cu_3TeO_6 and have a $(\text{Cu}/\text{M})_3\text{O}_6$ octahedra network, statistically occupied by Cu^{2+} and Zn^{2+} or Cu^{2+} and Co^{2+} .

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