Weinebeneite $CaBe_3(PO_4)_2(OH)_2 \cdot 4H_2O$

Crystal Data: Monoclinic. *Point Group:* m. Platy crystals, flattened on {001}, elongated parallel [100], showing {001}, {00$\bar{1}$}, {110}, {$\bar{1}$10}, {010}, half-a-dozen others, to 0.5 mm, typically in rosettes.

Physical Properties: *Fracture:* Irregular to splintery. *Tenacity:* Brittle. Hardness = 3–4 D(meas.) = 2.15(4) D(calc.) = 2.17

Optical Properties: Transparent to translucent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous.
Optical Class: Biaxial (+). *Orientation:* $Z \wedge c = 42°$. $\alpha = 1.520(1)$ $\beta = 1.520(1)$ $\gamma = 1.530(1)$ 2V(meas.) = $< 10°$

Cell Data: *Space Group:* Cc. $a = 11.897(2)$ $b = 9.707(1)$ $c = 9.633(1)$ $\beta = 95.76(1)°$ Z = 4

X-ray Powder Pattern: Weinebene Pass, Austria.
2.513 (100), 3.421 (70), 5.92 (60), 2.959 (60), 4.33 (49), 2.945 (45), 4.85 (44)

Chemistry:

	(1)	(2)
P_2O_5	39.2	39.09
BeO	21.1	20.66
CaO	15.5	15.44
H_2O	25.5	24.81
Total	101.3	100.00

(1) Weinebene Pass, Austria; by electron microprobe, Be by AA, H_2O by LOI; corresponds to $Ca_{0.99}Be_{3.02}(PO_4)_{1.97}(OH)_{2.11} \cdot 4H_2O$. (2) $CaBe_3(PO_4)_2(OH)_2 \cdot 4H_2O$.

Mineral Group: Zeolite group.

Occurrence: In fractures in a spodumene-rich pegmatite in high-grade metamorphic rocks.

Association: Roscherite, fairfieldite, uralolite.

Distribution: From the Weinebene Pass, Carinthia, Austria.

Name: For its occurrence in the Weinebene Pass, Austria.

Type Material: Landesmuseum Joanneum, Graz; Kärtner Landesmuseum, Klagenfurt; Natural History Museum, Vienna, Austria.

References: (1) Walter, F. (1992) Weinebeneite, $CaBe_3(PO_4)_2(OH)_2 \cdot 4H_2O$, a new mineral species: mineral data and crystal structure. Eur. J. Mineral., 4, 1275–1283. (2) (1993) Amer. Mineral., 78, 847–848 (abs. ref. 1).