Labuntsovite-Mg $Na_4K_4Mg_2Ti_8O_4(Si_4O_{12})_4(OH)_4 \cdot 10\text{-}12H_2O$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As prismatic crystals to 3 mm, elongate along [010], and in radial aggregates.

Physical Properties: *Cleavage*: Imperfect on {001} and another plane. *Tenacity*: n.d. *Fracture*: Stepped. Hardness = 5 D(meas.) = 2.88(2) D(calc.) = 2.89 Nonfluorescent.

Optical Properties: Translucent to transparent. *Color*: Colorless to white, rarely yellowish, pink, or light orange. *Streak*: n.d. *Luster*: Vitreous.
Optical Class: Biaxial (+). $\alpha = 1.688(2)$ $\beta = 1.698(2)$ $\gamma = 1.802(3)$ 2V(meas.) = 37(1)°
Orientiation: $a = Z$, $b = Y$, $c \wedge X = 27°$ in obtuse β. *Pleochroism*: $X = Z$ = pale yellow, Y = orange. Colorless varieties nonpleochroic.

Cell Data: *Space Group*: *C*2/*m*. $a = 14.292(4)$ $b = 13.750(4)$ $c = 7.792(2)$ $\beta = 117.03(1)°$ Z = 1

X-ray Powder Pattern: Kovdor massif, Kola Peninsula, Russia.
3.175 (100), 3.093 (57), 3.083 (55), 6.94 (51), 3.024 (51), 2.576 (48), 6.34 (34)

Chemistry:

	(1)		(1)
Na_2O	4.61	MnO	0.01
K_2O	8.57	Al_2O_3	0.30
SrO	0.01	SiO_2	39.70
CaO	0.03	TiO_2	23.96
BaO	6.23	Nb_2O_5	3.65
FeO	1.49	H_2O	[9.24]
MgO	1.22	Total	99.02

(1) Kovdor massif, Kola Peninsula, Russia; average electron microprobe analysis, H_2O calculated; corresponds to $(Na_{3.57}\square_{0.42}Ca_{0.01})_{\Sigma=4}K_4[(H_2O)_{2.18}Ba_{0.97}\square_{0.48}K_{0.37})_{\Sigma=4}(\square_{0.91}Mg_{0.73}Fe^{2+}_{0.36})_{\Sigma=2}(Ti_{7.20}Nb_{0.66}Fe^{3+}_{0.14})_{\Sigma=8.00}(Si_{15.86}Al_{0.14})_{\Sigma=16.00}O_{48}[O_{4.46}(OH)_{3.54}]_{\Sigma=8.00} \cdot 8.35H_2O$.

Mineral Group: Labuntsovite subgroup of the labuntsovite group.

Occurrence: In cavities within dolomitic carbonatite in an alkaline massif.

Association: Catapleiite, anatase, pyrite, calcite.

Distribution: From the Kovdor ultramafic alkaline massif, Kola Peninsula, Russia.

Name: Suffix, *Mg*, refers to the magnesium-dominance in the D site of a member of the *labuntsovite* subgroup.

Type Material: A.E. Fersman Mineralogical Museum, Moscow, Russia (91287).

References: (1) Khomyakov, A.P., G.N. Nechelyustov, G. Ferraris, A. Gula, and G. Ivaldi (2001) Labuntsovite-Fe and labuntsovite-Mg- two new minerals from the Khibina and Kovdor alkaline massifs, Kola Peninsula. Zap. Ross. Mineral. Obshch., 130(4), 36-45. (2) (2002) Amer. Mineral., 87, 1732-1733 (abs. ref. 1). (3) Chukanov, N.V., I.V. Pekov, and A.P. Khomyakov (2002) Recommended nomenclature for labuntsovite-group minerals. Eur. J. Mineral., 14, 165-173.
(4) Pekov, I.V. (2007) New minerals from former Soviet Union countries, 1998-2006. Mineral. Almanac, 11, 30-31.