Droninoite $Ni_6Fe^{3+}_2Cl_2(OH)_{16}\cdot 4H_2O$

Crystal Data: Hexagonal. *Point Group*: $\bar{3}$ 2/*m*, 3*m*, or 32. As grains <1 μm; earthy aggregates.

Physical Properties: *Cleavage*: None observed. *Fracture*: n.d. *Tenacity*: n.d.
Hardness = 1-1.5 D(meas.) = n.d. D(calc.) = 2.857

Optical Properties: Earthy. *Color*: Dark green to brown, dark gray-green. *Streak*: n.d.
Luster: n.d.
Optical Class: *n*(average) = 1.72(1) Nonpleochroic.

Cell Data: *Space Group*: *R*$\bar{3}$ *m*, *R*3*m*, or *R*32. *a* = 6.206(2) c = 46.184(18) Z = 6

X-ray Powder Pattern: Dronino iron meteorite.
7.76 (100), 3.88 (40), 2.64 (25), 1.965 (15), 1.546 (10), 1.536 (10), 1.337 (10b)

Chemistry:

	(1)
NiO	36.45
FeO	12.15
Fe_2O_3	17.55
H_2O	[23.78]
Cl	13.01
$-O = Cl_2$	2.94
Total	100.00

(1) Dronino iron meteorite; average electron microprobe analysis supplemented by IR spectroscopy, H_2O by difference; corresponds to $Ni_{2.16}Cl_{1.62}(OH)_{7.10}\cdot 2.28H_2O$.

Mineral Group: Hydrotalcite supergroup, hydrotalcite group.

Occurrence: In a fragment of a weathered iron meteorite.

Association: Taenite, violarite, troilite, chromite, goethite, lepidocrocite, nickelbischofite, amorphous Fe^{3+} hydroxides.

Distribution: From the Dronino iron meteorite.

Name: For the village of *Dronion*, Russia near which the sample was collected.

Type Material: A.E. Fersman Mineralogical Museum, RAS, Moscow, Russia (3676/1).

References: (1) Chukanov, N.V., I.V. Pekov, L.A. Levitskaya, and A.E. Zadov (2009) Droninoite, $Ni_3Fe^{3+}Cl(OH)_8\cdot 2H_2O$, a new hydrotalcite-group mineral species from the weathered Dronino meteorite. Geology of Ore Deposits, 51, 767-773.