Muskoxite $Mg_7Fe_4^{3+}O_{13}\cdot 10H_2O$

Crystal Data: Hexagonal. *Point Group:* $\overline{3}\,2/m$ (probable). As hexagonal crystals, to 0.25 mm, very thin on {0001}, in reticular to divergent aggregates, some intergrown to simulate larger trigonal crystals. In cross-fiber veinlets, anhedral grains; fine-grained powdery.

Physical Properties: *Cleavage:* Perfect on {0001}, micaceous. *Tenacity:* Brittle, flexible. Hardness = ∼3 D(meas.) = 3.10–3.20 D(calc.) = n.d.

Optical Properties: Translucent. *Color:* Dark reddish brown; amber-orange to deep red in transmitted light. *Streak:* Pale orange-brown. *Luster:* Vitreous.
Optical Class: Biaxial (–). n = 1.80–1.81 2V(meas.) = 10°–40°

Cell Data: *Space Group:* $R\overline{3}m$ pseudocell. a = 3.07 c = 4.6 Z = n.d.

X-ray Powder Pattern: Muskox intrusion, Canada; preferred orientation evident.
2.308 (10), 4.61 (8), 1.746 (6), 1.543 (4), 4.12 (3), 2.660 (3), 4.44 (2)

Chemistry:

	(1)	(2)
Fe_2O_3	41.1	40.86
FeO	0.0	
MgO	35.4	36.09
H_2O	23.8	23.05
CO_2	< 1.	
Total	100.3	100.00

(1) Muskox intrusion, Canada; corresponds to $Mg_{6.82}Fe^{3+}_{4.00}O_{12.82}\cdot 10.2H_2O$.
(2) $Mg_7Fe^{3+}_4O_{13}\cdot 10H_2O$.

Occurrence: In thin veinlets in serpentinite from a layered ultramafic complex.

Association: Lizardite, coalingite, Mg–Fe–Mn oxides.

Distribution: In the Muskox intrusion, Coppermine River area, Northwest Territories, Canada.

Name: For its occurrence in the Muskox intrusion, Canada.

Type Material: Canadian Geological Survey, Ottawa, 12123; Royal Ontario Museum, Toronto, Canada, M36526.

References: (1) Jambor, J.L. (1969) Muskoxite, a new hydrous magnesium-ferric iron oxide from the Muskox intrusion, Northwest Territories, Canada. Amer. Mineral., 54, 684–696.