

Oligomere Tetraeder-Anionen in Borophosphaten: Sechseringe mit offenen und cyclischen Phosphat-Verzweigungen in der Kristallstruktur von $K_6Cu_2[B_4P_8O_{28}(OH)_6]$

Oligomeric Tetrahedral Anions in Borophosphates:
Six-Membered Rings with Open and Cyclic Phosphate Branchings in the Crystal
Structure of $K_6Cu_2[B_4P_8O_{28}(OH)_6]$

Insan Boy, Gerhard Cordier, Rüdiger Kniep*

Eduard-Zintl-Institut der Technischen Universität Darmstadt,
Hochschulstrasse 10, D-64289 Darmstadt

Herrn Prof. Dr. Bernt Krebs zum 60. Geburtstag gewidmet

Z. Naturforsch. **53 b**, 1440–1444 (1998); eingegangen am 23. Juli 1998

Boron, Phosphorus, Tetrahedral Anions

Crystals of $K_6Cu_2[B_4P_8O_{28}(OH)_6]$ were grown under hydrothermal conditions at 160 °C. The crystal structure (monoclinic, $P 2_1/c$ (Nr. 14), $a = 961.8(1)$, $b = 1755.0(1)$, $c = 942.0(1)$ pm, $\beta = 112.29(1)^\circ$, $Z = 2$) contains oligomeric tetrahedral anions based on six-membered rings $\{B_4P_2O_{10}O_{8/2}\}$ with additional branchings by hydrogenphosphate-groups (open branching: $4 \times HPO_3O_{1/2}$; cyclic branching: $2 \times HPO_2O_{2/2}$). The complex borophosphate anion is represented by the formula $[B_4P_8O_{28}(OH)_6]^{10-}$. Cu^{2+} is in a tetragonal pyramidal and K^+ in an irregular coordination by eight and nine oxygen ligands, respectively.

* Sonderdruckanforderungen an Prof. Dr. R. Kniep; e-mail: di3j@hrzpub.tu-darmstadt.de