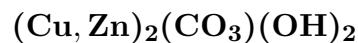


Rosasite

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Crystal Data: Monoclinic. *Point Group:* 2/m. Crystals are acicular, to 0.5 mm; in radial or divergent sprays or globular; compact mammillary to botryoidal crusts and masses, typically fibrous and with warty surfaces. *Twining:* On {100}.

Physical Properties: *Cleavage:* In two directions. *Tenacity:* Brittle. Hardness = 4.5
D(meas.) = 4.0–4.2 D(calc.) = 4.15

Optical Properties: Semitransparent. *Color:* Green, bluish green, sky-blue; pale blue to colorless in transmitted light.

Optical Class: Biaxial (-). *Pleochroism:* Strong; X = pale emerald-green; Z = dark emerald-green. *Orientation:* X = c; Y ∧ a ≈ 10°. *Absorption:* X > Y > Z. α = 1.672–1.688
β = 1.796–1.83 γ = 1.811–1.831 2V(meas.) = 33(5)° 2V(calc.) = 36.4°

Cell Data: *Space Group:* P2₁/a. a = 12.873(3) b = 9.354(3) c = 3.156(2)
β = 110.36(3)° Z = 4

X-ray Powder Pattern: Tsumeb, Namibia.

2.600 (100), 6.05 (90), 5.07 (90), 3.69 (90), 2.962 (70), 2.534 (50), 2.144 (50)

Chemistry:

	(1)	(2)
CO ₂	19.54	19.74
CuO	47.53	35.68
ZnO	24.60	36.50
H ₂ O	8.33	8.08
Total	[100.00]	100.00

(1) Sardinia; recalculated to 100% from an original total of 100.37% after deduction of MgO 0.15%, Fe₂O₃ 0.39%, insoluble 0.33%. (2) (Cu, Zn)₂(CO₃)(OH)₂ with Cu:Zn = 1:1.

Mineral Group: Rosasite group.

Occurrence: An uncommon secondary mineral in the oxidized zone of Cu–Zn-bearing deposits, typically formed by zinc-bearing solutions on primary copper minerals; may be of post-mine origin.

Association: Malachite, aurichalcite, smithsonite, cerussite, hydrozincite, hemimorphite.

Distribution: From the Rosas mine, Sulcis, Sardinia, Italy. At a number of places in England, as Caldbeck Fells, Cumbria, and mines in Cornwall. Fine examples from Tsumeb, Namibia. In the USA, from the Kelly mine, Magdalena, Socorro Co., New Mexico; fine specimens from the Silver Bill mine, Gleeson, and at Bisbee, Cochise Co., in the 79 mine, Gila Co., and a number of other places in Arizona; from the Mohawk mine, San Bernardino Co., California; at Leadville, Lake Co., Colorado; from Majuba Hill, Pershing Co., Nevada; in the Hidden Treasure mine, Ophir district, Tooele Co., Utah. Abundant specimens from the Ojuela mine, Mapimí, Durango, Mexico. In small amounts from additional localities.

Name: For its occurrence in the Rosas mine, Sardinia, Italy.

Type Material: Natural History Museum, Paris, France, 109.327, 109.328, 139.61.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 251–252. (2) Roberts, A.C., J.L. Jambor, and J.D. Grice (1986) The X-ray crystallography of rosasite from Tsumeb, Namibia. Powder Diffraction, 1, 56–57.