

**Crystal Data:** Hexagonal. *Point Group:* 6/m 2/m 2/m. As masses, to 5 cm.

**Physical Properties:** Hardness = 5 D(meas.) = 2.92(3) D(calc.) = 2.80

**Optical Properties:** Semitransparent. *Color:* Colorless, white, rarely brownish or pale to deep blue. *Optical Class:* Uniaxial (-).  $\omega = 1.580(2)$   $\varepsilon = 1.575(2)$  *Pleochroism:* O = violet; E = blue.

**Cell Data:** *Space Group:* P6/mcc.  $a = 10.262(2)$   $c = 14.307(1)$   $Z = 2$

**X-ray Powder Pattern:** Dara-i-Pioz massif, Tajikistan.

3.26 (100), 2.93 (65), 7.09 (60), 2.56 (55), 4.13 (50), 2.76 (45), 4.43 (40)

<b>Chemistry:</b>	(1)	(2)
SiO <sub>2</sub>	63.65	63.19
ZrO <sub>2</sub>	5.00	3.28
Y <sub>2</sub> O <sub>3</sub>	0.96	2.26
Fe <sub>2</sub> O <sub>3</sub>	1.85	
FeO		1.96
Nb <sub>2</sub> O <sub>5</sub>	0.90	
MgO		0.12
MnO	8.25	9.58
ZnO	7.85	8.22
CaO	0.57	
Li <sub>2</sub> O	1.74	2.01
Na <sub>2</sub> O	2.96	3.32
K <sub>2</sub> O	5.14	5.63
<u>LOI</u>	<u>0.58</u>	<u>.</u>
Total	99.45	99.57

(1) Dara-i-Pioz massif, Tajikistan. (2) Do.; electron microprobe analysis, Li<sub>2</sub>O by flame photometry; corresponds to (Mn<sub>1.54</sub>Zr<sub>0.30</sub>Y<sub>0.23</sub>Mg<sub>0.03</sub>) $\Sigma=2.10$ (Na<sub>1.22</sub>K<sub>0.36</sub>□<sub>0.42</sub>) $\Sigma=2.00$ K<sub>1.00</sub>(Li<sub>1.53</sub>Zn<sub>1.15</sub>Fe<sup>2+</sup><sub>0.31</sub>) $\Sigma=2.99$ (Si<sub>11.98</sub>O<sub>30.00</sub>).

**Mineral Group:** Milarite group.

**Occurrence:** In glacial moraine derived from an alkalic massif.

**Association:** Aegirine, quartz, sogdianite, eudialyte, manganoan pectolite, polyolithionite.

**Distribution:** In the Dara-i-Pioz massif, Alai Range, Tien Shan, Tajikistan.

**Name:** For the occurrence in the Dara-i-Pioz massif, Tajikistan.

**Type Material:** Mineralogical Museum, St. Petersburg University, St. Petersburg; Institute of Mineralogy and Geochemistry of Rare Elements, Moscow; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 76078.

**References:** (1) Semenov, E.I., V.D. Dusmatov, A.P. Khomyakov, A.A. Voronkov, and M.E. Kazakova (1975) Darapiosite, a new mineral of the milarite group. Zap. Vses. Mineral. Obshch., 104, 583-585 (in Russian). (2) (1976) Amer. Mineral., 61, 1053-1054 (abs. ref. 1). (3) Ferraris G., M. Prencipe, L.A. Puatov, and E.V. Sokolova (1999) The crystal structure of darapiosite and a comparison with Li- and Zn-bearing minerals of the milarite group. Can. Mineral., 37, 769-774. (4) Hawthorne, F.C. (2002) The use of end-member charge-arrangements in defining new mineral species and heterovalent substitutions in complex minerals. Can. Mineral., 40, 699-710.