

Telyushenkoite



TRIGONAL

Locality: Dara-i-Pioz alkaline massif, Tajikistan.

Occurrence: In reedmergnerite boulders on the moraine of the Dara-i-Pioz glacier. In a rock consisting of coarse-grained reedmergnerite (85–90%), microcline (~10%) and the remaining 5% of the rock consists of pectolite, hyalotekite, kentbrooksitite, polyolithionite and albite. Minerals closely associated with telyushenkoite are: hyalotekite, shibkovite, nordite-(Ce) and leucophanite.

General appearance: Equant anhedral grains up to 2 cm across.

Physical, chemical and crystallographic properties: *Luster:* vitreous. *Diaphaneity:* transparent. *Color:* white to colorless. *Streak:* white. *Luminescence:* fluoresces very dim dark purple under short-wave UV. *Hardness:* VHN₁₀₀ 714 kg/mm², Mohs 6. *Tenacity:* brittle. *Cleavage:* {100} distinct. *Fracture:* uneven. *Density:* 2.73 g/cm³ (meas.), 2.73 g/cm³ (calc.). **Crystallography:** Trigonal, $P\bar{3}m1$, a 14.3770, c 4.8786 Å, V 873.2 Å³, $Z = 1$, $c:a = 0.3393$. *Morphology:* no forms were observed. *Twinning:* none observed. **X-ray powder-diffraction data:** 6.226(35)(020), 4.149(50)(030), 3.456(40)(130), 3.382(75)(121), 3.162(100)(031), 3.113(36)(040), 2.465(30)(231). **Optical data:** Uniaxial (+), T 1.526, g 1.531, nonpleochroic. **Chemical analytical data:** Mean of seven sets of electron-microprobe data: Na₂O 13.53, K₂O 0.47, Cs₂O 6.76, Rb₂O 0.15, BeO 3.53, ZnO 1.71, Al₂O₃ 7.26, SiO₂ 64.32, F 2.84, sum 100.57, less O = F 1.20, Total 99.37 wt.%. Empirical formula: (Cs_{0.69}Na_{0.30}K_{0.14}Rb_{0.02})_{Σ1.15} Na_{6.00}[Be_{2.04}(Si_{15.46}Al_{2.06}Zn_{0.30})_{Σ17.82}O_{38.84}F_{2.16}]. **Relationship to other species:** It is the Cs-dominant analogue of leifite.

Name: After Tamara Matveyevna Telyushenko (1930–1997), a petrographer who made major contributions to knowledge of the geology of Central Asia and who headed the Young Geologists' School of Ashkhabad for over thirty years.

Comments: IMA No. 2001–012.

AGAKHANOV, A.A., PAUTOV, L.A., BELAKOVSKIY, D.I., SOKOLOVA, E.V. & HAWTHORNE, F.C. (2003): Telyushenkoite, CsNa₆[Be₂(Si,Al,Zn)₁₈O₃₉F₂] – a new cesium mineral of the leifite group. *New Data on Minerals* 38, 5-8.

SOKOLOVA, E., HUMINICKI, D.M.C., HAWTHORNE, F.C., AGAKHANOV, A.A., PAUTOV, L.A. & GREW, E.S. (2002): The crystal chemistry of telyushenkoite and leifite, ANa₆[Be₂Al₃Si₁₅O₃₉F₂], A = Cs, Na. *Canadian Mineralogist* 40, 183-192.