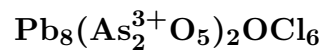


Gebhardite



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Crystal Data: Monoclinic. *Point Group:* 2/m. Crystals elongated along [010], to 5 mm, with {100} and {001}; parallel, subparallel, curved, in fibrous groups.

Physical Properties: *Cleavage:* {001}, perfect; {010}, good. *Hardness* = ~3
VHN = 80–180 D(meas.) = n.d. D(calc.) = 6.0

Optical Properties: Transparent. *Color:* Brown. *Streak:* White. *Luster:* Adamantine.
Optical Class: Biaxial (-). *Pleochroism:* Faint; X = Y = pale brown; Z = brown. *Orientation:* Z = b; X \wedge a = 3°. *Dispersion:* r \gg v, with marked horizontal dispersion. $\alpha = 2.08$ $\beta = \text{n.d.}$
 $\gamma = 2.12$ 2V(meas.) = 34(1)°

Cell Data: *Space Group:* P2₁/c. a = 6.724(6) b = 11.20(1) c = 34.19(4) $\beta = 85.2(1)^\circ$
Z = [4]

X-ray Powder Pattern: Tsumeb, Namibia.
6.70 (100), 3.72 (80), 3.68 (80), 2.801 (80), 3.55 (70), 3.15 (70), 2.925 (60)

Chemistry:	(1)
As ₂ O ₃	16.7
PbO	75.1
Cl	8.9
-O = Cl ₂	2.0
Total	98.7

(1) Tsumeb, Namibia; by electron microprobe, As³⁺ valence determined by microchemical analysis; corresponds to Pb_{7.99}As_{3.99}³⁺Cl_{5.96}O₁₁.

Occurrence: On a specimen of highly oxidized ore from the lower oxidation zone of a dolostone-hosted hydrothermal polymetallic ore deposit.

Association: Reinerite, mimetite, smithsonite, willemite, hematite, fraipontite, quartz.

Distribution: From Tsumeb, Namibia.

Name: To honor Dr. Georg Gebhard (1945–), German chemist, mineral collector, and authority on rare minerals, who supplied the specimen.

Type Material: National School of Mines, Paris, France; National Museum of Natural History, Washington, D.C., USA, 147360.

References: (1) Medenbach, O., W. Gebert, and K. Abraham (1983) Gebhardit, Pb₈OCl₆(As₂O₅)₂, ein neues Arsenit von Tsumeb, Südwest-Afrika/Namibia. Neues Jahrb. Mineral., Monatsh., 445–450 (in German with English abs.). (2) (1985) Amer. Mineral., 70, 215 (abs. ref. 1). (3) Klaska, R. and W. Gebert (1982) Polytypie und Struktur von Gebhardit – Pb₈OCl₆(As₂O₅)₂. Zeits. Krist., 159, 75–76 (in German).