High-pressure Synthesis and Crystal Structure of the Vanadium Orthoborate VBO$_3$

Almut Haberer$^{a,b}$ and Hubert Huppertz$^{a,b}$

$^a$ Department Chemie und Biochirn, Ludwig-Maximilians-Universität München, Butenandtstraße 5 – 13 (Haus D), 81377 München, Germany

$^b$ Institut für Allgemeine, Anorganische und Theoretische Chemie, Leopold-Franzens-Universität Innsbruck, Innrain 52a, A-6020 Innsbruck, Austria

Reprint requests to H. Huppertz. E-mail: hubert.huppertz@uibk.ac.at

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Dedicated to Professor Gérard Demazeau on the occasion of his 65th birthday

The vanadium orthoborate VBO$_3$ was synthesized under high-pressure/high-temperature conditions of 7.5 GPa and 1250 ºC in a Walker-type multianvil apparatus. The crystal structure was determined on the basis of single crystal X-ray diffraction data, collected at r.t. The title compound crystallizes in the trigonal calcite structure, space group $R\bar{3}c$, with the lattice parameters $a = 462.0(1)$ and $c = 1450.9(3)$ pm. Within the trigonal planar BO$_3$ groups, the B–O distance is 138.8(3) pm. The vanadium atoms have a slightly distorted octahedral oxygen coordination (V–O: 202.3(2) pm).

**Key words:** High Pressure, Crystal Structure, Multianvil, Orthoborate, Calcite