

Crystal Data: Monoclinic. *Point Group:* 2. As lamellar crystals to 2 mm or aggregates to 2 cm.

Physical Properties: *Cleavage:* Perfect on {001}. *Fracture:* n.d. *Tenacity:* Flexible.
Hardness = 2-3 VHN= 94 (87-106) (10 g load). D(meas.) = 2.91(2) D(calc.) = 2.914
Resembles polyolithionite. Fluoresces yellow under SW UV.

Optical Properties: Transparent to translucent [by analogy to mica group]. *Color:* Colorless; white in aggregates. *Streak:* White. *Luster:* Vitreous to pearly.
Optical Class: Biaxial (-). $\alpha = 1.600(2)$ $\beta = 1.620(2)$ $\gamma = 1.625(2)$ $2V(\text{meas.}) = 52(2)^\circ$
 $2V(\text{calc.}) = 52.6^\circ$ *Dispersion:* $r < v$, weak.

Cell Data: *Space Group:* C2. $a = 5.199(3)$ $b = 9.068(7)$ $c = 10.070(4)$ $\beta = 99.35(2)^\circ$ $Z = 2$

X-ray Powder Pattern: Darai-Pioz massif, Tajikistan.
3.33 (100), 4.48 (67), 9.96 (40), 3.87 (40), 2.860 (35), 2.400 (31), 2.570 (30)

Chemistry:	(1)
SiO ₂	58.31
TiO ₂	18.05
Nb ₂ O ₅	0.50
Al ₂ O ₃	0.22
FeO	0.40
MnO	0.03
K ₂ O	11.13
Cs ₂ O	0.24
Li ₂ O	7.25
Rb ₂ O	0.69
H ₂ O	0.21
F	4.35
<u>- O = F₂</u>	<u>1.83</u>
Total	99.55

(1) Darai-Pioz massif, Tajikistan; average of 10 electron microprobe analyses, supplemented by FTIR spectroscopy, Li and Rb by ICP OES, H₂O by SIMS; corresponds to
(K_{0.97}Rb_{0.03}Cs_{0.01}) $_{\Sigma=1.01}$ Li_{2.00}(Ti_{0.93}Nb_{0.02}Fe_{0.02}Al_{0.02}) $_{\Sigma=0.99}$ Si₄O_{11.04}[F_{0.94}(OH)_{0.10}] $_{\Sigma=1.04}$.

Mineral Group: Mica group.

Occurrence: In a glacial moraine boulder of 80% coarse-grained quartz.

Association: Pectolite, quartz, baratovite, faizievite, zeravshanite, pyrochlore, fluorite, polyolithionite, aegirine, leucosphenite.

Distribution: From the Darai-Pioz alkaline massif, at the junction of the Turkestan, Zeravshan, and Alay Mountain Ranges, Tajikistan.

Name: Honors Russian mineralogist Yuriy Leonidovich Orlov (1926-1980), former director of the A.E. Fersman Mineralogical museum (1976-1980), specialist in the mineralogy of diamonds.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (3824/1).

References: (1) Agakhanov, A.A., L.A. Pautov, V.Yu. Karpenko, G.K. Bekenova, and Yu.A. Uvarova. (2011) Orlovite, KLi₂TiSi₄O₁₀(OF), a new mineral of the mica group. *New data on minerals*, 46, 13-19. (2) (2012) *Amer. Mineral.*, 97, 2069-2070 (abs. ref. 1).