

Crystal Data: Monoclinic, pseudo-orthorhombic. *Point Group:* 2/m. As rounded or etched crystals, dominantly {111}, with {112}, {113}, $\{\bar{1}01\}$, $\{\bar{1}02\}$, $\{\bar{3}02\}$, to 0.2 mm, commonly in aggregates.

Physical Properties: *Fracture:* Conchoidal. Hardness = 4.5 VHN = 320 (15 g load). D(meas.) = n.d. D(calc.) = 6.87

Optical Properties: Transparent to translucent. *Color:* Brown. *Streak:* Yellow. *Luster:* Adamantine.

Optical Class: Biaxial (+). *Orientation:* $X = b$; $Z \wedge c \simeq 35^\circ$. $\alpha = 2.26(2)$ $\beta = [2.27]$ $\gamma = 2.30(2)$ $2V(\text{meas.}) = 50(5)^\circ$

Cell Data: *Space Group:* $P2_1/c$. $a = 6.791(1)$ $b = 7.535(1)$ $c = 10.881(1)$ $\beta = 107.00(1)^\circ$ $Z = 4$

X-ray Powder Pattern: Hechtsberg quarry, Germany.

3.267 (100), 3.150 (63), 4.279 (41), 2.734 (35), 2.036 (29), 2.549 (27), 2.133 (27)

Chemistry:

| | (1) | (2) |
|--------------------------------|----------|--------|
| As ₂ O ₅ | 0.52 | |
| V ₂ O ₅ | 15.18 | 16.07 |
| Bi ₂ O ₃ | 83.02 | 82.34 |
| H ₂ O | [1.59] | 1.59 |
| Total | [100.31] | 100.00 |

(1) Hechtsberg quarry, Germany; by electron microprobe, H₂O from theory; corresponds to Bi_{2.03}O_{1.08}[(VO₄)_{0.95}(AsO₄)_{0.03}]_{Σ=0.98}(OH)_{1.01}. (2) Bi₂O(VO₄)(OH).

Occurrence: In cavities in gneiss.

Association: Bismutite, namibite, eulytite, mixite, beyerite, chrysocolla.

Distribution: In the Hechtsberg quarry, near Hausach, Black Forest, Germany.

Name: For the Hechtsberg quarry, Germany, source of the first specimens.

Type Material: Institute for Mineralogy, Ruhr University, Bochum, Germany.

References: (1) Krause, W., H.-J. Bernhardt, G. Blass, H. Effenberger, and H.-W. Graf (1997) Hechtsbergite, Bi₂O(OH)(VO₄), a new mineral from the Black Forest, Germany. Neues Jahrb. Mineral., Monatsh., 271–287. (2) (1998) Amer. Mineral., 83, 400–401 (abs. ref. 1).