

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As tabular crystals to 0.1 mm.

**Physical Properties:** *Cleavage:* One unspecified direction. *Fracture:* n.d. *Tenacity:* n.d.  
Hardness = 6 VHN = 838 (50 g load). D(meas.) = 3.09(5) D(calc.) = 3.170

**Optical Properties:** Transparent. *Color:* Colorless. *Streak:* n.d. *Luster:* Vitreous.  
*Optical Class:* Biaxial (-).  $\alpha = 1.585(2)$   $\beta = 1.598(2)$   $\gamma = 1.603(2)$   $2V(\text{calc.}) = -63^\circ$   
*Dispersion:* Medium,  $v > r$ .

**Cell Data:** Space Group: C2/c.  $a = 26.3511(8)$   $b = 7.5464(3)$   $c = 22.9769(8)$   
 $\beta = 107.237(1)^\circ$   $Z = 4$

**X-ray Powder Pattern:** Darai-Pioz glacial moraine, Tajikistan.  
3.35 (100), 3.14 (90), 2.62 (70), 6.32 (50), 3.65 (50), 2.82 (50), 3.25 (40)

Chemistry:	(1)
SiO <sub>2</sub>	52.20
TiO <sub>2</sub>	0.43
ZrO <sub>2</sub>	16.41
SnO <sub>2</sub>	0.46
Fe <sub>2</sub> O <sub>3</sub>	0.21
Na <sub>2</sub> O	3.06
K <sub>2</sub> O	0.09
Cs <sub>2</sub> O	26.58
H <sub>2</sub> O	[1.74]
Total	101.18

(1) Darai-Pioz glacial moraine, Tajikistan; average of 6 electron microprobe analyses supplemented by IR spectroscopy, H<sub>2</sub>O calculated from structure analysis; corresponds to  $(\text{Cs}_{3.80}\text{Na}_{0.18}\text{K}_{0.02})_{\Sigma=4.00}\text{Na}_{2.00}(\text{Zr}_{2.73}\text{Ti}_{0.19}\text{Fe}^{3+}_{0.04}\text{Sn}_{0.04})_{\Sigma=3.00}(\text{Si}_{18}\text{O}_{45})(\text{H}_2\text{O})_2$ .

**Occurrence:** A pegmatite mineral in a quartz rock fragment in glacial sediment derived from an alkaline massif.

**Association:** Intergrowth with pectolite; quartz, aegirine, pectolite, polyolithionite, reedmergnerite, pectolite, fluorite, stillwellite-(Ce), leucosphenite, neptunite, calcite, pyrochlore, baratovite.

**Distribution:** From the moraine of the Darai-Pioz glacier at the junction of the Zeravshan, Turkestan and Alay Ranges, Tajikistan.

**Name:** For the locality, *Zeravshan* Range, that produced the first specimens.

**Type Material:** A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia.

**References:** (1) Pautov, L.A. A.A. Agakhanov, Y.A. Uvarova, E.V. Sokolova, and F.C. Hawthorne (2004) Zeravshanite,  $\text{Cs}_4\text{Na}_2\text{Zr}_3(\text{Si}_{18}\text{O}_{45})(\text{H}_2\text{O})_2$ , new cesium mineral from Dara-i-Pioz massif (Tajikistan). *New Data on Minerals* (Moscow), 39, 21-25. (2) Uvarova, Y.A., E. Sokolova, F.C. Hawthorne, L.A. Pautov, and A.A. Agakhanov (2004) A novel  $[\text{Si}_{18}\text{O}_{45}]^{18-}$  sheet in the crystal structure of zeravshanite,  $\text{Cs}_4\text{Na}_2\text{Zr}_3[\text{Si}_{18}\text{O}_{45}](\text{H}_2\text{O})_2$ . *Can. Mineral.*, 42, 125-134. (3) (2006) *Amer. Mineral.*, 91, 220 (abs. refs. 1 & 2).