

**Crystal Data:** Hexagonal. *Point Group:* 3. As irregular grains, to 2 mm.

**Physical Properties:** Hardness = 3-3.5 VHN = 247 (20 g load). D(meas.) = 8.51-8.63, 8.57 average. D(calc.) = 8.680

**Optical Properties:** Translucent. *Color:* Reddish brown; grayish white in reflected light, with deep brownish red to raspberry-red internal reflections. *Streak:* Resinous to vitreous.

*Optical Class:* Biaxial.  $n = > 2.0$   $2V(\text{meas.}) = \text{n.d.}$  *Pleochroism:* Reddish brown to pale brown.

*Anisotropism:* Noted. *Bireflectance:* Weak.

R<sub>1</sub>-R<sub>2</sub>: (460) 20.5-19.9, (546) 18.9-18.1, (620) 17.8-17.1

**Cell Data:** *Space Group:* P3.  $a = 13.560(4)$   $c = 10.004(6)$   $Z = 3$

**X-ray Powder Pattern:** Kelyana mine, Russia.

3.30 (10), 3.78 (6), 2.72 (6), 2.53 (6), 3.24 (5), 2.364 (5), 1.954 (5)

<b>Chemistry:</b>	(1)
Hg	85.6
Sb	4.70
O	5.35
Cl	3.31
Br	0.91
Total	99.87

(1) Kelyana mine, Russia; by electron microprobe, average of 12 analyses; corresponding to Hg<sup>1+</sup><sub>12.00</sub>Sb<sub>1.09</sub>O<sub>9.36</sub>Br<sub>0.31</sub>Cl<sub>2.61</sub>.

**Occurrence:** In the oxidation zone of a stibnite-cinnabar ore deposit.

**Association:** Calomel, eglestonite, mercury, shakhovite, antimony oxides.

**Distribution:** In the Kelyana Sb-Hg mine, North Muya Range, Buryatia, Transbaikal region, Siberia, Russia.

**Name:** For the *Kelyana* mine, Russia, where it was first found.

**Type Material:** Central Siberian Geological Museum, Siberian Division, Academy of Sciences, Novosibirsk, VI-20/1; Mining Institute, St. Petersburg, 1203/1-2; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 80163.

**References:** (1) Vasil'ev, V.I., Y.G. Lavrent'ev, and N.A. Pal'chik (1982) Kelyanite, Hg<sub>36</sub>Sb<sub>3</sub>(Cl, Br)<sub>9</sub>O<sub>28</sub>, a new mineral. Zap. Vses. Mineral. Obshch., 111, 330-334 (in Russian). (2) (1983) Amer. Mineral., 68, 1248-1249 (abs. ref. 1). (3) (1983) Mineral. Abs., 34, 183 (abs. ref. 1). (4) Pervukhina, N.V., S.V. Borisov, S.A. Magarill, D.Yu. Naumov, and V.I. Vasil'ev (2008) The crystal structure of kelyanite, (Hg<sub>2</sub>)<sub>6</sub>(SbO<sub>6</sub>)BrCl<sub>2</sub>. Amer. Mineral., 93, 1666-1669.