

Schlemaite**(Cu, □)₆(Pb, Bi)Se₄**

Crystal Data: Monoclinic. *Point Group:* 2/m. As anhedral grains and aggregates to several hundred micrometers.

Physical Properties: *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 3 VHN = 92-116, 106 average (25 g load). D(meas.) = n.d. D(calc.) = 7.54

Optical Properties: Opaque. *Color:* Black, gray in reflected light. *Streak:* Black. *Luster:* Metallic. *Optical Class:* n.d. Very weak bireflectance and anisotropy, rotation tints of pale metallic orange and blue. Nonpleochroic.

R₁-R₂: (470) 36.6-38.1 (21.1-23.0)_{oil}, (546) 36.45-38.1 (20.7-22.8)_{oil}, (589) 36.6-38.3 (20.95-22.9)_{oil}, (650) 36.6-38.5 (21.0-23.2)_{oil}

Cell Data: *Space Group:* P2₁/m. *a* = 9.5341(8) *b* = 4.1004(3) *c* = 10.2546(8) *β* = 100.033(2)° *Z* = 2

X-ray Powder Pattern: Niederschlema-Alberoda vein, western Erzgebirge, Saxony, Germany. 3.189 (100), 3.123 (100), 2.058 (80), 2.788 (70), 2.601 (70), 2.151 (60), 2.505 (50)

Chemistry:	(1)	(2)
Cu	38.86	42.16
Ag	2.57	
Au	0.07	
Hg	0.09	
Pb	13.75	22.92
Bi	9.12	
Se	35.11	34.92
Total	99.57	100.00

(1) Niederschlema-Alberoda vein, western Erzgebirge, Saxony, Germany; average of 22 electron microprobe analyses; corresponds to (Cu_{5.50}Ag_{0.21})_{Σ=5.71}(Pb_{0.60}Bi_{0.39})_{Σ=0.99}Se₄. (2) Cu₆PbSe₄.

Occurrence: In vein-type uranium deposit.

Association: Clausthalite, eucairite, löllingite, berzelianite, tiemannite, umangite, bohdanowiczite, dolomite, ankerite.

Distribution: From the "Tiber" dike, on the -855-m level, block 5128, near the main shaft (No. 371), Niederschlema-Alberoda vein, near Hartenstein, western Erzgebirge, Saxony, Germany.

Name: For the *Schlema*-Alberoda ore field in the ancient mining region of Saxony, Germany, where in the first samples were collected.

Type Material: The Natural History Museum, London, England (BM 2003,4), and the Mineralogical Institute, Technische Universität Bergakademie, Freiberg, Germany (80824).

References: (1) Förster, H.-J., M.A. Cooper, A.C. Roberts, C.J. Stanley, A.J. Criddle, F.C. Hawthorne, J.H.G. Laflamme, and G. Tischendorf (2003) Schlemaite, (Cu, □)₆(Pb, Bi)Se₄, a new mineral species from Niederschlema-Alberoda, Erzgebirge, Germany: description and crystal structure. *Can. Mineral.*, 41, 1433-1444. (2) (2004) *Amer. Mineral.*, 89(10), 1577 (abs. ref. 1).