

Macquartite**Pb₃Cu(CrO₄)SiO₃(OH)₄•2H₂O**

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Crystal Data: Monoclinic. *Point Group:* 2/m (probable). Euhedral crystals, elongated along [010], to 1 mm; commonly enclosed in quartz.

Physical Properties: *Cleavage:* Good on {100}. *Fracture:* Irregular. Hardness = 3.5
D(meas.) = 5.49(7) D(calc.) = 5.58

Optical Properties: Semitransparent. *Color:* Cadmium orange. *Streak:* Pale orange.
Optical Class: Biaxial (-). *Orientation:* Y = b; X ∧ c = 36°. α = 2.28 β = 2.31 γ = 2.34
2V(meas.) = 85°

Cell Data: *Space Group:* C2/m (probable). a = 20.81 b = 5.84 c = 9.26 β = 91°48'
Z = 4

X-ray Powder Pattern: Tiger, Arizona, USA.
3.156 (10), 4.822 (9), 4.628 (9), 3.090 (6), 2.925 (5), 2.768 (5), 3.467 (3)

Chemistry:	(1)	(2)
SiO ₂	[4.9]	6.12
CrO ₃	10.5	10.19
CuO	7.8	8.11
PbO	67.6	68.24
H ₂ O	7.3	7.34
Total	[98.1]	100.00

(1) Tiger, Arizona, USA; Si determined by UV spectrophotometry, Cu, Pb, Cr, Zn by AA, H₂O by the Penfield method; SiO₂ reduced in proportion to ZnO deducted as willemite 2.3%.
(2) Pb₃Cu(CrO₄)SiO₃(OH)₄•2H₂O.

Occurrence: On museum specimens from an oxidized Pb-Zn-Cu orebody.

Association: Diopside, quartz, willemite, wulfenite, chrysocolla, hematite, fluorite, barite.

Distribution: From the Mammoth-St. Anthony mine, Tiger, Pinal Co., Arizona, USA.

Name: For the French chemist Louis Charles Henri Macquart (1745–1808), who brought to France the Russian crocoite specimens in which chromium was discovered.

Type Material: The Natural History Museum, London, England, 1980,542; University of Arizona, Tucson, Arizona; National Museum of Natural History, Washington, D.C., USA, R18726.

References: (1) Williams, S.A. and M. Duggan (1980) Macquartite, a new silicate-chromate from Tiger, Arizona. Bull. Minéral., 103, 530–532 (in French). (2) (1981) Amer. Mineral., 66, 638 (abs. ref. 1)