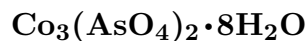


Erythrite



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Crystal Data: Monoclinic. *Point Group:* $2/m$. Rarely well crystallized, typically flattened on [010], may be elongated prismatic and striated || [001], with many forms, to 10 cm. In radial or stellate aggregates, fibrous, drusy; usually powdery, massive.

Physical Properties: *Cleavage:* Perfect on {010}; poor on {100} and $\{\bar{1}02\}$.
Tenacity: Sectile, flexible in thin {010} laminae. Hardness = 1.5–2.5 D(meas.) = 3.06
D(calc.) = 3.135

Optical Properties: Transparent to translucent. *Color:* Crimson to peach-red, pale rose, or pink, may be zoned. *Streak:* Pale red to pink. *Luster:* Subadamantine, pearly on cleavages. *Optical Class:* Biaxial (+), may be biaxial (–). *Pleochroism:* X = pale pinkish to pale rose; Y = pale violet to pale violet-rose; Z = deep red. *Orientation:* X = b; Z \wedge c = 30°–36°. *Dispersion:* r > v. $\alpha = 1.622\text{--}1.629$ $\beta = 1.660\text{--}1.663$ $\gamma = 1.681\text{--}1.701$ 2V(meas.) = Very large to 90°.

Cell Data: *Space Group:* $C2/m$. a = 10.251(3) b = 13.447(4) c = 4.764(1)
 $\beta = 104.98(1)^\circ$ Z = 2

X-ray Powder Pattern: Bou Azzer, Morocco. (ICDD 11-626).
6.65 (100), 1.677 (14), 3.22 (12), 3.34 (8), 2.70 (8), 2.32 (8), 7.89 (6)

Chemistry:	(1)	(2)
As ₂ O ₅	38.30	38.39
FeO	4.01	
CoO	33.42	37.54
H ₂ O	24.08	24.07
Total	99.81	100.00

(1) Schneeberg, Germany. (2) Co₃(AsO₄)₂·8H₂O.

Polymorphism & Series: Forms two series, with annabergite, and with hörnesite.

Mineral Group: Vivianite group.

Occurrence: A secondary mineral in the oxide zone of some Co–Ni–As-bearing mineral deposits.

Association: Cobaltite, skutterudite, symplectite, roselite-beta, scorodite, pharmacosiderite, adamite, morenosite, retgersite, malachite.

Distribution: Many localities, but few of importance. In France, at Chalanches, near Allemont, Isère. In Germany, fine examples with large crystals from Schneeberg, Saxony, at Wittichen, Black Forest, from Richelsdorf, Hesse, and elsewhere. At Jáchymov (Joachimsthal), Czech Republic. In the Botallack mine, St. Just, and from a number of other places in Cornwall, England. At the Aghbar (Arhbar), Irhtem (Ightem), and other mines in the Bou Azzer district, Morocco, large crystals. From Cobalt, Ontario, Canada. In the USA, at the Blackbird mine, Lemhi Co., Idaho. From the Sara Alicia mine, near Alamos, Sonora, Mexico. In Australia, from Mt. Cobalt, 110 km south of Cloncurry, Queensland, and at the Dome Rock copper mine, about 40 km northwest of Mingary, South Australia.

Name: From the Greek for red, for its characteristic deep crimson color.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 746–750. (2) Jambor, J.L. and J.E. Dutrizac (1995) Solid solutions in the annabergite – erythrite – hörnesite synthetic system. *Can. Mineral.*, 33, 1063–1071. (3) Wildner, M., G. Giester, C.L. Lengauer, and C.A. McCammon (1996) Structure and crystal chemistry of vivianite-type compounds: crystal structures of erythrite and annabergite with a Mössbauer study of erythrite. *Eur. J. Mineral.*, 8, 187–192.

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