Chromo-alumino-povondraite $NaCr_3(Al_4Mg_2)Si_6O_{18}(BO_3)_3(OH)_3O$

Crystal Data: Hexagonal. *Point Group*: 3*m*. As terminated prismatic crystals, to 0.3 mm.

Physical Properties: *Cleavage*: [Poor/indistinct on {0001}.] *Fracture*: Conchoidal. *Tenacity*: Brittle. Hardness = 7.5 D(meas.) = n.d. D(calc.) = 3.227

Optical Properties: Transparent. *Color*: Green. *Streak*: Pale green. *Luster*: Vitreous. *Optical Class*: Uniaxial (–). ω = 1.745(5) ε = 1.685(5) *Pleochroism*: *O* = emerald green; *E* = pale yellowish green.

Cell Data: *Space Group*: *R*3*m*. *a* = 16.0277(2) *c* = 7.3085(1) Z = 3

X-ray Powder Pattern: Pereval marble quarry, Sludyanka, Lake Baikal, Russia.
2.601 (100), 4.019 (55), 3.010(51), 6.496 (47), 2.006 (46), 3.548 (44), 4.279 (42)

Chemistry:	(1)		(1)
SiO_2	34.06	CaO	0.37
B_2O_3	[9.93]	Na_2O	2.57
Al_2O_3	14.94	K_2O	0.08
Cr_2O_3	25.09	F	0.45
V_2O_3	1.56	H_2O	[2.59]
Fe_2O_3	[0.10]	$-O = F_2$	0.19
MgO	8.65	Total	100.20

(1) Pereval marble quarry, Sludyanka, Lake Baikal, Russia; average of 10 electron microprobe analyses supplemented by FTIR spectrometry, B_2O_3, H_2O and Fe_2O_3:FeO calculated; corresponds to $^{X}(Na_{0.87}Ca_{0.07}\square_{0.04}K_{0.02})_{\Sigma=1.00}{}^{Y}(Cr^{3+}_{2.29}Mg_{0.71})_{\Sigma=3.00}{}^{Z}(Al_{3.04}Mg_{1.54}Cr^{3+}_{1.18}V^{3+}_{0.22}Fe^{3+}_{0.01})_{\Sigma=6.00}$ $^{T}[(Si_{5.96}Al_{0.04})O_{18}]^{B}(BO_3)_3{}^{V}(OH)_3{}^{W}[O_{0.73}F_{0.25}(OH)_{0.02}]_{\Sigma=1.00}$.

Polymorphism & Series: Solid-solution exists between the species chromo-alumino-povondraite, oxy-chromium-dravite and oxy-dravite.

Mineral Group: Tourmaline supergroup, alkali group, oxy-subgroup.

Occurrence: A primary mineral in metaquartzite (granulite facies) in marble.

Association: Dravite, oxy-chromium-dravite, oxy-dravite, quartz, calcite, chromphyllite, eskolaite, chromite, uvarovite, chromian phlogopite, pyroxenes of the diopside-kosmochlor series, Cr-bearing tremolite, Cr-bearing titanite, Cr-bearing rutile, pyrite.

Distribution: From the Pereval marble quarry, Sludyanka, Lake Baikal, Russia.

Name: For its relation to povondraite with dominant chromium in the Y site and aluminum in the Z site.

Type Material: Museum of Mineralogy, Earth Sciences Department, Sapienza University, Rome, Italy (33069/1).

References: (1) Reznitskii, L., C.M. Clark, F.C. Hawthorne, J.D. Grice, H. Skogby, U. Hålenius, and F. Bosi (2014) Chromo-alumino-povondraite, $NaCr_3(Al_4Mg_2)(Si_6O_{18})(BO_3)_3(OH)_3O$, a new mineral species of the tourmaline supergroup. Amer. Mineral., 99, 1767-1773.