p-Veatchite $Sr_2B_{11}O_{16}(OH)_5 \cdot H_2O$

Crystal Data: Monoclinic. *Point Group:* 2. Crystals are platy, with rhombic outline, to 3 mm.

Physical Properties: *Cleavage:* On {010}, perfect; on {001}, good. Hardness = n.d. D(meas.) = 2.60–2.65 D(calc.) = [2.68–2.74]

Optical Properties: Semitransparent. *Color:* White.
Optical Class: Biaxial (+). *Orientation:* $X = c$; $Z \wedge a = 29°40'$. $\alpha = 1.550(2)$ $\beta = 1.553(2)$ $\gamma = 1.620(2)$ 2V(meas.) = n.d. 2V(calc.) = 25°

Cell Data: *Space Group:* $P2_1$. $a = 6.70$–6.74 $b = 20.62$–20.80 $c = 6.58$–6.63 $\beta = 119°15'-119°40'$ Z = 2

X-ray Powder Pattern: Königshall-Hindenburg mine, Germany; nearly identical to veatchite.
10.4 (100), 3.31 (60), 2.592 (30), 5.64 (20), 3.46 (20), 3.38 (15), 5.10 (10)

Chemistry:

	(1)	(2)
B_2O_3	58.0	58.62
SrO	32.4	31.73
H_2O	9.6	9.65
Total	100.0	100.00

(1) Russia. (2) $Sr_2B_{11}O_{16}(OH)_5 \cdot H_2O$.

Polymorphism & Series: Trimorphous with veatchite and veatchite-A.

Occurrence: A very rare component of marine evaporite salt deposits.

Association: Halite, anhydrite, boracite, magnesite, pyrite, quartz.

Distribution: From the Königshall-Hindenburg potash mine, Reyershausen, near Göttingen, Lower Saxony, Germany. In the Boulby potash mine, northwest of Whitby, Yorkshire, England. From an undisclosed locality in Russia.

Name: The prefix "*p*" used to represent a primitive unit cell, and for its close relation to *veatchite*.

Type Material: National Museum of Natural History, Washington, D.C., USA, 113264.

References: (1) Braitsch, O. (1959) Über *p*-Veatchit, eine neue Veatchit-Varietät aus dem Zechsteinsalz. Beiträge zur Mineralogie und Petrographie, 6, 352–356 (in German). (2) (1959) Amer. Mineral., 44, 1323 (abs. ref. 1). (3) Clark, J.R and M.E. Mrose (1960) Veatchite and *p*-veatchite. Amer. Mineral., 45, 1221–1229. (4) Rumanova, I.M. and O. Gandymov (1971) Crystal structure of the natural strontium borate *p*-veatchite $Sr_2[B_5O_8(OH)]_2 \cdot B(OH)_3 \cdot H_2O$. Kristallografiya (Sov. Phys. Crystal.), 16, 99–106. (5) Clark, J.R. and C.L. Christ (1971) Veatchite: crystal structure and correlations with *p*-veatchite. Amer. Mineral., 56, 1934–1954. (6) Rastsvetaeva, R.K., A.P. Khomyakov, and T.N. Sokolova (1993) Crystal structure of high-calcium *p*-veatchite and its place in the layered $[B_5O_8OH]^{2-}$ series. Crystallog. Reports, 38(2), 180–185.