

Crystal Data: Monoclinic, probable. *Point Group:* n.d. As spherules of radial fibers, to 0.3 mm.

Physical Properties: *Tenacity:* Waxy or gummy. *Hardness* = 2 *D*(meas.) = 2.72(5)
D(calc.) = [2.54]

Optical Properties: Transparent or translucent. *Color:* Chrysocolla-green, inclining to pale blue-green. *Luster:* Nonmetallic.

Optical Class: Biaxial (-). *Pleochroism:* Weak in drab grayish green. *Orientation:* Blades extinguish up to 8° from *Z* || length. *Absorption:* $Z > X = Y$. $\alpha = 1.560$ $\beta = 1.635$
 $\gamma = 1.635$ $2V$ (meas.) = Very small.

Cell Data: *Space Group:* n.d. $a = 13.38$ $b = 19.16$ $c = 9.026$ $\beta = \sim 90^\circ$ $Z = [4]$

X-ray Powder Pattern: Christmas, Arizona, USA.

13.4 (100), 7.786 (50), 4.790 (40), 3.897 (40), 10.97 (30), 6.684 (30), 3.315 (30)

Chemistry:

| | (1) | (2) |
|------------------|------|--------|
| SiO ₂ | 41.5 | 40.77 |
| MnO | 0.5 | |
| CuO | 36.2 | 44.97 |
| MgO | 2.3 | |
| CaO | 3.8 | |
| H ₂ O | 14.6 | 14.26 |
| Total | 98.9 | 100.00 |

(1) Christmas, Arizona, USA; average of two closely agreeing analyses. (2) $\text{Cu}_5\text{Si}_6\text{O}_{17} \cdot 7\text{H}_2\text{O}$.

Occurrence: A retrograde metamorphic or mesogene mineral formed at the expense of a prograde calc-silicate and sulfide assemblage; in tactites, commonly incrusting fractures; also filling cracks or interstices in diopside grains (Christmas, Arizona, USA).

Association: Kinoite, apachite, stringhamite, junitoite, clinohedrite, xonotlite, diopside, apophyllite, calcite, tobermorite (Christmas, Arizona, USA).

Distribution: From the Christmas copper mine, Gila Co., and the Lonestar [ckname??] deposit, near Safford, Graham Co., Arizona, USA.

Name: For Gila Co., Arizona, USA, where it was found.

Type Material: The Natural History Museum, London, England, 1980,533; University of Arizona, Tucson, Arizona; National Museum of Natural History, Washington, D.C., USA, 150201.

References: (1) Cesbron, F.P. and S.A. Williams (1980) Apachite and gilalite, two new copper silicates from Christmas, Arizona. *Mineral. Mag.*, 43, 639–641. (2) (1980) *Amer. Mineral.*, 65, 1065 (abs. ref. 1).