

**Chromceladonite****KMgCr(Si<sub>4</sub>O<sub>10</sub>)(OH)<sub>2</sub>**

**Crystal Data:** Monoclinic. *Point Group:* 2. As rock-forming aggregates of laminae, to 1 cm, and as spherulites and veinlets.

**Physical Properties:** *Cleavage:* Perfect on {001}. *Fracture:* Platy. *Tenacity:* Flexible. Hardness = 1-2 D(meas.) = 2.90 D(calc.) = 2.95

**Optical Properties:** Transparent. *Color:* Emerald to dark green. *Streak:* Pale green. *Luster:* Vitreous to silky.

*Optical Class:* Biaxial (-).  $\alpha = 1.605(1)$   $\beta = 1.648(1)$   $\gamma = 1.654(1)$   $2V(\text{meas.}) = 12(10)^\circ$   
*Orientation:*  $X \wedge c = <5^\circ$  *Pleochroism:*  $X = \text{pale green to colorless}$ ,  $Y = Z = \text{green}$ .

**Cell Data:** *Space Group:* C2 (1M polytype).  $a = 5.267(1)$   $b = 9.101(2)$   $c = 10.162(3)$   
 $\beta = 100.67(2)^\circ$   $Z = 2$

**X-ray Powder Pattern:** Padma uranium-vanadium deposit, southern Karelia, Russia. 2.588 (100), 4.54 (93), 2.409 (87), 3.638 (64), 1.518 (58), 1.518 (56), 3.097 (51)

<b>Chemistry:</b>	(1)
K <sub>2</sub> O	10.42
Na <sub>2</sub> O	0.14
Li <sub>2</sub> O	0.13
MgO	7.82
MnO	0.19
ZnO	0.22
FeO	0.73
Fe <sub>2</sub> O <sub>3</sub>	0.58
V <sub>2</sub> O <sub>3</sub>	1.79
Cr <sub>2</sub> O <sub>3</sub>	17.01
Al <sub>2</sub> O <sub>3</sub>	3.25
TiO <sub>2</sub>	0.16
SiO <sub>2</sub>	53.20
H <sub>2</sub> O <sup>+</sup>	3.38
- O = F	0.24
Total	99.35

(1) Padma uranium-vanadium deposit, southern Karelia, Russia; average electron microprobe analysis; corresponds to  $(\text{K}_{0.94}\text{Na}_{0.02})_{\Sigma=0.96}(\text{Cr}_{0.95}\text{V}_{0.10}\text{Al}_{0.05}\text{Fe}^{3+}_{0.03}\text{Ti}_{0.01})_{\Sigma=1.14}(\text{Mg}_{0.83}\text{Fe}^{2+}_{0.04}\text{Li}_{0.04}\text{Zn}_{0.01}\text{Mn}_{0.01})_{\Sigma=0.93}[(\text{Si}_{3.78}\text{Al}_{0.22})_{\Sigma=4.00}\text{O}_{10}][(\text{OH})_{1.60}\text{F}_{0.13}\text{O}_{0.13}]_{\Sigma=1.86}$ .

**Mineral Group:** Mica group.

**Occurrence:** A metasomatic-hydrothermal mineral.

**Association:** Dolomite, quartz, roscoelite, chromphyllite, calcite, hematite, uraninite, zincochromite, vanadium oxides.

**Distribution:** From the Padma uranium-vanadium deposit, southern Karelia, Russia.

**Name:** The prefix, *chrom*, indicates the chromium analog of *celadonite*.

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

**References:** (1) Pekov, I.V., N.V. Chukanov, E.V. Rumianstseva, Yu.K. Kabalov, Yu. Schneider, N.V. Ledeneva (2000) Chromceladonite  $\text{KCrMg}[\text{Si}_4\text{O}_{10}](\text{OH})_2$  - a new mineral of the mica group. *Zapiski Vseross. Mineral. Obshch.*, 129(1), 38-44 (in Russian, English abs.). (2) (2001) *Amer. Mineral.*, 86, 376 (abs. ref. 1).