Kelyanite $Hg_{36}Sb_3O_{28}(Cl,Br)_9$

Crystal Data: Monoclinic. *Point Group:* $2/m$, m, or 2. 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.) = 8.51

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(meas.) = n.d. *Pleochroism:* Reddish brown to pale brown. *Anisotropism:* Noted. *Bireflectance:* Weak.
R_1–R_2: (460) 20.5–19.9, (546) 18.9–18.1, (620) 17.8–17.1

Cell Data: *Space Group:* $C2/m$, $C2/c$, Cm, Cc, or $C2$. $a = 23.50(12)$ $b = 13.62(6)$ $c = 10.31(5)$ $\beta = 97.01(12)^\circ$ $Z = 2$

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)

Chemistry:

	(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 $Hg_{35.99}Sb_{3.28}O_{28.07}(Cl_{7.82}Br_{0.93})_{\Sigma=8.75}$, probably $Hg_{20}^{2+}Hg_{16}^{1+}Sb_3^{3+}O_{28}(Cl,Br)_9$.

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, $Hg_{36}Sb_3(Cl,Br)_9O_{28}$, 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).