

Crystal Data: Monoclinic. *Point Group:* $2/m$. As euhedral to subhedral prismatic crystals to 0.3 mm, commonly hollow and in fan-shaped aggregates.

Physical Properties: *Cleavage:* None. *Fracture:* n.d. *Tenacity:* n.d. *Hardness* = 5.5
VHN = 681-743 (100 g load). *D(meas.)* = n.d. *D(calc.)* = 4.13

Optical Properties: Transparent. *Color:* Gray with a blue tint. *Streak:* White. *Luster:* Adamantine.
Optical Class: Biaxial (+). Indices are higher than those of titanite.

Cell Data: *Space Group:* $P2_1/a$ (pseudo space group $C2/m$). $a = 13.848(7)$ $b = 5.626(2)$
 $c = 11.878(6)$ $\beta = 114.19(4)^\circ$

X-ray Powder Pattern: Itoigawa-Ohmi district, Niigata Prefecture, central Japan.
2.71 (100), 3.09 (95), 2.96 (95), 1.950 (95), 2.17 (90), 3.01 (90), 3.16 (70)

Chemistry:	(1)
SrO	38.84
TiO ₂	39.06
<u>SiO₂</u>	<u>22.60</u>
Total	100.50

(1) Itoigawa-Ohmi district, Niigata Prefecture, central Japan; average of 6 electron microprobe analyses; corresponding to $\text{Sr}_{3.92}\text{Ti}_{5.11}\text{Si}_{3.93}\text{O}_{22}$.

Mineral Group: Perrierite-chevkinite group.

Occurrence: From a boulder of Ti-bearing jadeitite, the product of late stage high-P/T metamorphism.

Association: Jadeite, natrolite, lamprophyllite, titanite, zircon, rutile, tausonite, rengerite.

Distribution: In a boulder from the Kotaki-gawa River, Itoigawa City, Itoigawa-Ohmi district, Niigata Prefecture, central Japan.

Name: Honors Dr. Satoshi *Matsubara*, Department of Geology, National Science Museum, Tokyo, Japan, in recognition of his work on strontium-dominant minerals from Japan.

Type Material: National Science Museum, Tokyo (NSM-M28084) and the Fossa Magna Museum, Itoigawa, Niigata (FMM01309), Japan.

References: (1) Miyajima, H., R. Miyawaki, and K. Ito (2002) Matsubaraite, $\text{Sr}_4\text{Ti}_5(\text{Si}_2\text{O}_7)_2\text{O}_8$, a new mineral, the Sr-Ti analogue of perrierite in jadeite from the Itoigawa-Ohmi district, Niigata Prefecture, Japan. *Eur. J. Mineral.*, 14, 1119-1128. (2) (2003) *Amer. Mineral.*, 88(11), 1837-1838 (abs. ref. 1).