

Jonesite**Ba₄(K, Na)₂Ti₄Al₂Si₁₀O₃₆•6H₂O**

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Crystal Data: Orthorhombic. *Point Group:* 222. 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.) = 3.239 Fluoresces dull orange under SW UV.

Optical Properties: Transparent to translucent. *Color:* Colorless.
Optical Class: Biaxial (+). *Orientation:* X = b; Y = a; Z = c. $\alpha = 1.641(1)$ $\beta = 1.660(1)$
 $\gamma = 1.682(1)$ 2V(meas.) = 76°–78°

Cell Data: *Space Group:* B2₂12. a = 13.730(5) b = 25.904(5) c = 10.608(3) 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 ₂	32.54	MgO	0.111
	TiO ₂	17.31	CaO	0.045
	B ₂ O ₃	0.008	SrO	0.051
	Al ₂ O ₃	5.52	BaO	34.88
	Fe ₂ O ₃	0.16	Na ₂ O	0.67
	Nb ₂ O ₅	0.022	K ₂ O	2.70
	MnO	0.035	H ₂ O	5.9
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			Total	99.952

(1) Gem mine, California, USA; weighted average of 20 electron microprobe and ion probe analyses; corresponds to (Ba_{4.19}Mg_{0.05}Fe_{0.04}Mn_{0.01}Ca_{0.01}Sr_{0.01})_{Σ=4.31}(K_{1.06}Na_{0.40})_{Σ=1.46}Ti_{3.99}Al_{1.99}Si_{9.97}O₃₆•6H₂O.

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.