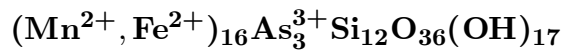


Schallerite

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Crystal Data: Hexagonal. *Point Group:* n.d. As markedly hemimorphic crystals, to 2 mm, having steep pyramids and terminated by dull {0001} and {000 $\bar{1}$ } pedions. As slightly rectangular aggregates resembling augen; also granular to massive.

Physical Properties: *Cleavage:* {0001}, perfect. *Hardness* = ~5 *D*(meas.) = 3.339–3.368 *D*(calc.) = [3.48]

Optical Properties: Transparent to translucent. *Color:* Red-brown. *Luster:* Waxy; pearly on the basal cleavage.

Optical Class: Uniaxial (-). $\omega = 1.681\text{--}1.704$ $\epsilon = 1.643\text{--}1.679$

Cell Data: *Space Group:* n.d. $a = 13.36\text{--}13.43$ $c = 14.24\text{--}14.31$ $Z = 2$

X-ray Powder Pattern: Franklin, New Jersey, USA.

1.688 (100), 2.673 (60), 1.511 (60), 2.466 (50), 2.022 (50), 3.55 (40), 1.975 (40)

| Chemistry: | (1) | (2) | (3) | (1) | (2) | (3) |
|--------------------------------|-------|-------|-------|------------------|-------|---------|
| SiO ₂ | 32.0 | 31.51 | 31.27 | MnO | 42.5 | 48.90 |
| TiO ₂ | | 0.03 | | ZnO | 1.6 | |
| Al ₂ O ₃ | | 0.01 | | MgO | 2.3 | 0.06 |
| Fe ₂ O ₃ | 2.6 | | | CaO | | 0.02 |
| As ₂ O ₃ | 12.81 | 11.41 | 12.87 | Cl | 0.0 | 0.11 |
| FeO | | 0.14 | | H ₂ O | 6.82 | [6.73] |
| | | | | Total | 100.6 | [98.92] |
| | | | | | | 100.00 |

(1) Franklin, New Jersey, USA; by electron microprobe, As₂O₃ by wet chemical analysis, H₂O by the Penfield method. (2) Ködnitz Valley, Austria; by electron microprobe, average of 13 analyses; H₂O calculated from stoichiometry; original total given as 99.83%. (3) Mn₁₆As₃Si₁₂O₃₆(OH)₁₇.

Polymorphism & Series: Dimorphous with nelenite.

Occurrence: In banded willemite-franklinite ore or rhodonite, from a metamorphosed stratiform zinc deposit (Franklin, New Jersey, USA); in manganese-rich lenses in quartzitic chlorite schists probably of marine origin (Ködnitz Valley, Austria).

Association: Willemite, franklinite, calcite, rhodonite (Franklin, New Jersey, USA); tephroite, pyroxmangite, rhodonite, spessartine, rhodochrosite (Ködnitz Valley, Austria).

Distribution: From Franklin, Sussex Co., New Jersey, USA. In the Ködnitz Valley, Tirol, Austria.

Name: For Dr. Waldemar Theodore Schaller (1882–1967), mineralogist, U.S. Geological Survey.

Type Material: Harvard University, Cambridge, Massachusetts, 87106; National Museum of Natural History, Washington, D.C., USA, R6610.

References: (1) Gage, R.B., E.S. Larsen, and H.E. Vasser (1925) Schallerite, a new arseno-silicate mineral from Franklin Furnace, New Jersey. *Amer. Mineral.*, 10, 9–11. (2) Bauer, L.H. and H. Berman (1928) Friedelite, schallerite, and related minerals. *Amer. Mineral.*, 13, 341–348. (3) McConnell, D. (1954) Crystal chemistry of schallerite. *Amer. Mineral.*, 39, 929–936. (4) Dunn, P.J., D.R. Peacor, J.A. Nelen, and J.A. Norberg (1981) Crystal-chemical data for schallerite, caryopilite and friedelite from Franklin and Sterling Hill, New Jersey. *Amer. Mineral.*, 66, 1054–1062. (5) Albrecht, J. (1990) An As-rich manganiferous mineral assemblage from the Ködnitz Valley (Eastern Alps, Austria): geology, mineralogy, genetic considerations, and implications for metamorphic Mn deposits. *Neues Jahrb. Mineral., Monatsh.*, 363–375.

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