

Crystal Data: Monoclinic. *Point Group:* 2/m. As irregular elongated grains to 100 μm.

Physical Properties: *Cleavage:* Perfect on {001}. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = 5 VHN = 606 (50 g load). D(meas.) = 2.80(2) D(calc.) = 2.830

Optical Properties: Translucent. *Color:* Colorless; colorless in transmitted light. *Streak:* White. *Luster:* Vitreous.

Optical Class: Biaxial (-). $\alpha(\text{calc.}) = 1.502$ $\beta = 1.564(2)$ $\gamma = 1.576(2)$ $2V(\text{meas.}) = 46(2)^\circ$
Dispersion: Weak, $r > v$.

Cell Data: *Space Group:* C2/c. $a = 16.652(5)$ $b = 9.598(3)$ $c = 22.120(7)$ $\beta = 92.875(14)^\circ$ $Z = 4$

X-ray Powder Pattern: Calculated pattern.

3.35 (100), 3.04 (60), 3.62 (45), 2.68 (40), 4.10 (36), 3.25 (35), 4.66 (33)

Chemistry:	(1)
SiO ₂	55.30
Y ₂ O ₃	0.44
Al ₂ O ₃	0.09
B ₂ O ₃	4.75
PbO	0.21
FeO	0.10
MnO	0.94
CaO	17.37
Cs ₂ O	8.36
K ₂ O	0.01
Na ₂ O	10.49
F	1.74
H ₂ O	[0.37]
- O = F ₂	0.74
Total	99.43

(1) Darai-Pioz alkaline massif, Tajikistan; average of 10 electron microprobe analyses, H₂O from structure analysis; corresponding to Cs_{0.90}Na_{5.12}Ca_{4.68}Mn_{0.20}Y_{0.06}Fe_{0.02}Pb_{0.01}[Si_{13.92}Al_{0.03}B_{2.06}O₃₈]F_{1.39}(OH)_{0.62}.

Occurrence: In glacial cobbles in moraine derived from an alkaline massif.

Association: Sr-rich fluorite, pekovite, mendeleevite-(Ce), orlovite, kirchhoffite, neptunite, zeravshanite, senkevichite, nordite-(Ce), alamosite, hyalotekite, khvorovite.

Distribution: From the Darai-Pioz alkaline massif, Tajikistan.

Name: From the Greek Οδηγήτρια, meaning “*she who shows the way*,” to emphasize the role of Cs as a major indicator of extreme fractionation.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4706/1).

References: (1) Agakhanov, A.A., L.A. Pautov, E. Sokolova, F.C. Hawthorne, V.Yu. Karpenko, O.I. Siidra, and V.A. Muftakhov (2017) Odigitriaite, CsNa₅Ca₅[Si₁₄B₂O₃₈]F₂, a new cesium borosilicate mineral from the Darai-Pioz alkaline massif, Tajikistan: Description and crystal structure. *Mineral. Mag.*, 81(1), 113-122. (2) (2017) *Amer. Mineral.*, 102, 1568-1569 (abs. ref. 1).