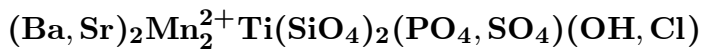


Yoshimuraite



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Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As platy to bladed or tabular crystals, to 5 cm; in stellate groups and platy masses. *Twinning:* Polysynthetic on {010}, common.

Physical Properties: *Cleavage:* Perfect on {010}, distinct on {101}. *Tenacity:* Brittle. Hardness = 4.5 D(meas.) = 4.13–4.20 D(calc.) = 4.21

Optical Properties: Transparent to translucent. *Color:* Orange, red, dark brown; in transmitted light, brown, orange-brown to yellow.

Optical Class: Biaxial (+). *Pleochroism:* X = bright yellow; Y = orange-brown; Z = brown.

Orientation: X' \simeq a; Z' \simeq c. *Dispersion:* r > v. *Absorption:* Z \geq Y > Z. $\alpha = 1.763$ – 1.768 $\beta = 1.777$ $\gamma = 1.785$ – 1.794 2V(meas.) = 80°–90°

Cell Data: *Space Group:* $P\bar{1}$. a = 7.00(1) b = 14.71(2) c = 5.39(1) $\alpha = 93.5(2)^\circ$ $\beta = 90.2(2)^\circ$ $\gamma = 95.3(2)^\circ$ Z = 2

X-ray Powder Pattern: Noda-Tamagawa mine, Japan.

3.40 (10), 2.94 (10), 4.90 (6), 3.24 (6), 2.78 (6), 4.11 (4), 3.13 (4)

Chemistry:	(1)	(2)		(1)	(2)
SiO ₂	18.25	17.20	SrO	4.62	3.03
TiO ₂	10.00	7.47	BaO	33.51	38.11
Al ₂ O ₃		0.21	Na ₂ O	0.16	0.10
Fe ₂ O ₃	1.32	3.48	K ₂ O	0.03	0.01
FeO	1.47	3.16	Cl	0.41	
MnO	17.64	15.83	H ₂ O	2.34	1.06
ZnO	0.50		P ₂ O ₅	3.98	4.62
MgO	0.56	0.31	SO ₃	5.40	3.84
CaO		1.45	–O = Cl ₂	0.09	
			Total	100.10	99.88

(1) Noda-Tamagawa mine, Japan; corresponds to $(\text{Ba}_{1.50}\text{Sr}_{0.30}\text{Na}_{0.04})_{\Sigma=1.84}(\text{Mn}_{1.70}\text{Fe}_{0.14}^{2+}\text{Mg}_{0.10}\text{Zn}_{0.04})_{\Sigma=1.98}(\text{Ti}_{0.85}\text{Fe}_{0.11}^{3+})_{\Sigma=0.96}\text{Si}_{2.08}\text{O}_8[(\text{P}_{0.76}\text{S}_{0.92})_{\Sigma=1.68}\text{O}_4](\text{OH, Cl})_{1.45}$. (2) Taguchi mine, Japan; corresponds to $(\text{Ba}_{1.72}\text{Sr}_{0.20}\text{Na}_{0.01})_{\Sigma=1.93}(\text{Mn}_{1.55}\text{Fe}_{0.30}^{2+}\text{Ca}_{0.18}\text{Mg}_{0.04})_{\Sigma=2.07}(\text{Ti}_{0.65}\text{Fe}_{0.29}^{3+}\text{Al}_{0.02})_{\Sigma=0.96}\text{Si}_{1.99}\text{O}_{8.40}[(\text{P}_{0.44}\text{S}_{0.33})_{\Sigma=0.77}\text{O}_{3.08}](\text{OH})_{0.82}$.

Occurrence: In the border facies of an alkalic pegmatite cutting a stratiform manganese deposit (Noda-Tamagawa mine, Japan).

Association: Richterite, rhodonite, barian potassic feldspar, “aegirine-augite,” riebeckite, quartz.

Distribution: In the Noda-Tamagawa mine, Tamagawamura, and the Hijikuzu mine, Iwate Prefecture, and the Taguchi mine, Shidara, Aichi Prefecture, Japan.

Name: In honor of Professor Toyofumi Yoshimura, Kyushu University, Hakozaki, Japan.

Type Material: National Science Museum, Tokyo, Japan, M15110; The Natural History Museum, London, England; Harvard University, Cambridge, Massachusetts, 106170; National Museum of Natural History, Washington, D.C., USA, 107416.

References: (1) Watanabe, T., Y. Takeuchi, and J. Ito (1961) The minerals of the Noda-Tamagawa mine, Iwate Prefecture, Japan. III. Yoshimuraite, a new barium-titanium-manganese-silicate mineral. *Mineral. J. (Japan)*, 3, 156–167. (2) (1961) *Amer. Mineral.*, 46, 1515–1516 (abs. ref. 1). (3) Hirowatari, F. and K. Isono (1966) Yoshimuraite from the manganese ore deposits of Taguchi mine, Aichi Pref., Japan. *J. Mineral. Soc. Japan*, 6, 230–243 (in Japanese). (4) (1966) *Mineral. Abs.*, 17, 694 (abs. ref. 3).

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