

# Natalyite

# Na(V<sup>3+</sup>, Cr<sup>3+</sup>)Si<sub>2</sub>O<sub>6</sub>

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**Crystal Data:** Monoclinic. *Point Group:* 2/m. As grains, to 1 mm, commonly acicular to asbestiform || [001], showing {110}, and {100} or {010}.

**Physical Properties:** *Cleavage:* {110}, distinct; parting on {001}. *Hardness* = ~7  
VHN = 1013–1079 (50 g load). *D*(meas.) = n.d. *D*(calc.) = 3.55

**Optical Properties:** Translucent. *Color:* Bright green with a tinge of yellow; in transmitted light, emerald-green to yellow. *Streak:* Green. *Luster:* Vitreous to silky.

*Optical Class:* Biaxial (-). *Pleochroism:* Strong; X = greenish yellow to yellow; Y = Z = emerald-green.  $\alpha = 1.741(2)$   $\beta = 1.762(3)$   $\gamma = 1.762(3)$   $2V(\text{meas.}) = 8^\circ\text{--}12^\circ$

**Cell Data:** *Space Group:* C2/c.  $a = 9.58(1)$   $b = 8.72(1)$   $c = 5.27(1)$   $\beta = 107.16^\circ$   
Z = 4

**X-ray Powder Pattern:** Slyudyanka complex, Russia.  
2.96 (10), 2.52 (10), 2.87 (8), 1.391 (8b), 2.46 (7), 6.24 (6), 4.36 (6)

**Chemistry:**

	(1)
SiO <sub>2</sub>	53.15
TiO <sub>2</sub>	0.11
Al <sub>2</sub> O <sub>3</sub>	0.75
V <sub>2</sub> O <sub>3</sub>	17.97
Cr <sub>2</sub> O <sub>3</sub>	12.23
MgO	1.28
CaO	1.78
Na <sub>2</sub> O	12.65
Total	99.92

(1) Slyudyanka complex, Russia; by electron microprobe, average of five analyses; corresponds to (Na<sub>0.92</sub>Ca<sub>0.07</sub>)<sub>Σ=0.99</sub>(V<sub>0.54</sub>Cr<sub>0.36</sub>Mg<sub>0.07</sub>Al<sub>0.03</sub>)<sub>Σ=1.00</sub>Si<sub>1.99</sub>O<sub>6</sub>.

**Mineral Group:** Pyroxene group.

**Occurrence:** In Cr, V-rich diopside-quartz rocks that are part of a Precambrian metamorphic complex (Slyudyanka complex, Russia).

**Association:** Eskolaite–karelianite, uvarovite–goldmanite, chromian vanadian tourmaline, pyrite, apatite, diopside (Slyudyanka complex, Russia).

**Distribution:** From the Pereval marble quarry, near Slyudyanka, Lake Baikal, Siberia, Russia. On the Zaonezhki Peninsula, southern Karelia.

**Name:** In honor of the geologist Nataliya Vasil'evna Frolova (1907–1960), geologist, Irkutsk University, Irkutsk, Russia.

**Type Material:** A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.

**References:** (1) Reznitskii, L.Z., E.V. Skliarov, and Z.F. Ushchapovskaya (1985) Natalyite Na(V,Cr)Si<sub>2</sub>O<sub>6</sub> – a new chromium-vanadium pyroxene from Slyudyanka. *Zap. Vses. Mineral. Obshch.*, 114, 630–635 (in Russian). (2) (1987) *Amer. Mineral.*, 72, 223–224 (abs. ref. 1).