

Arsenbrackebuschite

$\text{Pb}_2(\text{Fe}^{3+}, \text{Zn})(\text{AsO}_4)_2(\text{OH}, \text{H}_2\text{O})$

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Crystal Data: Monoclinic. *Point Group:* $2/m$. As tiny flat plates or laths, to 0.5 mm; also very fine-grained, massive. *Twinning:* Complex, observed.

Physical Properties: *Cleavage:* Perfect on $\{010\}$. Hardness = 4–5 $D(\text{meas.}) = \text{n.d.}$
 $D(\text{calc.}) = 6.54$

Optical Properties: Semitransparent. *Color:* Honey-yellow, yellow, brown, green.
Streak: Pale brownish. *Luster:* Resinous to adamantine.
Optical Class: Biaxial (–). *Pleochroism:* Honey-yellow to bright yellow. $n = 2.0\text{--}2.1$

Cell Data: *Space Group:* $P2_1/m$. $a = 7.763(1)$ $b = 6.046(1)$ $c = 9.022(1)$
 $\beta = 112.5(1)^\circ$ $Z = 2$

X-ray Powder Pattern: Tsumeb, Namibia.

3.012 (100d), 3.268 (90), 2.777 (60), 2.313 (30), 2.133 (30), 4.92 (25), 3.68 (25)

Chemistry:

	(1)
P_2O_5	0.17
As_2O_5	30.5
Fe_2O_3	6.5
FeO	
ZnO	3.1
PbO	59.4
H_2O	n.d.
Total	99.67

(1) Tsumeb, Namibia; by electron microprobe, total Fe as Fe_2O_3 .

Mineral Group: Brackebuschite group.

Occurrence: In fissures in dolomite breccia in the oxidized zone of a dolostone-hosted hydrothermal polymetallic ore deposit (Tsumeb, Namibia); in a hydrothermal polymetallic barite–fluorite deposit (Clara mine, Germany).

Association: Beudantite, anglesite, mimetite, bayldonite, stolzite (Clara mine, Germany).

Distribution: From Tsumeb, Namibia. In the Clara mine, near Oberwolfach, Black Forest, Germany. From Brixlegg, Tirol, Austria. At the Horner mine, Hachita, Grant Co., New Mexico, USA.

Name: As the arsenate analog of *brackebuschite*.

Type Material: Institute for Geosciences, University of Mainz, Mainz; Institute for Mineralogy and Crystallography, University of Stuttgart, Stuttgart, Germany.

References: (1) Abraham, K., K. Kautz, E. Tillmanns, and K. Walenta (1978) Arsenbrackebuschite, $\text{Pb}_2(\text{Fe}, \text{Zn})(\text{OH}, \text{H}_2\text{O})[\text{AsO}_4]_2$, a new arsenate mineral. Neues Jahrb. Mineral., Monatsh., 193–196. (2) Hofmeister, W. and E. Tillmanns (1976) Strukturelle Beziehungen zwischen Arsenbrackebuschit und Tsumcorit. Fortschr. Mineral., 54, 38 (in German). (3) (1978) Amer. Mineral., 63, 1282 (abs. refs. 1 and 2). (4) Hofmeister, W. and E. Tillmanns (1978) Strukturelle Untersuchungen an Arsenbrackebuschit. Tschermaks Mineral. Petrog. Mitt., 25, 153–163 (in German with English abs.).