

**Crystal Data:** Orthorhombic. *Point Group:* *mm2*. Only as crystals, to 5 mm, with excellent faces and good evidence of hemihedrism; as sprays of individuals.

**Physical Properties:** *Cleavage:* Good on {100}; poor on {010} and {011}. *Tenacity:* Brittle to semi-sectile as a result of alteration. Hardness = 4.5 D(meas.) = 3.5(1) D(calc.) = 3.516 Strongly pyroelectric.

**Optical Properties:** Transparent to translucent. *Color:* Colorless, milk-white, or colored in various tints as a result of alteration. *Luster:* Vitreous.

*Optical Class:* Biaxial (+). *Orientation:* *X* = *b*; *Y* = *a*; *Z* = *c*. *Dispersion:* *r* < *v*, very weak.  $\alpha = 1.656$   $\beta = 1.664$   $\gamma = 1.672$   $2V(\text{meas.}) = \text{n.d.}$   $2V(\text{calc.}) = 86^\circ$

**Cell Data:** *Space Group:* *Ama2*. *a* = 12.510(7) *b* = 6.318(3) *c* = 8.561(6) *Z* = 4

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

3.528 (100), 2.816 (100), 2.540 (100), 2.352 (70), 1.540 (60), 4.703 (50), 2.521 (50)

**Chemistry:**

	(1)	(2)
SiO <sub>2</sub>	31.0	33.65
ZnO	44.8	45.59
CaO	15.5	15.71
H <sub>2</sub> O	5.8	5.05
Total	97.1	100.00

(1) Christmas, Arizona, USA. (2) CaZn<sub>2</sub>Si<sub>2</sub>O<sub>7</sub>•H<sub>2</sub>O.

**Occurrence:** In a retrogressively altered tactite zone, closely related to the breakdown of sphalerite in the ores.

**Association:** Kinoite, apophyllite, calcite, xonotlite, smectite.

**Distribution:** In the USA, from the Christmas copper mine, Gila Co., Arizona.

**Name:** For Dr. Jun Ito (1926–1978), Japanese-American mineral chemist, Harvard University, Cambridge, Massachusetts, USA.

**Type Material:** University of Arizona, Tucson, Arizona; Harvard University, Cambridge, Massachusetts, 119097; National Museum of Natural History, Washington, D.C., USA, 136688; University of Paris, Paris; National School of Mines, Paris, France; The Natural History Museum, London, England, 1980,535.

**References:** (1) Williams, S.A. (1976) Junitoite, a new hydrated calcium zinc silicate from Christmas, Arizona. *Amer. Mineral.*, 61, 1255–1258. (2) Hamilton, R.D. and J.J. Finney (1985) The structure of junitoite, CaZn<sub>2</sub>Si<sub>2</sub>O<sub>7</sub>•H<sub>2</sub>O. *Mineral. Mag.*, 49, 91–95.