

# Argentojarosite



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**Crystal Data:** Hexagonal. *Point Group:*  $\bar{3} 2/m$ . Typically as scaly masses of minute {0001} crystals with hexagonal outlines, or in pulverulent crusts.

**Physical Properties:** *Cleavage:* On {0001}, distinct. *Fracture:* [Uneven to conchoidal.] (by analogy to jarosite). *Tenacity:* [Brittle.] *Hardness* = n.d. *D(meas.)* = 3.66 *D(calc.)* = 3.660

**Optical Properties:** Transparent to translucent. *Color:* Yellow to brown; yellow in transmitted light. *Luster:* Adamantine.

*Optical Class:* Uniaxial (-). *Pleochroism:* *O* = yellow; *E* = pale yellow.  $\omega = 1.882\text{--}1.888$   
 $\epsilon = 1.785\text{--}1.790$

**Cell Data:** *Space Group:*  $R\bar{3}m$ .  $a = 7.347(10)$   $c = 16.580(53)$   $Z = 3$

**X-ray Powder Pattern:** Synthetic.

3.062 (100), 5.98 (50), 3.681 (30), 2.524 (30), 2.218 (30), 1.979 (25), 3.127 (20)

## Chemistry:

	(1)	(2)
SO <sub>3</sub>	28.15	28.11
Fe <sub>2</sub> O <sub>3</sub>	43.07	42.06
PbO	0.61	
Ag <sub>2</sub> O	18.00	20.34
K <sub>2</sub> O	0.42	
H <sub>2</sub> O	9.81	9.49
insol.	0.29	
Total	100.35	100.00

(1) Tintic Standard mine, Utah, USA. (2) AgFe<sub>3</sub>(SO<sub>4</sub>)<sub>2</sub>(OH)<sub>6</sub>.

**Mineral Group:** Alunite group.

**Occurrence:** An uncommon secondary mineral in the oxidized portions of silver- and sulfide-bearing mineral deposits.

**Association:** Anglesite, barite, quartz (Tintic Standard mine, Utah, USA).

**Distribution:** In the USA, an ore mineral in the Tintic Standard mine, near Dividend, East Tintic district, Utah Co., Utah; in the Philadelphia mine, Organ district, Doña Ana Co., New Mexico; from the Cactus Queen mine, Kern Co., California. At the Santa Ana mine, Caborca, Sonora, Mexico. In England, in the West Turf Pits mine, Grassington Moor, Yorkshire; from the Treore mine, St. Teath, and at Wheal Ludcott, St. Ives, Cornwall. From the Rio Tinto, Huelva and La Union mines, Murcia, Spain.

**Name:** As the silver, *argentum*, analog of *jarosite*.

**Type Material:** The Natural History Museum, London, England, 1957,357; National Museum of Natural History, Washington, D.C., USA, 104272–104274, 94707, R6309.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 565. (2) May, A., J.J. Sjöberg, and E.G. Baglin (1973) Synthetic argentojarosite: physical properties and thermal behavior. *Amer. Mineral.*, 58, 936–941.