

# Hydrocerussite

# Pb<sub>3</sub>(CO<sub>3</sub>)<sub>2</sub>(OH)<sub>2</sub>

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**Crystal Data:** Hexagonal. *Point Group:* n.d. As steep hexagonal  $\{h0\bar{h}l\}$  pyramidal to tabular crystals, to 4 cm; in lenticular to thin scaly crystal aggregates; cleavable massive.

**Physical Properties:** *Cleavage:* On {0001}, perfect. *Fracture:* Irregular. *Tenacity:* Brittle. Hardness = 3.5 D(meas.) = 6.80–6.82 D(calc.) = 6.873

**Optical Properties:** Transparent to translucent. *Color:* Colorless to white, gray, may display greenish tint; colorless in transmitted light. *Luster:* Adamantine, pearly on {0001}. *Optical Class:* Uniaxial (-).  $\omega = 2.09$   $\epsilon = 1.94$

**Cell Data:** *Space Group:* n.d.  $a = 5.239(5)$   $c = 23.65(2)$   $Z = 3$

**X-ray Powder Pattern:** Synthetic; near to plumbonacrite. 2.623 (10), 3.611 (9), 3.286 (9), 4.47 (6), 4.247 (6), 2.231 (5), 1.696 (4)

Chemistry:	(1)	(2)
CO <sub>2</sub>	11.21	11.35
PbO	86.52	86.33
Cl	0.27	
H <sub>2</sub> O	2.23	2.32
-O = Cl <sub>2</sub>	0.06	
Total	100.17	100.00

(1) Mendip Hills, England. (2) Pb<sub>3</sub>(CO<sub>3</sub>)<sub>2</sub>(OH)<sub>2</sub>.

**Occurrence:** An uncommon secondary mineral in the oxidized portions of lead deposits.

**Association:** Lead (Långban, Sweden); cerussite, leadhillite, matlockite, paralaurionite, diableite, leadhillite, galena (Mammoth-St. Anthony mine, Arizona, USA).

**Distribution:** From Långban, Värmland, Sweden. At Tvedalen, near Larvik, Norway. In England, relatively abundant on the Higher Pitts Farm, Mendip Hills, and as large crystals in the Merehead quarry, near Shepton Mallet, Somerset; at many mines in Caldbeck Fells, Cumbria. From Wanlockhead, Dumfriesshire and Leadhills, Lanarkshire, Scotland. At the Kamariza mine, Laurium, Greece. In the Ilímaussaq intrusion, Greenland. From Tsumeb, Namibia. In the Seh-Changi mine, near Neyband, Khorassan, Iran. At Mont Saint-Hilaire, Quebec, Canada. In the USA, in Arizona, exceptional crystals from the Mammoth-St. Anthony mine, Tiger, Pinal Co.; at the C & B mine, Gila Co.; in the Bunker Hill mine, Shoshone Co., Idaho. Additional minor localities are known.

**Name:** In allusion to the essential chemical components, water and the lead and carbonate of *cerussite*.

**Type Material:** n.d.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 270–271. (2) Olby, J.K. (1966) The basic lead carbonates. *J. Inorg. Nucl. Chem.*, 28, 2507–2512.