Nimite $(Ni, Mg, Fe^{2+})_5Al(Si_3Al)O_{10}(OH)_8$

Crystal Data: Monoclinic. *Point Group:* $2/m$. As irregular grains, to 0.5 mm, in veins.

Physical Properties: *Cleavage:* {001}, pronounced. Hardness = 3 D(meas.) = 3.123(2) D(calc.) = 3.20

Optical Properties: Translucent. *Color:* Yellowish green.
Optical Class: Biaxial (–). *Pleochroism:* Faint; X = yellow-green; Z = apple-green.
$\alpha = 1.637(2)$ $\beta = 1.647(2)$ $\gamma = \sim 1.647(2)$ 2V(meas.) = 15(2)°

Cell Data: *Space Group:* $C2/m$. $a = 5.320(1)$ $b = 9.214(3)$ $c = 14.302(3)$ $\beta = 97.10(2)°$ Z = 2

X-ray Powder Pattern: Bon Accord, South Africa.
7.10 (100), 3.55 (45), 14.2 (25), 4.74 (16), 2.841 (7), 2.582 (3), 2.003 (3)

Chemistry:

	(1)
SiO_2	27.27
Al_2O_3	15.21
Fe_2O_3	4.35
Cr_2O_3	< 0.01
FeO	2.78
MnO	0.06
CoO	0.38
NiO	29.49
MgO	10.13
CaO	0.38
H_2O^+	10.48
H_2O^-	0.27
Total	100.80

(1) Bon Accord, South Africa; corresponds to $(Ni_{2.62}Mg_{1.66}Al_{0.98}Fe^{3+}_{0.36}Fe^{2+}_{0.26}Ca_{0.04}Co_{0.04})_{\Sigma=5.96}(Si_{3.01}Al_{0.99})_{\Sigma=4.00}O_{10.29}(OH)_{7.71}$.

Mineral Group: Chlorite group.

Occurrence: In a small tabular body of nickeliferous serpentinite, probably a contact deposit, along the junction of quartzite and an ultramafic intrusive; it appears to have formed at ~730 °C and < 2 kbar during thermal metamorphism, possibly of a nickel-rich meteorite.

Association: Willemseite, nickeloan talc, ferroan trevorite, bonaccordite, violarite, millerite, reevesite, goethite.

Distribution: From three km west of the Scotia talc mine, Bon Accord area, Barberton, Transvaal, South Africa.

Name: An acronym for the National Institute of Metallurgy of South Africa.

Type Material: National Museum of Natural History, Washington, D.C., USA, 132463–132465.

References: (1) Hiemstra, S.A. and S.A. De Waal (1968) Nickel minerals from Barberton. II. Nimite, a nickelian chlorite. Nat. Inst. Met. (South Africa) Res. Rep. 344, 1–10. (2) (1969) Amer. Mineral., 54, 1739–1740 (abs. ref. 1). (3) De Waal, S.A. (1970) Nickel minerals from Barberton, South Africa: II. Nimite, a nickel-rich chlorite. Amer. Mineral., 55, 18–30.