

**Komarovite****Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. Platy, foliated, massive.**Physical Properties:** *Cleavage:* Perfect on {010}, fair on {001}. Hardness = 1.5-2 D(meas.) = 3.0 D(calc.) = 2.96-3.41 (Na dominant)**Optical Properties:** Transparent to translucent. *Color:* Pale rose to light yellow. *Streak:* White. *Luster:* Dull.*Optical Class:* Biaxial (+ or -).  $\alpha = 1.750-1.809$   $\beta = 1.766-1.876$   $\gamma = 1.85-1.912$   
2V(meas.) = 48°-72° *Orientation:* X = a; Y = c; Z = b. *Dispersion:* r >> v.**Cell Data:** *Space Group:* Cmmm. a = 7.310(1) b = 24.588(3) c = 7.402(1) Z = 2**X-ray Powder Pattern:** Mt. Karnasurt, Russia.

3.16 (100), 12.2 (70), 1.783 (45), 3.118 (42), 6.35 (35), 2.740 (35), 2.715 (35)

<b>Chemistry:</b>	(1)	(2)
SiO <sub>2</sub>	23.50	17.50
TiO <sub>2</sub>	2.50	3.34
Al <sub>2</sub> O <sub>3</sub>	1.00	
Fe <sub>2</sub> O <sub>3</sub>	1.50	
Nb <sub>2</sub> O <sub>5</sub>	47.00	53.98
MnO	5.00	
CaO	4.70	3.36
Na <sub>2</sub> O	0.85	12.26
K <sub>2</sub> O	0.30	0.15
F	1.21	3.03
H <sub>2</sub> O	12.00	[5.25]
- O = F <sub>2</sub>	0.51	1.28
Total	99.05	98.43

(1) Mt. Karnasurt, Russia. (2) Ilímaussaq alkaline complex, South Greenland; electron microprobe analysis, H<sub>2</sub>O calculated, total includes La<sub>2</sub>O<sub>3</sub> = 0.57, Ce<sub>2</sub>O<sub>3</sub> = 1.11 and FeO = 0.16; corresponds to (Na<sub>5.43</sub>K<sub>0.04</sub>) $\Sigma=5.47$ Ca<sub>0.82</sub>(Ce<sub>0.09</sub>La<sub>0.05</sub>Fe<sub>0.03</sub>) $\Sigma=0.17$ Ti<sub>0.57</sub>Nb<sub>5.58</sub>[Si<sub>4</sub>O<sub>12</sub>]O<sub>13.89</sub>F<sub>2.19</sub>·4H<sub>2</sub>O.**Occurrence:** With late albite and redeposited fine-grained natrolite in alkalic rocks in a differentiated alkalic massif.**Association:** Natrolite, albite.**Distribution:** On Mt. Karnasurt, Lovozero massif, Kola Peninsula, Russia. From the Ilímaussaq alkaline complex, South Greenland.**Name:** Honors the Russian cosmonaut, Vladimir Mikhailovich *Komarov* (1927-1967).**Type Material:** A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 73302.**References:** (1) Portnov, A.M., G.K. Krivokoneva, and T.I. Stolyarova (1971) Komarovite, a new niobosilicate of calcium and manganese. Zap. Vses. Mineral. Obshch., 100, 599-602 (in Russian). (2) (1972) Amer. Mineral., 57, 1315-1316 (abs. ref. 1). (3) Balić Zunić, T., O.V. Petersen, H.-J. Bernhardt, and H.I. Micheelsen (2002) The crystal structure and mineralogical description of a Na-dominant komarovite from the Ilímaussaq alkaline complex, South Greenland. Neues Jahrb. Mineral. Mon., 497-514. (4) (2003) Amer. Mineral., 88, 935 (abs. ref. 3).