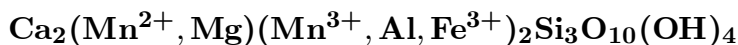


Okhotskite

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Crystal Data: [Monoclinic] (by analogy to the pumpellyite group). *Point Group:* [2/m.]
As long prismatic crystals, to 0.2 mm, and as aggregates of prisms.

Physical Properties: *Cleavage:* One set observed in thin section. *Hardness* = 6
D(meas.) = n.d. D(calc.) = 3.40

Optical Properties: Transparent. *Color:* Deep orange. *Streak:* Pale orange.

Luster: Vitreous.

Optical Class: Biaxial (-). *Pleochroism:* Strong; X = yellow; Y = Z = deep orange.

Orientation: Y = b; Z \wedge c = 9°–14°. *Absorption:* Z > Y > X. $\alpha = 1.782(5)$ $\beta = 1.820(5)$
 $\gamma = 1.827(5)$ 2V(meas.) = 46(5)° 2V(calc.) = 46°

Cell Data: *Space Group:* [A2/m.] a = 8.887(5) b = 6.000(4) c = 19.53(2)
 $\beta = 97.08(6)^\circ$ Z = 4

X-ray Powder Pattern: Kokuriki mine, Japan.

2.961 (100), 3.87 (70), 2.720 (70), 4.76 (60), 2.665 (45), 2.553 (45), 2.384 (45)

Chemistry:

	(1)
SiO ₂	34.25
TiO ₂	0.09
Al ₂ O ₃	4.49
Fe ₂ O ₃	6.03
Mn ₂ O ₃	16.69
MnO	9.18
MgO	2.08
CaO	20.11
Na ₂ O	0.25
K ₂ O	0.03
H ₂ O	6.89
Total	100.09

(1) Kokuriki mine, Japan; by electron microprobe, H₂O by TGA, Fe³⁺ confirmed by Mössbauer spectroscopy, Mn²⁺:Mn³⁺ calculated from stoichiometry; corresponds to (Ca_{1.91}Na_{0.04})_{Σ=1.95} (Mn_{0.69}Mg_{0.28})_{Σ=0.97} (Mn_{1.13}³⁺Al_{0.47}Fe_{0.40}³⁺)_{Σ=2.00}Si_{3.03}[O_{9.93}(OH)_{4.07}]_{Σ=14.00}.

Mineral Group: Pumpellyite group.

Occurrence: In network veinlets cutting hematite-rich ores.

Association: Hematite, quartz, piemontite, neotocite, bementite, apatite, inesite, rhodochrosite.

Distribution: From the Kokuriki mine, at Hiyoshi, about 20 km north of Kitami City, Hokkaido, Japan.

Name: For the Sea of Okhotsk, near the type locality in Japan.

Type Material: n.d.

References: (1) Togari, K. and M. Akasaka (1987) Okhotskite, a new mineral, an Mn³⁺-dominant member of the pumpellyite group, from the Kokuriki mine, Hokkaido, Japan. *Mineral. Mag.*, 51, 611–614. (2) (1988) *Amer. Mineral.*, 73, 1495–1496 (abs. ref. 1).