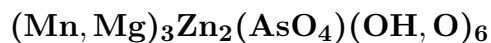


# Chlorophoenicite



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**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . As stout to acicular prismatic crystals, elongated and striated parallel [010], to 1 cm, generally with etched and dull terminations, and prism faces uneven or warped; in divergent sprays, dense masses of acicular crystals, microcrystalline, chalky pulverulent coatings.

**Physical Properties:** *Cleavage:* Good on {100}. *Tenacity:* Brittle. Hardness = 3.5  
D(meas.) = 3.46–3.53 D(calc.) = 3.47

**Optical Properties:** Translucent. *Color:* Light grayish green in natural light, pink to light purplish red in artificial light, typically white in aggregates; nearly colorless in transmitted light. *Luster:* Vitreous, silky, pearly on cleavages.  
*Optical Class:* Biaxial (-). *Orientation:*  $Y = b$ . *Dispersion:*  $r > v$ , strong.  $\alpha = 1.682$   
 $\beta = 1.690$   $\gamma = 1.697$   $2V(\text{meas.}) = 83(2)^\circ$

**Cell Data:** *Space Group:*  $C2/m$ .  $a = 22.98(4)$   $b = 3.32(1)$   $c = 7.32(1)$   $\beta = 106^\circ 00'(10)'$   
 $Z = 2$

**X-ray Powder Pattern:** Franklin, New Jersey, USA; nearly identical to magnesium-chlorophoenicite. (ICDD 25-1159).  
2.642 (100), 3.71 (70), 6.87 (50), 3.11 (50), 2.990 (40), 1.758 (30), 1.822 (20)

## Chemistry:

	(1)
P <sub>2</sub> O <sub>5</sub>	0.1
As <sub>2</sub> O <sub>5</sub>	20.3
FeO	0.0
MnO	33.0
ZnO	30.3
MgO	1.6
CaO	0.1
H <sub>2</sub> O	14.9
Total	100.3

(1) Franklin, New Jersey, USA; by electron microprobe, H<sub>2</sub>O by DTA–TGA, corresponding to  $(\text{Mn}_{2.65}\text{Mg}_{0.23}\text{Zn}_{0.12})_{\Sigma=3.00}\text{Zn}_{2.00}(\text{AsO}_4)(\text{OH, O})_6$ .

**Occurrence:** Along secondary cracks through franklinite ores in a metamorphosed stratiform zinc orebody.

**Association:** Leucophoenicite, hodgkinsonite, hetaerolite, tephroite, gageite, chlorophoenicite, scalarite, pyrochroite, willemite, zincite, calcite, barite, franklinite.

**Distribution:** From Franklin and Sterling Hill, Ogdensburg, Sussex Co., New Jersey, USA.

**Name:** From the Greek for *green* and *purple-red*, alluding to the mineral's colors in natural and artificial light.

**Type Material:** The Natural History Museum, London, England, 1925,501–502; National Museum of Natural History, Washington, D.C., USA, 94964.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 778–780. (2) Moore, P.B. (1968) The crystal structure of chlorophoenicite. *Amer. Mineral.*, 53, 1110–1119. (3) Dunn, P.J. (1981) Magnesium-chlorophoenicite redefined and new data on chlorophoenicite. *Can. Mineral.*, 19, 333–336. (4) Dunn, P.J. (1995) Franklin and Sterling Hill, New Jersey. No publisher, n.p., 663–666.

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