Poyarkovite Hg_3OCl

Crystal Data: Monoclinic. *Point Group*: 2/*m*. Granular, porous to dense, to 1 mm.
Twinning: Frequently observed under the microscope.

Physical Properties: *Fracture*: Irregular to conchoidal. *Tenacity*: Very brittle. Hardness = 2-2.5 VHN = 173-201, 188 average (20 g load). D(meas.) = 9.56 D(calc.) = 9.643

Optical Properties: Translucent. *Color*: Deep raspberry-red to cherry-red, turns black on exposure; deep red or brownish red in transmitted light; white with a weak bluish gray tint in reflected light. *Streak*: Red. *Luster*: Vitreous to adamantine.
Optical Class: Biaxial. n = > 2.0 2V(meas.) = n.d. *Pleochroism*: Weak, sky-blue to brown-red or violet to gray. *Anisotropism*: Strong, azure to blue.
R_1-R_2: (440) 25.0-31.0, (460) 24.5-31.0, (480) 22.5-31.0, (500) 22.5-30.0, (520) 22.2-29.2, (540) 22.0-28.4, (560) 21.6-27.2, (580) 20.9-25.5, (600) 20.0-23.5, (620) 18.5-22.1, (640) 17.0-20.7

Cell Data: *Space Group*: *C*2/*c*. a = 19.009(3) b = 9.018(4) c = 16.848(9) β = 118.82(3)° Z = 24

X-ray Powder Pattern: Khaydarkan, Kyrgyzstan.
2.83 (10), 2.74 (8), 1.799 (6.5), 2.60 (6), 3.09 (5), 2.96 (4), 1.883 (4)

Chemistry:

	(1)	(2)
Hg	91.30	92.12
O	2.36	2.45
Cl	5.30	5.43
Total	98.96	100.00

(1) Khaydarkan, Kyrgyzstan; by electron microprobe, average of ten analyses; corresponds to $Hg_{3.03}O_{0.99}Cl_{1.00}$. (2) Hg_3OCl.

Occurrence: A secondary mineral in the oxidized zone of mercury deposits.

Association: Eglestonite, calomel, terlinguaite, montroydite, kuznetsovite, shakhovite, chursinite, corderoite, mercury, cinnabar, livingstonite.

Distribution: In the Khaydarkan mercury deposit, Fergana Valley, Alai Range, south Kyrgyzstan. From the Arzak mercury deposit, ~12 km northeast of the Terlig-Khaya mercury mine, Pii-Khem district, Tuva Republic, Russia.

Name: Honors Vladimir Erastovich *Poyarkov* (1907-1975), Institute of Mineral Resources, Alma-Ata, Kyrgyzstan, investigator of mercury deposits, one of the discoverers of the Khaydarkan deposit.

Type Material: Central Siberian Geological Museum, Siberian Division, Academy of Sciences, Novosibirsk, Russia.

References: (1) Vasil'ev, V.I., Y.G. Lavrent'ev, and N.A. Pal'chik (1981) Poyarkovite - Hg_3ClO - a new natural mercury oxyhalide. Zap. Vses. Mineral. Obshch., 110, 501-506 (in Russian).
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(4) Vasil'ev, V.I., N.V. Pervukhina, G.V. Romanenko, S.A. Magarill, and S.V. Borisov (1999) New data on the mercury oxide-chloride mineral poyarkovite; the second find, and crystal-structure determination. Can. Mineral., 37, 119-126.