

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 envelops arsenquatranderite.

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

Optical Properties: Opaque. *Color:* Grayish black, grayish white in reflected light. *Streak:* Dark gray. *Luster:* Metallic. *Pleochroism:* Distinct, white to gray. *Anisotropism:* Distinct, dark brown to bluish gray. *Optical Class:* n.d.

R_1 - R_2 : (470) 34.9-37.3, (546) 33.4-35.9, (589) 32.4-35.1, (650) 30.7-33.5

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) | (2) |
|------------|-------|-------|
| Ag | 38.81 | 35.70 |
| Cu | | 0.31 |
| Pb | 0.76 | 6.87 |
| Sb | 26.06 | 26.55 |
| As | 10.64 | 7.90 |
| Bi | 0.11 | |
| S | 23.21 | 22.29 |
| Total | 99.59 | 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 $\text{Cu}_{0.11}\text{Ag}_{7.63}\text{Pb}_{0.76}\text{Sb}_{5.03}\text{As}_{2.43}\text{S}_{16.03}$.

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, arsenquatranderite.

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).

References: (1) Makovicky, E., D. Topa, H. Tajeddin, H. Putz, and G. Zagler (2013) Ferdowsiite: a new mineral from the Barika Ore Deposit, Iran. *Can. Mineral.*, 51(5), 727-734. (2) (2015) *Amer. Mineral.*, 100, 1650 (abs. ref. 1).