

Osumilite-(Mg)

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Crystal Data: Hexagonal. *Point Group:* 6/m 2/m 2/m. Crystals tabular to prismatic, elongated || [0001], to 0.1 mm. Also anhedral, massive.

Physical Properties: Hardness = n.d. D(meas.) = 2.58–2.68 D(calc.) = [2.59]

Optical Properties: Semitransparent. *Color:* Colorless, pink, blue, black. *Luster:* Pearly. *Optical Class:* Uniaxial (+); anomalously biaxial. *Pleochroism:* Faint; O = colorless to pink; E = colorless to pale blue. $\omega = 1.540\text{--}1.547$ $\epsilon = 1.541\text{--}1.546$ $2V(\text{meas.}) = 5^\circ\text{--}15^\circ$

Cell Data: *Space Group:* P6/mcc. $a = 10.08$ $c = 14.35$ $Z = [2]$

X-ray Powder Pattern: Near Nain, Canada. (ICDD 30-942).
3.22 (100), 5.01 (60), 4.11 (60), 3.72 (60), 2.915 (60), 2.767 (60), 7.1 (40)

Chemistry:

	(1)	(2)
SiO ₂	64.35	62.75
TiO ₂	0.06	0.08
Al ₂ O ₃	19.38	21.65
FeO	2.16	0.94
MnO	0.24	0.00
MgO	9.46	9.07
CaO	0.13	0.10
Na ₂ O	0.27	0.28
K ₂ O	3.98	4.60
Total	100.03	99.47

(1) Tieveragh, Ireland; by electron microprobe, corresponds to $(\text{K}_{0.84}\text{Na}_{0.09}\text{Ca}_{0.02})_{\Sigma=0.95}(\text{Mg}_{1.69}\text{Fe}_{0.30}^{2+}\text{Mn}_{0.03})_{\Sigma=2.02}(\text{Al}_{2.36}\text{Mg}_{0.63}\text{Ti}_{0.01})_{\Sigma=3.00}(\text{Si}_{10.60}\text{Al}_{1.40})_{\Sigma=12.00}\text{O}_{30}$. (2) Mt. Riiser-Larsen, Antarctica; by electron microprobe, corresponds to $(\text{K}_{0.97}\text{Na}_{0.09}\text{Ca}_{0.02})_{\Sigma=1.08}(\text{Mg}_{2.82}\text{Fe}_{0.13}^{2+}\text{Mn}_{0.03}\text{Ti}_{0.01})_{\Sigma=2.99}(\text{Al}_{2.59}\text{Mg}_{0.41})_{\Sigma=3.00}(\text{Si}_{10.37}\text{Al}_{1.63})_{\Sigma=12.00}\text{O}_{30}$.

Mineral Group: Milarite group.

Occurrence: In fused xenoliths and contact metamorphic rocks.

Association: Cordierite, sodic plagioclase, sanidine, “hypersthene,” tridymite, quartz, biotite, zircon, magnetite, hematite, graphite.

Distribution: Following are a few localities for material with characterized Fe²⁺:Mg. From Tieveragh, Co. Antrim, Ireland. At Vikeså, Rogaland, Norway. From Iriki, Kagoshima Prefecture; at Haneyama, Oita Prefecture; on the Akagi volcano, Gumma Prefecture; and from Rishiri Island, Japan. On the Malyi Nepiskol volcano, Caucasus Mountains, Russia. From Reference Peak, Mt. Riiser-Larsen, and nearby, in Enderby Land, Antarctica. In the Nain complex, at Ikkirikulluit Brook, Labrador, Newfoundland, Canada.

Name: For the relation to *osumilite* and predominance of *magnesium*.

Type Material: National Museum of Natural History, Washington, D.C., USA, 128117, 137452.

References: (1) Deer, W.A., R.A. Howie, and J. Zussman (1986) Rock-forming minerals, (2nd edition), v. 1B, disilicates and ring silicates, 541–558. (2) Chinner, G.A. and P.D. Dixon (1973) Irish osumilite. *Mineral. Mag.*, 39, 189–192. (3) Berg, J.H. and E.P. Wheeler, II (1976) Osumilite of deep-seated origin in the contact aureole of the anorthositic Nain complex, Labrador. *Amer. Mineral.*, 61, 29–37. (4) Armbruster, T. and R. Oberhänsli (1988) Crystal chemistry of double-ring silicates: structural, chemical, and optical variation in osumilites. *Amer. Mineral.*, 73, 585–594.

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