

Crystal Data: Monoclinic. *Point Group:* 2/*m*. As acicular to stubby prismatic crystals, thin to thick tabular on {010}, typically exhibiting {010}, {011}, {110}, {111}, {103}, with more than 20 other forms noted, coarsely striated || [001], to 17 m; lenticular in rosettes, may be curved, bent; fibrous, earthy, concretionary, granular, massive. *Twinning:* Very common by contact on {100} forming cruciform and V-shaped twins; as butterfly or heart-shaped twins by contact on {101}; rare on {209}.

Physical Properties: *Cleavage:* {010}, perfect; {100}, distinct; {011}. *Fracture:* Splintery parallel [001], conchoidal on {100}. *Tenacity:* Flexible, inelastic. Hardness = 1.5–2, varies with direction. D(meas.) = 2.317(5) D(calc.) = 2.31

Optical Properties: Transparent to translucent. *Color:* Colorless, white; if colored by impurities, yellow, tan, blue, pink, brown, reddish brown, gray, black; colorless in transmitted light. *Streak:* White. *Luster:* Subvitreous, pearly on {010} cleavages, silky if fibrous. *Optical Class:* Biaxial (+). *Orientation:* Y = b; Z ∧ c = 52°. *Dispersion:* r > v, strong, inclined. α = 1.521 β = 1.523 γ = 1.530 2V(meas.) = 58°

Cell Data: *Space Group:* I2/a. a = 5.679(5) b = 15.202(14) c = 6.522(6) β = 118.43° Z = 4

X-ray Powder Pattern: Synthetic; shows preferred orientation on {010}. (ICDD 33-311). 7.63 (100), 4.283 (100), 3.065 (75), 2.873 (45), 2.865 (35), 2.086 (25), 3.799 (17)

Chemistry:

	(1)	(2)
SO ₃	46.00	46.50
CO ₂	0.28	
CaO	32.36	32.57
H ₂ O	20.82	20.93
insol.	0.16	
Total	99.62	100.00

(1) Zaleschiki, Ukraine. (2) CaSO₄•2H₂O.

Occurrence: A common constituent of sedimentary rocks, particularly marine salt deposits, and soils formed directly by evaporation or later by hydration of anhydrite. Formed by the reaction between sulfuric acid and carbonate rock in oxidizing sulfide deposits, and by the action of sulfurous volcanic gases on surrounding Ca-bearing rock. As efflorescences in mines and speleothems in caves.

Association: Halite, celestine, calcite, aragonite, anhydrite, dolomite, sulfur.

Distribution: The most common sulfate mineral. Localities listed here have provided especially fine or large specimens. From Italy, on Sicily, as at Racalmuto, Girgenti, and Cianciana. In Germany, in several mines in the Eisleben–Mansfeld–Sangershausen district, Saxony-Anhalt, and from near Königslutter, Lower Saxony. At Bex, Valais, Switzerland. In Austria, from Aussee, Styria, and Hall, Tirol. At Zaragoza, Zaragoza Province, Spain. From Montmartre, Paris, France. In Poland, large crystals from Tarnobrzeg. At Meskerabad, near Teheran, Iran. From Cloncurry, Queensland, Australia. In Mexico, huge crystals in a cave complex in the Naica Pb–Ag mine, and also in the San Antonio mine, Santa Eulalia, Chihuahua. Large crystals in the El Teniente mine, 67 km west of Rancagua, O'Higgins Province, Chile. In the USA, large crystals at South Wash and elsewhere in Wayne Co., Utah; from Great Salt Plains, Alfalfa Co., Oklahoma; exceptional speleothems in Lechuguilla Cave, Carlsbad Caverns National Park, New Mexico.

Name: From the Greek for *calcined gypsum* used as plaster.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 482–486. (2) Chang, L.L.Y., R.A. Howie, and J. Zussman (1996) Rock-forming minerals, (2nd edition), v. 5B, non-silicates, 40–73. (3) Pedersen, B.F. and D. Semmingsen (1982) Neutron diffraction refinement of the structure of gypsum, CaSO₄•2H₂O. Acta Cryst., 38, 1074–1077.

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