

# Euchroite

# $\text{Cu}_2(\text{AsO}_4)(\text{OH}) \cdot 3\text{H}_2\text{O}$

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**Crystal Data:** Orthorhombic. *Point Group:* 222. Typically euhedral crystals, to 2 cm, equant to short prismatic [010], may be thick tabular {100}, showing large {010}, {100}, {110}, {101}, {0kl}, {h0l}, striated || [010].

**Physical Properties:** *Cleavage:* {101}, {110}, interrupted. *Fracture:* Uneven to subconchoidal. *Tenacity:* Brittle. Hardness = 3.5–4 D(meas.) = 3.44 D(calc.) = 3.47

**Optical Properties:** Transparent to translucent. *Color:* Bright emerald-green or leek-green; bright bluish green in transmitted light. *Luster:* Vitreous.

*Optical Class:* Biaxial (+). *Pleochroism:* Weak. *Orientation:* X = c; Y = a; Z = b.

*Dispersion:*  $r > v$ , moderate.  $\alpha = 1.695(3)$   $\beta = 1.698(3)$   $\gamma = 1.733(3)$   $2V(\text{meas.}) = 29(1)^\circ$

**Cell Data:** *Space Group:*  $P2_12_12_1$ .  $a = 10.056(2)$   $b = 10.506(2)$   $c = 6.103(2)$   $Z = 4$

**X-ray Powder Pattern:** Lubietová, Slovakia.

5.34 (10), 2.83 (9), 7.37 (8), 2.64 (8), 2.55 (7), 3.71 (6), 1.510 (5)

Chemistry:	(1)	(2)
$\text{P}_2\text{O}_5$	1.48	
$\text{As}_2\text{O}_5$	30.90	34.09
CuO	47.26	47.20
$\text{H}_2\text{O}^+$	16.16	18.71
$\text{H}_2\text{O}^-$	3.12	
Total	98.92	100.00

(1) Lubietová, Slovakia. (2)  $\text{Cu}_2(\text{AsO}_4)(\text{OH}) \cdot 3\text{H}_2\text{O}$ .

**Occurrence:** A very rare mineral in the oxidized zone of some copper-bearing hydrothermal mineral deposits.

**Association:** Olivenite (Lubietová, Slovakia); strashimirite, olivenite, azurite, malachite (Zapachitsa deposit, Bulgaria).

**Distribution:** From Lubietová, near Baňská Bystrica (Libethen, near Neusohl), Slovakia. At Laurium, Greece, in slag. From the Zapachitsa copper deposit, Ismerez, Stara-Planina, Bulgaria. In the USA, at the Black Pine mine, Philipsburg, Granite Co., and along Cramer Creek, Missoula Co., Montana; in the Monte Cristo mine, Weden Creek, Snohomish Co., Washington; at Sterling Hill, Ogdensburg, Sussex Co., New Jersey.

**Name:** From the Greek for *beautiful color*.

**Type Material:** Mining Academy, Freiberg, Germany, 21335.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 934–935. (2) Berry, L.G. (1951) Observations on conichalcite, cornwallite, euchroite lironite and olivenite. *Amer. Mineral.*, 36, 484–503. (3) Eby, R.K. and F.C. Hawthorne (1989) Euchroite, a heteropolyhedral framework structure. *Acta Cryst.*, C45, 1479–1482.