

**Crystal Data:** Hexagonal. *Point Group:* 3*m*. Prismatic crystals display {10 $\bar{1}$  0}, {11 $\bar{2}$  0}, {10 $\bar{1}$  1} and {0001}, to 0.3 mm.

**Physical Properties:** *Parting:* Distinct on {0001}. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 7.5 VHN = 14540 (50 g load). D(meas.) = 3.32(2) D(calc.) = 3.299; 3.315

**Optical Properties:** Transparent. *Color:* Emerald-green. *Streak:* Green. *Luster:* Vitreous. *Optical Class:* Uniaxial (-).  $\omega = 1.765(5)$   $\epsilon = 1.715(5)$  *Pleochroism:* Strong, *O* = dark green; *E* = yellow-green.

**Cell Data:** *Space Group:* R3*m*.  $a = 16.1121(3)$   $c = 7.3701(1)$   $Z = 3$

**X-ray Powder Pattern:** Calculated pattern. 2.61 (100), 6.52 (68), 4.02 (63), 3.02 (57), 3.56 (49), 2.07 (47), 4.29 (40)

Chemistry:	(1)		(1)
SiO <sub>2</sub>	31.73	MgO	7.49
TiO <sub>2</sub>	0.32	Na <sub>2</sub> O	2.78
B <sub>2</sub> O <sub>3</sub>	[9.35]	K <sub>2</sub> O	0.08
Al <sub>2</sub> O <sub>3</sub>	3.61	F	0.78
Cr <sub>2</sub> O <sub>3</sub>	36.25	- O = F	0.33
V <sub>2</sub> O <sub>3</sub>	5.81	<u>H<sub>2</sub>O</u>	<u>[2.16]</u>
		Total	100.03

(1) Sludyanka, Lake Baikal, Russia; average of 15 electron microprobe analyses, B<sub>2</sub>O<sub>3</sub> and H<sub>2</sub>O calculated from stoichiometry; corresponds to  $^X(\text{Na}_{1.00}\text{K}_{0.02})^Y(\text{Cr}^{3+}_{1.95}\text{V}^{3+}_{0.87}\text{Mg}_{0.14}\text{Ti}_{0.04})^Z(\text{Cr}^{3+}_{3.37}\text{Mg}_{1.93}\text{Al}_{0.69})^T[(\text{Si}_{5.90}\text{Al}_{0.10})\text{O}_{18}]^B(\text{BO}_3)_3^V(\text{OH})_{2.67}\text{O}_{0.33}^W[\text{O}_{0.54}\text{F}_{0.46}]$ .

**Polymorphism & Series:** Solid-solution exists with chromium-dravite, oxy-dravite, and chromo-alumino-povondraite.

**Mineral Group:** Tourmaline supergroup, alkali group, oxy-subgroup 3.

**Occurrence:** In Cr-V-bearing calcite-quartz-diopside metamorphic rocks (granulite facies).

**Association:** Quartz, calcite, chromphyllite, eskolaite, chromite, uvarovite, chromian phlogopite, diopside-kosmochlor, chromian tremolite, chromian titanite, chromian rutile, pyrite (quartzite); Cr-V-bearing diopside, quartz, calcite, magnesiochromite, eskolaite-karelianite (quartz-diopside rock).

**Distribution:** From the Pereval marble quarry, near Sludyanka, Irkutsk region, Southern Lake Baikal, Russia.

**Name:** As an oxy-dravite with dominant chromium in the Y and Z sites and magnesium the dominant divalent cation in Z.

**Type Material:** Museum of Mineralogy, Earth Sciences Department, Sapienza University of Rome, Italy (33064).

**References:** (1) Bosi, F., L.Z. Reznitskii, and E.V. Sklyarov (2012) Oxy-chromium-dravite, NaCr<sub>3</sub>(Cr<sub>4</sub>Mg<sub>2</sub>)(Si<sub>6</sub>O<sub>18</sub>)(BO<sub>3</sub>)<sub>3</sub>(OH)<sub>3</sub>O, a new mineral species of the tourmaline supergroup. *Amer. Mineral.*, 97, 2024-2030.