

Kinoshitalite**(Ba, K)(Mg, Mn, Al)₃Si₂Al₂O₁₀(OH)₂**

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Crystal Data: Monoclinic. *Point Group:* 2/m. Forms small scales, < 1 mm.**Physical Properties:** *Cleavage:* {001}, perfect. *Tenacity:* Brittle. *Hardness* = 2.5–3
D(meas.) = 3.30 D(calc.) = 3.33**Optical Properties:** Semitransparent. *Color:* Yellow-brown to colorless; light yellow to colorless in thin section. *Luster:* Vitreous.*Optical Class:* Biaxial (-). *Pleochroism:* X = very light yellow to light yellow; Y = Z = light yellow with brownish tinge. *Absorption:* Y ≈ Z > X. α = 1.619 β = 1.628–1.633 γ = 1.635
2V(meas.) = 23°**Cell Data:** *Space Group:* C2/m. a = 5.345(3) b = 9.250(4) c = 10.256(8)
β = 99.99(6)° Z = 2**X-ray Powder Pattern:** Noda-Tamagawa mine, Japan.

3.37 (100), 2.52 (55), 2.020 (55), 5.05 (50), 10.1 (45), 1.684 (15), 3.16 (5)

Chemistry:

	(1)	(2)		(1)	(2)
SiO ₂	24.58	23.43	BaO	17.85	27.60
TiO ₂	0.16		Na ₂ O	0.68	0.11
Al ₂ O ₃	22.06	19.25	K ₂ O	3.30	0.24
Fe ₂ O ₃	0.71	1.87	F	0.21	
Mn ₂ O ₃	3.24		H ₂ O ⁺	2.90	
FeO	0.04		H ₂ O ⁻	0.20	
MnO	7.38	2.62	H ₂ O		3.50
MgO	16.60	21.95	-O = F ₂	0.09	
CaO	0.05	0.05	Total	99.87	100.62

(1) Noda-Tamagawa mine, Japan; corresponds to (Ba_{0.58}K_{0.35}Na_{0.11}Ca_{0.01})_{Σ=1.05}(Mg_{2.06}Mn_{0.52}²⁺Al_{0.22}Mn_{0.21}³⁺Fe_{0.04}³⁺Ti_{0.01})_{Σ=3.06}Si_{2.05}Al_{1.94}O₁₀[(OH)_{1.62}O_{0.33}F_{0.06}]_{Σ=2.01}. (2) Netra, India; by electron microprobe, total Fe as Fe₂O₃; corresponding to (Ba_{0.93}K_{0.03}Na_{0.02}Ca_{0.01})_{Σ=0.99}(Mg_{2.80}Mn_{0.19}Fe_{0.08})_{Σ=3.07}Si_{2.01}(Al_{1.94}Fe_{0.05})_{Σ=1.99}O₁₀(OH)₂.

Polymorphism & Series: 1M, 2M₁ polytypes.**Mineral Group:** Mica group.**Occurrence:** In hausmannite-tephroite ore (Noda-Tamagawa mine, Japan); in manganese-rich rocks invaded by silicic pegmatite and carbonate veins (Netra, India).**Association:** Hausmannite, tephroite, celsian, quartz, spessartine, rhodonite, chalcopyrite, pyrrhotite, rhodochrosite, hübnerite, sonolite (Noda-Tamagawa mine, Japan); braunite, hausmannite, bixbyite, alkalic feldspar, hematite, calcite, dolomite, quartz (Netra, India).**Distribution:** In the Noda-Tamagawa mine, Iwate Prefecture, and at Hokkejino, Kyoto Prefecture, Japan. From Netra, Balaghat district, Madhya Pradesh, India. On Trumbull Peak, near Incline, Mariposa Co., California, USA. From Långban, Värmland, Sweden.**Name:** For Dr. Kameki Kinoshita (1896–1974), investigator of ore deposits in Japan.**Type Material:** National Science Museum, Tokyo, Japan, M19511; National School of Mines, Paris, France.**References:** (1) Yoshii, M., K. Maeda, T. Kato, T. Watanabe, S. Yui, A. Kato, and K. Nagashima (1973) Kinoshitalite, a new mineral from the Noda-Tamagawa mine, Iwate Prefecture. *Chigaku Kenkyu* (Geosci. Mag.), 24, 181–190 (in Japanese). (2) (1975) *Amer. Mineral.*, 60, 486–487 (abs. ref. 1). (3) Kato, T., Y. Miura, M. Yoshii, and K. Maeda (1979) The crystal structures of 1M-kinoshitalite, a new barium brittle mica and 1M-manganese trioctahedral micas. *Mineral. J. (Japan)*, 9, 392–408. (4) Dasgupta, S., S. Chakraborti, P. Sengupta, P.K. Bhattacharya, H. Banerjee, and M. Fukuoka (1989) Compositional characteristics of kinoshitalite from the Sausar group, India. *Amer. Mineral.*, 74, 200–202.

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