

**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 <sub>2</sub>	41.5	40.77
MnO	0.5	
CuO	36.2	44.97
MgO	2.3	
CaO	3.8	
H <sub>2</sub> O	14.6	14.26
Total	98.9	100.00

(1) Christmas, Arizona, USA; average of two closely agreeing analyses. (2) Cu<sub>5</sub>Si<sub>6</sub>O<sub>17</sub>·7H<sub>2</sub>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).