

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. As tabular crystals to 50 μm.

**Physical Properties:** *Cleavage:* Good in one direction. *Fracture:* n.d. *Tenacity:* n.d.  
Hardness = 5-5.5 VHN = 550-680 (100 g load). D(meas.) = n.d. D(calc.) = 3.37

**Optical Properties:** Transparent. *Color:* Blue, colorless in thin section. *Streak:* White.  
*Luster:* Vitreous.

*Optical Class:* Biaxial (+).  $\alpha = 1.664(2)$   $\beta = 1.674(2)$   $\gamma = 1.688(2)$   $2V(\text{calc.}) = 81^\circ$

**Cell Data:** *Space Group:* Cmc<sub>2</sub>m.  $a = 6.031(2)$   $b = 8.945(2)$   $c = 13.219(4)$   $Z = 4$

**X-ray Powder Pattern:** Itoigawa-Ohmi district, Niigata Prefecture, central Japan.  
2.68 (vvs), 4.26 (vs), 3.31 (vs), 2.75 (vs), 4.68 (s), 2.63 (s), 2.50 (s)

<b>Chemistry:</b>	(1)
SiO <sub>2</sub>	32.98
TiO <sub>2</sub>	0.87
Al <sub>2</sub> O <sub>3</sub>	27.67
Fe <sub>2</sub> O <sub>3</sub>	0.39
MgO	0.27
CaO	0.45
SrO	27.71
H <sub>2</sub> O	[9.66]
Total	100.00

(1) Itoigawa-Ohmi district, Niigata Prefecture, central Japan; average electron microprobe analysis, H<sub>2</sub>O by difference; corresponds to (Sr<sub>0.97</sub>Ca<sub>0.03</sub>Mg<sub>0.02</sub>) $\Sigma=1.02$ (Al<sub>1.97</sub>Ti<sub>0.04</sub>Fe<sub>0.02</sub>) $\Sigma=2.03$ Si<sub>1.99</sub>H<sub>3.89</sub>O<sub>10</sub>.

**Mineral Group:** Lawsonite group.

**Occurrence:** Product of late-stage high-P/T metamorphism, in a thin veinlet cutting a lavender-colored Ti-bearing jadeitite boulder in a river cutting serpentinite melange.

**Association:** Jadeite, natrolite, Sr-bearing pectolite, rutile, titanite.

**Distribution:** From the seashore of Oyashirazu, ~15 km west southwest of Itoigawa Station, Itoigawa-Ohmi district, Niigata Prefecture, central Japan.

**Name:** For the district in Japan, *Itoigawa*-Ohmi, where the first samples were collected.

**Type Material:** National Science Museum, Tokyo (NSM M-27872) and at Fossa Magna Museum, Itoigawa, Niigata (FMM00662), Japan.

**References:** (1) Miyajima, H., S. Matsubara, R. Miyawaki, and K. Ito (1999) Itoigawaite, a new mineral, the Sr analogue of lawsonite, in jadeitite from the Itoigawa-Ohmi district, central Japan. *Mineral. Mag.*, 63(6), 909-916. (2) (2000) *Amer. Mineral.*, 85(5-6), 874 (abs. ref. 1).