Itoigawaite $SrAl_2Si_2O_7(OH)_2 \cdot H_2O$

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 (+). α = 1.664 (2) β = 1.674 (2) γ = 1.688 (2) 2V(calc.) = 81°

Cell Data: *Space Group*: *Cmcm*. 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)

Chemistry:

	(1)
SiO_2	32.98
TiO_2	0.87
Al_2O_3	27.67
Fe_2O_3	0.39
MgO	0.27
CaO	0.45
SrO	27.71
H_2O	[9.66]
Total	100.00

(1) Itoigawa-Ohmi district, Niigata Prefecture, central Japan; average electron microprobe analysis, H_2O by difference; corresponds to $(Sr_{0.97}Ca_{0.03}Mg_{0.02})_{\Sigma=1.02}(Al_{1.97}Ti_{0.04}Fe_{0.02})_{\Sigma=2.03}Si_{1.99}H_{3.89}O_{10}$.

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).