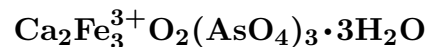


Arseniosiderite



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Crystal Data: Monoclinic, pseudotetragonal. *Point Group:* 2/m. Euhedral crystals very rare, to 2 mm; usually as flattened fibers, in radial aggregates, and felted to granular masses.

Physical Properties: *Cleavage:* On {001}, perfect. Hardness = 4.5 D(meas.) = 3.58–3.60 D(calc.) = [3.78]

Optical Properties: Opaque, translucent through thin edges. *Color:* Golden yellow, yellowish brown, reddish brown, brownish black, black. *Streak:* Ocher-yellow. *Luster:* Submetallic to silky.

Optical Class: Biaxial (-); pseuduniaxial (-). *Pleochroism:* Strong; X = nearly colorless to pale brownish or brownish red; Y = Z = brownish red to dark reddish brown. *Absorption:* Y = Z ≫ X. α = 1.792–1.815 β = 1.870–1.898 γ = 1.870–1.898 2V(meas.) = Small.

Cell Data: *Space Group:* [A2/a] (by analogy to robertsite and mitridatite). a = 17.76(4) b = 19.53(1) c = 11.30(1) β = 96.0° Z = 12

X-ray Powder Pattern: Mapimí, Mexico.

8.84 (10), 2.772 (8), 5.62 (5), 2.945 (5), 3.28 (4), 3.22 (4), 2.213 (4)

Chemistry:

	(1)	(2)
As ₂ O ₅	42.67	45.94
Fe ₂ O ₃	32.71	31.92
FeO	0.12	
PbO	0.28	
MgO	0.61	
CaO	14.44	14.94
H ₂ O	9.34	7.20
insol.	0.40	
Total	100.57	100.00

(1) Mapimí, Mexico. (2) Ca₂Fe₃O₂(AsO₄)₃ · 3H₂O.

Occurrence: A rare secondary mineral formed by the oxidation of earlier arsenic-bearing minerals, typically scorodite or arsenopyrite.

Association: Beudantite, carminite, scorodite, dussertite, pharmacolite, pitticite, adamite, erythrite, arsenopyrite, löllingite.

Distribution: From Romanèche, Saône-et-Loire, France. At Hüttenberg, Carinthia, Austria. In Germany, at Schneeberg, Saxony, and at Wittichen and Neubulach, Black Forest. In England, at Carrock and Caldbeck Fells, Cumbria; from the Penberthy Croft mine, St. Hilary, Cornwall; in the Huckworthy Bridge mine, Sampford Spiney, Devon. From the Kamariza mine, Laurium, Greece. At Tsumeb, Namibia. In the USA, from Sterling Hill, Ogdensburg, Sussex Co., New Jersey; at the Mohawk mine, San Bernardino Co., and in the Kalkar quarry, Santa Cruz, Santa Cruz Co., California; from the Gold Hill mine, Tooele Co., and the Mammoth and other mines, Tintic district, Juab Co., Utah. In Mexico, from the Jesus Maria mine, Mazapil district, Zacatecas; in the Ojuela mine, Mapimí, Durango; and at the Las Animas mine, La Mur, Sonora. In the Negra mine, near Cosca, north of Ollague, Bolivia. Found at the Dome Rock copper mine, about 40 km northwest of Mingary, South Australia. A few other localities are known, several requiring confirmation.

Name: For essential *arsenic* in the composition, and *sideros*, Greek for *iron*.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 953–955. (2) Moore, P.B. and J. Ito (1974) I. Jahnsite, segelerite, and robertsite, three new transition metal phosphate species. II. Redefinition of overite, an isotype of segelerite. III. Isotypy of robertsite, mitridatite, and arseniosiderite. *Amer. Mineral.*, 59, 48–59. (3) Moore, P.B. and T. Araki (1977) Mitridatite, Ca₆(H₂O)₆[Fe^{III}O₆(PO₄)₉] · 3H₂O. A noteworthy octahedral sheet structure. *Inorg. Chem.*, 16, 1096–1106. (4) Dunn, P.J. (1979) Contributions to the mineralogy of Franklin and Sterling Hill, New Jersey. *Mineral. Record*, 10, 160–165.

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