

**Kenoplumbomicrolite**

**Crystal Data:** Cubic. *Point Group:*  $4/m\bar{3}2/m$ . As octahedral or cuboctahedral crystals to 20 cm.

**Physical Properties:** *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = ~6 VHN = 610 (40 g load).  $D(\text{meas.}) = 7.310\text{--}7.832$  (with uraninite inclusions)  $D(\text{calc.}) = 7.122$

**Optical Properties:** Translucent. *Color:* Yellowish brown. *Streak:* White. *Luster:* Greasy. *Optical Class:* Isotropic.

R: (470) 18.62 (6.61)<sub>oil</sub>, (546) 17.62 (5.88)<sub>oil</sub>, (589) 17.26 (5.62)<sub>oil</sub>, (650) 16.90 (16.90)<sub>oil</sub>

**Cell Data:** *Space Group:*  $Fd\bar{3}m$ .  $a = 10.571(1)$   $Z = 8$

**X-Ray Diffraction Pattern:** Mt. Ploskaya, Kola Peninsula, Murmanskaja Oblast, Russia. 3.050 (100), 2.641 (42), 1.869 (26), 1.595 (23), 2.425 (9), 1.527 (9), 2.033 (6)

Chemistry:	(1)	(2)
Na <sub>2</sub> O	0.37	–
CaO	2.51	–
PbO	45.39	46.05
UO <sub>2</sub>	1.24	–
Ta <sub>2</sub> O <sub>5</sub>	28.58	29.95
Nb <sub>2</sub> O <sub>5</sub>	12.90	14.85
TiO <sub>2</sub>	0.84	0.49
SiO <sub>2</sub>	2.19	–
SnO <sub>2</sub>	3.47	4.27
Fe <sub>2</sub> O <sub>3</sub>	1.28	1.34
Al <sub>2</sub> O <sub>3</sub>	0.07	–
WO <sub>3</sub>	–	2.88
MnO	–	0.10
H <sub>2</sub> O	[0.35]	–
Total	99.19	99.93

(1) Mt. Ploskaya, Kola Peninsula, Murmanskaja Oblast, Russia; average electron microprobe analysis, H<sub>2</sub>O calculated from structure; corresponds to  $A(\text{Pb}_{1.30}\square_{0.30}\text{Ca}_{0.29}\text{Na}_{0.08}\text{U}_{0.03})_{\Sigma=2.00} B(\text{Ta}_{0.82}\text{Nb}_{0.62}\text{Si}_{0.23}\text{Sn}^{4+}_{0.15}\text{Ti}_{0.07}\text{Fe}^{3+}_{0.10}\text{Al}_{0.01})_{\Sigma=2.00} X\text{O}_6^Y[\square_{0.52}(\text{OH})_{0.25}\text{O}_{0.23}]_{\Sigma=1.00}$ . (2) Do.; average electron microprobe analysis, OH<sup>–</sup> calculated from structure; corresponds to  $A(\text{Pb}_{1.33}\square_{0.66}\text{Mn}_{0.01})_{\Sigma=2.00} B(\text{Ta}_{0.87}\text{Nb}_{0.72}\text{Sn}^{4+}_{0.18}\text{Fe}^{3+}_{0.11}\text{W}_{0.08}\text{Ti}_{0.04})_{\Sigma=2.00} X\text{O}_6^Y[\square_{0.80}(\text{OH})_{0.10}\text{O}_{0.10}]_{\Sigma=1.00}$ .

**Mineral Group:** Pyrochlore supergroup, microlite group.

**Occurrence:** In an ‘amazonite’ pegmatite vein in an alkaline granite pluton.

**Association:** Quartz, biotite, microcline, zinnwaldite, anglesite, bastnäsite-(Ce), bismite, bismuth, bismuthinite, bismuthite, cassiterite, caysichite-(Y), churchite-(Y), columbite-(Mn), emplectite, fergusonite-(Y), fluorite, gadolinite-(Y), gahnite, galena, hingganite-(Y), hingganite-(Yb), kainosite-(Y), kamphaugite-(Y), kasolite, keiviite-(Y), keiviite-(Yb), kuliokite-(Y), lanarkite, leadhillite, löllingite, monazite-(Ce), pyromorphite, scotlandite, sillénite, sphalerite, tenerite-(Y), thalénite-(Y), thorite, uraninite, vyuntsphakite-(Y), wulfenite, xenotime-(Y), xenotime-(Yb), zavaritskite.

**Distribution:** From Mt. Ploskaya, Western Keivy Massif, Kola Peninsula, Murmanskaja Oblast, Northern Region, Russia.

**Name:** The first prefix, *keno*, indicates dominant vacancy at the Y site, the second prefix, *plumbo*, indicates the dominant lead in the A site of a member of the *microlite* subgroup.

**Type Material:** Geological Museum, University of de São Paulo, Brazil (DR980).

**References:** (1) Atencio, D., M.B. Andrade, L. Bindi, P. Bonazzi, M. Zoppi, C.J. Stanley, and R. Kristiansen (2018) Kenoplumbomicrolite,  $(\text{Pb}, \square)_2\text{Ta}_2\text{O}_6[\square, (\text{OH}), \text{O}]$ , a new mineral from Ploskaya, Kola Peninsula, Russia. *Mineral. Mag.*, 82, 1049–1055. (2) (2021) *Amer. Mineral.*, 106, 1187–1189 (abs. ref. 1).