

**Crystal Data:** Orthorhombic, pseudohexagonal. *Point Group:*  $2/m\ 2/m\ 2/m$ . Isolated crystals short to long prismatic along [010], also acicular with chisellike terminations, dipyrarnidal, thick tabular with forms {001}, {110} and {010}, to 30 cm; as columnar crystal aggregates and crusts, globular, reniform, pisolitic, coralloidal, stalactitic, internally fibrous or banded. *Twining:* Common by repeated contact twinning on {110}, yielding pseudohexagonal columnar trillings; also polysynthetic lamellae and striations  $\parallel$  [001].

**Physical Properties:** *Cleavage:* {010}, distinct; {110} and {011}, imperfect. *Tenacity:* Brittle. Hardness = 3.5–4 D(meas.) = 2.95 D(calc.) = 2.930 Cathodoluminescent, fluorescent red or yellow under LW and SW UV, phosphorescent.

**Optical Properties:** Transparent to translucent. *Color:* Colorless, white, also gray, pale shades of yellow, blue, violet, green, red; colorless in transmitted light. *Streak:* White. *Luster:* Vitreous, resinous on fracture surfaces. *Optical Class:* Biaxial (-). *Orientation:*  $X = c$ ;  $Y = a$ ;  $Z = b$ . *Dispersion:*  $r < v$ , weak.  $\alpha = 1.530$   $\beta = 1.681$   $\gamma = 1.685$   $2V(\text{meas.}) = 18^\circ$

**Cell Data:** *Space Group:*  $Pm\bar{c}n$ .  $a = 4.9611(4)$   $b = 7.9672(6)$   $c = 5.7407(4)$   $Z = 4$

**X-ray Powder Pattern:** Synthetic.  
3.396 (100), 1.977 (65), 3.273 (52), 2.700 (46), 2.372 (38), 2.481 (33), 2.341 (31)

Chemistry:	(1)	(2)	(1)	(2)
CO <sub>2</sub>	43.95	43.97	CaO	55.96
MgO	0.03		insol.	0.13
			Total	100.07
				100.00

(1) Matsushiro, Japan. (2) CaCO<sub>3</sub>.

**Polymorphism & Series:** Trimorphous with calcite and vaterite.

**Mineral Group:** Aragonite group.

**Occurrence:** Converts to calcite over geologic time. A primary precipitate in warm marine waters, as oolites and carbonate mud, a principal detrital sedimentary component as the hard parts of many marine micro-organisms, shells and skeletons; also from evaporite deposits; in sinter at hot springs and dripstone in caves; characteristic of high-pressure, low-temperature (blueschist facies) metamorphism; as amygdules in basalt and andesite; a secondary component in altered ultramafic rocks.

**Association:** Gypsum, sulfur, celestine (evaporite deposits); pumpellyite, lawsonite, glaucophane, quartz (blueschist); calcite, dolomite, hydromagnesite, brucite, magnesite (altered ultramafics).

**Distribution:** Many localities, but fine crystals are uncommon. From Molina, Guadalajara Province, Spain. Fine crystals from Racalmuto, Cianciana, and Agrigento, Sicily, Italy. At Dognácska and Špania Dolina (Herrengrund), Slovakia. From Tarnowitz, Silesia, Poland. At the Erzberg, near Eisenerz, Styria, and from Leogang, Salzburg, Austria. On the Spitzberg, Hořenz, near Bílina, Czech Republic. From Frizington and Cleator Moor, Cumbria, England. Fine examples at the Touissit mine, near Oujda, and from Tazouta, near Sefrou, Morocco. Large crystals from Tsumeb, Namibia. In the USA, in caves at Bisbee, Cochise Co., Arizona; large crystals from near Lake Arthur, Chavez Co., also near Santa Rosa, Guadalupe Co., New Mexico; in the Passaic mine, Sterling Hill, Ogdensburg, Sussex Co., New Jersey.

**Name:** For its first-noted occurrence in the Aragon region, Spain.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 182–193. (2) Chang, L.L.Y., R.A. Howie, and J. Zussman (1996) Rock-forming minerals, (2nd edition), v. 5B, non-silicates, 108–135. (3) Jarosch, D. and G. Heger (1986) Neutron diffraction refinement of the crystal structure of aragonite. *Tschermaks Mineral. Petrog. Mitt.*, 35, 127–131. (4) (1954) *NBS Circ.* 539, 3, 53.

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