

**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . Crystals are slender blades, with prismatic {210}, {310}, and terminated by the dome {101}. Commonly as rosettes of many such crystals, to 3 mm.

**Physical Properties:** *Cleavage:* Distinct on {010}. *Fracture:* Irregular. Hardness = 3-4  
D(meas.) = 3.25(1) D(calc.) = 3.17 Fluoresces dull orange under SW UV.

**Optical Properties:** Transparent to translucent. *Color:* Colorless.

*Optical Class:* Biaxial (+). *Orientation:*  $X = b; Y = a; Z = c$ .  $a = 1.641(1) \beta = 1.660(1) \gamma = 1.682(1)$   
 $2V(\text{meas.}) = 76^\circ\text{-}78^\circ$

**Cell Data:** *Space Group:*  $P2_1/m$ .  $a = 10.618(2) b = 25.918(4) c = 8.6945(14) \beta = 127.633(3)^\circ Z = 4$

**X-ray Powder Pattern:** Gem mine, California, USA.

12.95 (100), 3.031 (45), 2.652 (30), 2.228 (20), 3.008 (18), 2.073 (18), 2.596 (17)

Chemistry:	(1)		(1)
SiO <sub>2</sub>	32.54	MgO	0.111
TiO <sub>2</sub>	17.31	CaO	0.045
B <sub>2</sub> O <sub>3</sub>	0.008	SrO	0.051
Al <sub>2</sub> O <sub>3</sub>	5.52	BaO	34.88
Fe <sub>2</sub> O <sub>3</sub>	0.16	Na <sub>2</sub> O	0.67
Nb <sub>2</sub> O <sub>5</sub>	0.022	K <sub>2</sub> O	2.70
MnO	0.035	<u>H<sub>2</sub>O</u>	<u>5.9</u>
		Total	99.952

(1) Gem mine, California, USA; weighted average of 20 electron microprobe and ion probe analyses; corresponds to  $(\text{Ba}_{2.10}\text{Mg}_{0.02}\text{Fe}_{0.02})_{\Sigma=2.14}(\text{K}_{0.53}\text{Na}_{0.20})_{\Sigma=0.73}\text{Ti}_{2.00}\text{Al}_{1.00}\text{Si}_{4.99}\text{O}_{18}\cdot 3\text{H}_2\text{O}$ .

**Occurrence:** In fractures and cavities of brecciated greenstone enclosed in blueschist.

**Association:** Neptunite, benitoite, joaquinite, natrolite.

**Distribution:** In the USA, at the Gem mine, San Benito Co., California.

**Name:** For Francis Tucker *Jones* (1905-1993), Research Chemical Microscopist of Berkeley, California, USA, who discovered the mineral.

**Type Material:** University of California, Santa Barbara, California, 7325; American Museum of Natural History, New York, New York, USA.

**References:** (1) Wise, W.S., A. Pabst, and J.R. Hinthorne (1977) Jonesite, a new mineral from the Benitoite Gem mine, San Benito County, California. *Mineral. Record*, 8, 453-456.  
(2) Krivovivhev S.V. and T. Armbruster (2004) The crystal structure of jonesite,  $\text{Ba}_2(\text{K},\text{Na})[\text{Ti}_2(\text{Si}_5\text{Al})\text{O}_{18}(\text{H}_2\text{O})](\text{H}_2\text{O})_n$ : A first example of titanosilicate with porous double layers. *Amer. Mineral.*, 89, 314-318.