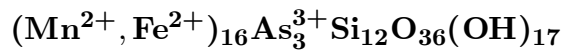


**Schallerite**

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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)

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

(1) Franklin, New Jersey, USA; by electron microprobe, As<sub>2</sub>O<sub>3</sub> by wet chemical analysis, H<sub>2</sub>O by the Penfield method. (2) Ködnitz Valley, Austria; by electron microprobe, average of 13 analyses; H<sub>2</sub>O calculated from stoichiometry; original total given as 99.83%. (3) Mn<sub>16</sub>As<sub>3</sub>Si<sub>12</sub>O<sub>36</sub>(OH)<sub>17</sub>.

**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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