

**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . Crystals, to 0.6 m, are tabular {010}, equant to elongated on [001] or [100], or pseudohexagonal dipyramidal {111}, exhibiting combinations of {110}, {010}, {111}, {021}, {012}, {011}, {130}, {001}, with many others. Also granular, pulverulent, stalactitic, as randomly intergrown prismatic aggregates, rarely fibrous, massive. *Twining:* Common, as simple or cyclic contact twins on {110}, producing stellate pseudo-hexagonal or reticulated composites; as contact twins on {130} producing heart-shaped composites. Both laws may occur in one aggregate.

**Physical Properties:** *Cleavage:* {110} and {021}, good; {010} and {012}, poor. *Fracture:* Conchoidal. *Tenacity:* Very brittle. Hardness = 3–3.5 D(meas.) = 6.55(2) D(calc.) = 6.577 May fluoresce yellow under LW UV.

**Optical Properties:** Transparent to translucent. *Color:* Colorless, white, pale yellow, smoky to dark gray, black with inclusions; colorless in transmitted light. *Streak:* White. *Luster:* Adamantine, tending toward vitreous, resinous. *Optical Class:* Biaxial (-). *Orientation:*  $X = c$ ;  $Y = b$ ;  $Z = a$ . *Dispersion:*  $r > v$ , strong.  $\alpha = 1.803$   $\beta = 2.074$   $\gamma = 2.076$   $2V(\text{meas.}) = 8^\circ\text{--}9^\circ$

**Cell Data:** *Space Group:*  $Pm\bar{c}n$ .  $a = 5.179(1)$   $b = 8.492(3)$   $c = 6.141(2)$   $Z = 4$

**X-ray Powder Pattern:** Synthetic. 3.593 (100), 3.498 (43), 2.487 (32), 2.081 (27), 3.074 (24), 1.859 (21), 2.522 (20)

Chemistry:	(1)	(2)
CO <sub>2</sub>	16.64	16.47
PbO	83.27	83.53
insol.	0.24	
Total	100.15	100.00

(1) Tsumeb, Namibia. (2) PbCO<sub>3</sub>.

**Mineral Group:** Aragonite group.

**Occurrence:** Common in the oxidized zone of lead deposits, where it may constitute an important ore.

**Association:** Anglesite, smithsonite, malachite, azurite, phosgenite, pyromorphite, galena.

**Distribution:** Some of the many localities for fine crystals include: from the Friedrichsseggen mine, near Braubach, Rhineland-Pfalz, Germany. At Příbram, Czech Republic. From Mežica (Mies), Slovenia. At Leadhills, Lanarkshire, Scotland. From the Frankmills mine, Christow, Devon, England. In the Rossignol vein, Chaillac, Indre, France. At Monteponi and Montevicchio, near Iglesias, Sardinia, Italy. From Nerchinsk, Siberia, Russia. At Sidi-Amor-ben-Salem, Tunisia. From Morocco, at Mibladen, with fine twins from the Touissit mine, near Oujda. Superb crystals and twinned groups at Tsumeb and in the Kombat Cu–Pb–Ag mine, 49 km south of Tsumeb, Namibia. At the Nakhlak mine, Anarak district, Iran. In Australia, from Broken Hill, New South Wales; at the Magnet and other mines, near Dundas, Tasmania. In the USA, from the Wheatley mine, Phoenixville, Chester Co., Pennsylvania; in the Bunker Hill mine, Coeur d'Alene district, Shoshone Co., Idaho; from Leadville, Lake Co., Colorado; in Arizona, from the Mammoth-St. Anthony mine, Tiger, Pinal Co., at the Flux mine, Santa Cruz Co., and elsewhere; large twins from the Stevenson-Bennett mine, Organ district, Doña Ana Co., New Mexico.

**Name:** From the Latin *cerussa*, for *white lead*, synthetic lead carbonate.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 200–207. (2) Chang, L.L.Y., R.A. Howie, and J. Zussman (1996) Rock-forming minerals, (2nd edition), v. 5B, non-silicates, 272–276. (3) Chevrier, G., G. Giester, G. Heger, D. Jarosch, M. Wildner, and J. Zemann (1992) Neutron single-crystal refinement of cerussite, PbCO<sub>3</sub>, and comparison with other aragonite-type carbonates. *Zeits. Krist.*, 199, 67–74. (4) (1953) NBS Circ. 539, II, 56.

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