

# **K[B<sub>6</sub>PO<sub>10</sub>(OH)<sub>4</sub>]: Ein Borophosphat mit gestreckten Bändern aus Tetraeder-Vierer-Ringen und offen-zyklischen Verzweigungen über planare B<sub>2</sub>O<sub>3</sub>(OH)<sub>2</sub>-Gruppen**

K[B<sub>6</sub>PO<sub>10</sub>(OH)<sub>4</sub>]: A Borophosphate Containing Rods of Tetrahedral Vierer-Rings with Additional Open-Loop Branchings *via* Planar B<sub>2</sub>O<sub>3</sub>(OH)<sub>2</sub> Groups

Insan Boy<sup>a</sup> und Rüdiger Kniep<sup>a,b,\*</sup>

<sup>a</sup> Eduard-Zintl-Institut der Technischen Universität Darmstadt,  
Hochschulstr. 10, D-64289 Darmstadt

<sup>b</sup> Max-Planck-Institut für Chemische Physik fester Stoffe,  
Pirnaer Landstr. 176, D-01257 Dresden

\* Sonderdruckerfordernungen an Prof. Dr. R. Kniep. E-mail: di3j@hrzpub.tu-darmstadt.de

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Boron, Phosphorus, Tetrahedral Rods, Planar Borate Groups

K[B<sub>6</sub>PO<sub>10</sub>(OH)<sub>4</sub>] was prepared under mild hydrothermal conditions (T = 170 °C) from a concentrated solution of K<sub>2</sub>B<sub>4</sub>O<sub>7</sub> · 4H<sub>2</sub>O, KH<sub>2</sub>PO<sub>4</sub>, and HCl (18%). The crystal structure of the tetragonal compound was solved by X-ray single crystal methods (space group P 4/ncc, No 130): *a* = 1209.66(13), *c* = 759.05(7) pm; Z = 4. The anionic partial structure consists of infinite rods of  $\infty^1$  [B<sub>6</sub>PO<sub>10</sub>(OH)<sub>4</sub>]<sup>−</sup> which are built of vierer-rings of alternating BO<sub>4</sub> and PO<sub>4</sub> tetrahedra with additional open-loop branchings *via* planar B<sub>2</sub>O<sub>3</sub>(OH)<sub>2</sub> groups at the BO<sub>4</sub> units by sharing common oxygen functions. Potassium (K<sup>+</sup>) is located within structural channels running along [001]; the eightfold coordination by oxygen (OH-groups) results in a (slightly) distorted tetragonal antiprism.