

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. As tabular crystals, to 0.2 mm, flattened on (010) and displaying {010}, {001} and {101}.

**Physical Properties:** *Cleavage:* Perfect on {010} and {101}. *Fracture:* n.d. *Tenacity:* Brittle. Hardness = n.d. D(meas.) = 3.90(1) D(calc.) = 3.89

**Optical Properties:** Transparent. *Color:* Olive-green. *Streak:* Brownish green. *Luster:* Vitreous. *Optical Class:* Biaxial (-).  $\alpha = \text{n.d.}$   $\beta = \text{n.d.}$   $\gamma = \text{n.d.}$   $n(\text{calc.}) = 1.81$   $2V(\text{meas.}) = \text{n.d.}$   $2V(\text{calc.}) = \text{n.d.}$  *Pleochroism:*  $X = \text{n.d.}$ ,  $Y = \text{olive-green}$ ,  $Z = \text{red-brown}$ . *Orientation:*  $X = a$ ,  $Y = c$ ,  $Z = b$ .

**Cell Data:** *Space Group:* Pnmn.  $a = 9.132(2)$   $b = 19.415(4)$   $c = 13.213(3)$   $Z = 4$

**X-ray Powder Pattern:** Great Tolbachik Fissure Eruption, Kamchatka Region, Russia. 3.660 (100), 4.111 (90), 8.26 (70), 7.53 (60), 2.887 (50), 2.996 (40), 2.642 (40)

Chemistry:	(1)	(2)
K <sub>2</sub> O	1.76	3.28
PbO	21.18	23.30
CuO	33.24	33.21
ZnO	8.00	5.66
SeO <sub>2</sub>	15.74	15.44
Cl	26.06	24.67
-O=Cl <sub>2</sub>	5.88	5.56
Total	100.10	100.00

(1) Great Tolbachik Fissure Eruption, Kamchatka Region, Russia; average of 10 electron microprobe analyses supplemented by IR spectroscopy; corresponds to K<sub>0.53</sub>Pb<sub>1.33</sub>Cu<sub>5.87</sub>Zn<sub>1.38</sub>Se<sub>1.99</sub>O<sub>7.67</sub>Cl<sub>10.33</sub>. (2) KPb<sub>1.5</sub>Cu<sub>6</sub>Zn(SeO<sub>3</sub>)<sub>2</sub>O<sub>2</sub>Cl<sub>10</sub>.

**Occurrence:** Formed by sublimation around a degassing volcanic fumarole.

**Association:** Melanothallite, chloromenite, sophiite.

**Distribution:** From fumarole "Melanotallitovaya", second cinder cone of the northern breach of the Great Tolbachik Fissure Eruption, Kamchatka region, Russia.

**Name:** Honors Charles T. Prewitt (b. 1933) for his contributions to the crystal chemistry of minerals and planetary materials.

**Type Material:** Mining Museum, St. Petersburg Mining Institute, St. Petersburg, Russia (29/2002).

**References:** (1) Shuvalov, R.R., L.P. Vergasova, T.F. Semenova, S.K. Filatov, S.V. Krivovichev, O.I. Siidra, and N.S. Rudashevsky (2013) Prewittite, KPb<sub>1.5</sub>Cu<sub>6</sub>Zn(SeO<sub>3</sub>)<sub>2</sub>O<sub>2</sub>Cl<sub>10</sub>, a new mineral from Tolbachik fumaroles, Kamchatka peninsula, Russia: Description and crystal structure. *Amer. Mineral.*, 98, 463-469.