Ferdowsiite

\[ \text{Ag}_8(\text{Sb}_5\text{As}_3)_{\Sigma=8}\text{S}_{16} \]

**Crystal Data**: Monoclinic. *Point Group*: 2/m. As elongated crystals in barite, to 400 μm, as worm-like symplectites with ferroan tetrahedrite-tennantite, and sometimes envelopes arsenquatrandorite.

**Physical Properties**: *Cleavage*: None. *Fracture*: Irregular. *Tenacity*: Brittle. Hardness = 2.5-3 \ VHN = 92 (100 g load). \( D(\text{meas.}) = \text{n.d.} \) \( D(\text{calc.}) = 5.3 \)


**Cell Data**: *Space Group*: \( P2_1/n \). \( a = 8.677(2) \) \( b = 5.799(1) \) \( c = 13.839(3) \) \( \beta = 96.175(4)^\circ \) \( Z = 1 \)

**X-ray Powder Pattern**: Barika gold deposit, West Azerbaijan province, NW Iran. 3.205 (100), 3.225 (96), 2.7559 (90), 2.7073 (79), 2.8995 (78), 1.9401 (22), 1.9226 (22)

**Chemistry**: (1) Ag 38.81, Cu 0.31, Pb 0.76, Sb 26.06, As 10.64, Bi 0.11, S 23.21. Total 99.59. (2) Ag 35.70, Pb 6.87, As 26.55, S 7.90. Total 99.62

(1) Barika gold deposit, West Azerbaijan province, NW Iran; average of 10 electron microprobe analyses; corresponding to \( \text{Ag}_{7.97}\text{Pb}_{0.08}\text{Sb}_{4.75}\text{As}_{3.15}\text{Bi}_{0.01}\text{S}_{16.04} \). (2) Barika gold deposit, West Azerbaijan province, NW Iran; average of 6 electron microprobe analyses; corresponding to \( \text{Cu}_{0.11}\text{Ag}_{7.60}\text{Pb}_{0.76}\text{Sb}_{5.03}\text{As}_{2.43}\text{S}_{16.03} \).

**Occurrence**: In barite-quartz lenses in a metamorphosed strataform volcanogenic massive sulfide deposit.

**Association**: Barite, ferroan tetrahedrite-tennantite, smithite, sterryite, bournonite, boulangerite, geocronite, galena, plumbian ferdowsiite, arsenquatrandorite.

**Distribution**: At the Barika gold deposit, 17 km East of Sardasht, West Azerbaijan province, NW Iran.

**Name**: Honors Ferdowsi Tousi (935-1020), the great Persian poet for his endeavors to preserve the national identity, language and heritage of his homeland.

**Type Material**: Natural History Museum, Vienna, Austria (N9604).