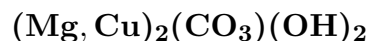


# Mcguinnessite



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**Crystal Data:** Monoclinic, may be triclinic. *Point Group:*  $2/m$ . Crystals are fibrous, to  $2\ \mu\text{m}$ , aggregated into radially fibrous spherules, hemispherical or flattened.

**Physical Properties:** *Fracture:* Even. *Tenacity:* Brittle. Hardness = 2.5  
D(meas.) = 3.02–3.22 D(calc.) = 3.076–3.234

**Optical Properties:** Translucent. *Color:* Pale blue-green, blue-green, white, typically color-banded. *Luster:* Vitreous to silky.  
*Optical Class:* Biaxial (-). *Pleochroism:* Weak;  $X$  = very pale green;  $Y = Z$  = pale bluish green.  
*Orientation:* Negative elongation;  $X \wedge c = 11^\circ$ . *Absorption:*  $X < Y = Z$ .  $\alpha = 1.596\text{--}1.607$   
 $\beta = 1.724\text{--}1.740$   $\gamma = 1.724\text{--}1.740$   $2V(\text{meas.}) = \text{n.d.}$

**Cell Data:** *Space Group:*  $P2_1/a$  or  $P2_1/a$ .  $a = 9.398(2)$   $b = 12.011(2)$   $c = 3.379(2)$   
 $\beta = 93.28(5)^\circ$   $Z = [4]$

**X-ray Powder Pattern:** Red Mountain, California, USA.  
6.015 (100), 3.694 (67), 2.530 (25), 2.139 (23), 5.054 (16), 2.326 (15), 3.002 (12)

Chemistry:	(1)	(2)
CO <sub>2</sub>	24.73	24.20
CuO	39.6	43.73
MgO	23.7	22.16
CaO	0.07	
H <sub>2</sub> O	10.13	9.91
Total	98.23	100.00

- (1) Red Mountain, California, USA; by electron microprobe, CO<sub>2</sub> and H<sub>2</sub>O by TGA.  
(2) (Mg, Cu)<sub>2</sub>(CO<sub>3</sub>)(OH)<sub>2</sub> with Mg:Cu = 1:1.

**Mineral Group:** Rosasite group.

**Occurrence:** A rare secondary mineral, typically formed in serpentinized peridotite.

**Association:** Vuagnatite, malachite, azurite, chrysocolla, iron oxides (Red Mountain, California, USA); coalingite, pokrovskite (Cedar Hill quarry, Pennsylvania, USA); glaukosphaerite, gaspéite, jamborite (Shinshiro, Japan).

**Distribution:** In the USA, from Red Mountain, 24 km southeast of Ukiah, Mendocino Co., California; occurs in the Rockville quarry, six km west of Rockville, Montgomery Co., Maryland; in the Cedar Hill quarry, Lancaster Co., Pennsylvania; at the Gabbs mine, Gabbs district, Nye Co., and from the Chalk Mountain mine and other claims in the Chalk Mountain district, Churchill Co., Nevada. In the Arroyo Puerto Nuevo, near San José de Castro, Baja California, Mexico. From the Kraubath serpentinite massif, Styria, Austria. In the Arhbar (Aghbar) mine, Bou Azzer district, Morocco. Found at Shinshiro, Aichi Prefecture, Japan. In the Champion mine, Nelson, New Zealand.

**Name:** Honors Albert Leo McGuinness (1926–1990), amateur mineral collector and dealer, San Mateo, California, USA, for his contributions to scientific mineralogy.

**Type Material:** University of Pierre and Marie Curie, Paris, France; National Museum of Natural History, Washington, D.C., USA, 147169.

**References:** (1) Erd, R.C., F.P. Cesbron, F.E. Goff, and J.R. Clark (1981) Mcguinnessite, a new carbonate from California. *Mineral. Record*, 12, 143–147. (2) (1981) *Amer. Mineral.*, 66, 1276 (abs. ref. 1).

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