Kuzminite $Hg^{1+}(Br, Cl)$

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2m$. As elongated grains, to 0.5 mm; in aggregates and powdery masses.

Physical Properties: *Cleavage:* {100}, good. *Fracture:* Uneven. Hardness = ≤ 2 VHN = 21–29, 25 average (25 g load). D(meas.) = n.d. D(calc.) = [7.36]

Optical Properties: Transparent. *Color:* Colorless, white, creamy white, pale yellow, pale brownish, bluish gray; gray to pale gray in reflected light, with colorless to pale yellow internal reflections. *Streak:* White to gray. *Luster:* Adamantine.
Optical Class: Uniaxial (+); high birefringence. *Pleochroism:* Weak; light yellow to very pale brown. $n = > 2.00$ *Anisotropism:* Yellowish gray, grayish brown, and bluish gray. *Bireflectance:* Strong.
R_1–R_2: n.d.

Cell Data: *Space Group:* $I4/mmm$. $a = 4.597(5)$ $c = 11.034(8)$ $Z = 4$

X-ray Powder Pattern: Kadyrel deposit, Russia.
3.25 (100), 4.26 (55), 2.103 (50), 2.76 (40), 1.989 (35), 2.296 (25b), 1.768 (20)

Chemistry:

	(1)
Hg	77.00
Cl	5.66
Br	16.60
Total	99.26

(1) Kadyrel deposit, Russia; by electron microprobe, average of four analyses; corresponds to $Hg_{1.02}(Br_{0.56}Cl_{0.42})_{\Sigma=0.98}$.

Polymorphism & Series: Forms a series with calomel.

Occurrence: In vugs in mercury sulfides, in calcite veins in a mercury ore deposit (Kadyrel deposit, Russia).

Association: Eglestonite, lavrentievite, kadyrelite, calomel, mercury, corderoite, cinnabar, iron oxides (Kadyrel deposit, Russia).

Distribution: From the Kadyrel mercury deposit, Pii-Khem district, Tuva, Siberia, Russia. At Landsberg, near Obermoschel, Rhineland-Palatinate, Germany.

Name: Honors Aleksei Mikhailovich Kuzmin (1891–1980), Russian mineralogist of the Tomsk Polytechnic Institute, Tomsk, Russia.

Type Material: Central Siberian Geological Museum, Siberian Division, Academy of Sciences, Novosibirsk, VI-28/1; Mining Institute, St. Petersburg, Russia, 1908/1–2.

References: (1) Vasil'ev, V.I., Y.G. Lavrent'ev, and N.A. Pal'chik (1986) Kuzminite – $Hg_2(Br, Cl)_2$ – a new natural mercury halide. Zap. Vses. Mineral. Obshch., 115, 595–598 (in Russian). (2) (1988) Amer. Mineral., 73, 192 (abs. ref. 1). (3) (1988) Mineral. Abs., 39, 122 (abs. ref. 1).