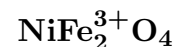


Trevorite



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Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. Rarely as small octahedra; granular, massive.

Physical Properties: *Fracture:* Uneven. Hardness = 5 D(meas.) = 5.164 D(calc.) = 5.20 Strongly magnetic.

Optical Properties: Opaque, transparent in thinnest fragments. *Color:* Black with greenish hue. *Streak:* Brown. *Luster:* Metallic.

Optical Class: Isotropic. $n = 2.3$

R: n.d.

Cell Data: *Space Group:* $Fd\bar{3}m$ (synthetic). $a = 8.839$ $Z = 8$

X-ray Powder Pattern: Synthetic.

2.513 (100), 1.4760 (40), 2.948 (30), 1.6051 (30), 2.085 (25), 4.82 (20), 1.0857 (16)

Chemistry:	(1)	(2)	(3)
V ₂ O ₅		0.02	
P ₂ O ₅		0.02	
SiO ₂	1.40	0.25	
TiO ₂		0.05	
Al ₂ O ₃		0.18	
Fe ₂ O ₃	66.24		68.13
FeO	1.96	73.06	
MnO		0.07	
NiO	29.71	21.81	31.87
MgO	0.24	0.71	
H ₂ O	0.36		
Total	99.91	96.17	100.00

(1) Bon Accord, South Africa. (2) Mt. Clifford, Australia; by electron microprobe, total Fe as FeO; with Fe³⁺:Fe²⁺ calculated from stoichiometry, corresponds to (Ni_{0.66}Fe_{0.30}Mg_{0.04})_{Σ=1.00}(Fe_{1.99}Al_{0.01})_{Σ=2.00}O₄. (3) NiFe₂O₄.

Mineral Group: Spinel group.

Occurrence: In a small tabular body of nickeliferous serpentinite, probably a contact deposit, along the junction of quartzite and an ultramafic intrusive (Bon Accord, South Africa); below a nickel sulfide deposit in gabbro intruding peridotites (Mt. Clifford, Australia).

Association: Nimitite, willemseite, nickeloan talc, violarite, millerite, reevesite, goethite (Bon Accord, South Africa); nickel, heazlewoodite, millerite (Mt. Clifford, Australia).

Distribution: Found three km west of the Scotia talc mine, Bon Accord area, Barberton, Transvaal, South Africa. In the Mt. Clifford nickel deposit, 54 km north-northwest of Leonora, Western Australia. As a minor constituent of the widespread sediments marking major geological period boundaries, as the Cretaceous-Tertiary.

Name: Honors Major Tudor Gruffydd Trevor (1865–1958), Welsh–South African geologist, Mining Inspector for the Pretoria district, Transvaal, South Africa.

Type Material: National Museum of Natural History, Washington, D.C., USA, 132464, 132465.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 698–707. (2) Walker, T.L. (1923) Trevorite, a distinct mineral species. Univ. Toronto Stud. Geol. Ser., 16, 53–54. (3) Hudson, D.R. and G.A. Travis (1981) A native nickel-heazlewoodite-ferroan trevorite assemblage from Mount Clifford, Western Australia. Econ. Geol., 76, 1686–1697. (4) (1960) NBS Circ. 539, 10, 44.

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