

Crystal Data: Monoclinic. *Point Group:* 2/m. As isolated grains and intimately intergrown with pavonite or benjaminite or both, to 300 μm .

Physical Properties: *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle. *D(meas.)* = n.d. *D(calc.)* = 6.74 *Hardness* = 3.5 *VHN* = 190 (50 g load).

Optical Properties: Opaque. *Color:* Grayish white in both plain and reflected light. *Streak:* n.d. *Luster:* Metallic. *Anisotropism:* Distinct, bluish gray to brownish gray. *Pleochroism:* Distinct, shades of gray.

Optical Class: n.d.

R₁-R₂: (470) 41.5-48.3, (546) 40.9-47.0, (589) 40.4-46.6, (650) 39.9-46.1

Cell Data: *Space Group:* C2/m. *a* = 13.380(3) *b* = 4.0492(9) *c* = 18.690(4) β = 105.494(4)° *Z* = 1

X-ray Powder Pattern: Erzwies mining district, province of Salzburg, Austria. 2.861 (100), 3.452 (90), 3.578 (58), 3.331 (36), 3.301 (40), 2.025 (25), 2.225 (24)

Chemistry:	(1)	(2)
Cu	1.68	
Ag	11.56	13.61
Pb	4.64	
Bi	63.82	68.58
Te	0.34	
S	17.52	17.81
Total	99.57	100.00

(1) Erzwies mining district, province of Salzburg, Austria; average of 37 electron microprobe analyses; corresponds to Cu_{1.06}Ag_{4.24}Pb_{0.9}Bi_{12.23}S_{21.89}Te_{0.11}. (2) Ag₅Bi₁₃S₂₂.

Occurrence: From mineralized (metallic sulfosalts) hydrothermal quartz veins.

Association: Bismuthinite, krupkaite, pavonite, benjaminite, gustavite, heyrovskyite, cosalite, and traces of tetradymite, native gold, pyrite.

Distribution: From the Erzwies mining district, Hohe Tauern region, west of the Gasteinertal, province of Salzburg, Austria.

Name: Honors Dr. Dan Topa (b. 1955), ore mineralogist and crystallographer, University of Salzburg, Austria, for his work on sulfosalt crystal chemistry and structures.

Type Material: Department of Materials Research and Physics (Division of Mineralogy), University of Salzburg, Austria.

References: (1) Makovicky, E., W.H. Parr, H. Putz, and G. Zagler (2010) Dantopaite, Ag₅Bi₁₃S₂₂, the ⁶P natural member of the pavonite homologous series, from Erzwies, Austria. *Can. Mineral.*, 48, 467-481. (2) (2011) *Amer. Mineral.*, 96, 939-940 (abs. ref. 1).