

**Crystal Data:** Monoclinic. *Point Group:* 2. As radiating sheaves of crystals and fibrous masses, with individual fibers to about 0.3 mm. In fine intergrowths with vlasovite and apophyllite.

**Physical Properties:** Hardness = 3.5–4 D(meas.) = n.d. D(calc.) = 3.624

**Optical Properties:** Translucent. *Color:* Chalky white; colorless in thin section.

*Luster:* Vitreous.

*Optical Class:* Biaxial (-). *Orientation:*  $X \wedge c = 5^\circ\text{--}10^\circ$ ; Y and Z  $\simeq \perp$  to elongation.

$\alpha = 1.720(2)$   $\beta = 1.736(2)$   $\gamma = 1.738(2)$   $2V(\text{meas.}) = 20^\circ\text{--}40^\circ$

**Cell Data:** *Space Group:* C2.  $a = 6.852(2)$   $b = 8.659(1)$   $c = 4.686(2)$   $\beta = 101.69(2)^\circ$   
Z = 2

**X-ray Powder Pattern:** Kipawa River, Canada.

3.155 (100), 3.232 (80), 3.026 (80), 2.660 (80), 1.677 (70), 5.32 (60), 2.226 (50)

<b>Chemistry:</b>	(1)
	SiO <sub>2</sub> 40.8
	ZrO <sub>2</sub> 40.3
	CaO 18.4
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	Total 99.5

(1) Kipawa River, Canada; by electron microprobe, corresponding to Ca<sub>0.98</sub>Zr<sub>0.98</sub>Si<sub>2.03</sub>O<sub>7</sub>.

**Occurrence:** In eudialyte-rich pegmatitic lenses in a regionally metamorphosed agpaitic syenite complex (Kipawa River, Canada); an alteration product of eudialyte in syenite, quartz syenite, and alkalic granite (Pajarito Mountain, New Mexico, USA).

**Association:** Apophyllite, vlasovite, eudialyte, fluorite, graphite, calcite, apatite, “opal” (Kipawa River, Canada); eudialyte, zircon, chlorite (Pajarito Mountain, New Mexico, USA).

**Distribution:** From the [Sheffield Lake complex,] Kipawa River, Villedieu Township, Quebec, and in the Strange Lake complex, southeast of Lac Brisson, Quebec and Labrador, Newfoundland, Canada. On Pajarito Mountain, Mescalero Indian Reservation, Otero Co., New Mexico, USA.

**Name:** For Professor John Gittins, Canadian petrologist, University of Toronto, Toronto, Ontario, Canada.

**Type Material:** Canadian Geological Survey, Ottawa, 19558; University of Toronto, Toronto; Royal Ontario Museum, Toronto, Canada, M37321; Harvard University, Cambridge, Massachusetts, 117030, 117031; National Museum of Natural History, Washington, D.C., USA, 147002.

**References:** (1) Ansell, H.G., A.C. Roberts, A.G. Plant, and B.D. Sturman (1980) Gittinsite, a new calcium zirconium silicate from the Kipawa agpaitic syenite complex, Quebec. *Can. Mineral.*, 18, 201–203. (2) (1981) *Amer. Mineral.*, 66, 1274–1275 (abs. ref. 1). (3) Roelofsen-Ahl, J.N. and R.C. Peterson (1989) Gittinsite: a modification of the thortveitite structure. *Can. Mineral.*, 27, 703–708.