Cheremnykhite $Pb_3Zn_3Te^{6+}O_6(VO_4)_2$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$, $mm2$, *or* 222. Crystals are tabular, elongate, to 0.5 mm, showing {100} and {010}.

Physical Properties: *Cleavage:* One, perfect. *Fracture:* Brittle. Hardness = n.d. VHN = 673 (10 g load). D(meas.) = 6.44 D(calc.) = [6.39]

Optical Properties: Transparent. *Color:* Greenish yellow. *Streak:* White. *Luster:* Adamantine.
Optical Class: Biaxial (–). *Orientation:* $X = a$; $Y = b$; $Z = c$. *Dispersion:* $r > v$. $\alpha = 1.986(5)$ $\beta =$ n.d. $\gamma = 1.997(5)$ 2V(meas.) = 20°

Cell Data: *Space Group:* $Cmmm$, $Cmm2$, $Cm2m$, or $C222$. $a = 8.58(3)$ $b = 14.86(5)$ $c = 5.18(3)$ Z = 2

X-ray Powder Pattern: Kuranakh deposit, Russia.
3.30 (10), 3.00 (9), 1.607 (6), 1.903 (5), 2.470 (4), 3.66 (3), 2.120 (3)

Chemistry:

	(1)	(2)
TeO_3	13.76	13.81
P_2O_5	0.06	
As_2O_5	2.02	
V_2O_5	9.25	14.31
Sb_2O_5	0.06	
SiO_2	2.16	
ZnO	18.89	19.21
PbO	53.04	52.67
Total	99.24	100.00

(1) Kuranakh deposit, Russia; by electron microprobe, average of 10 analyses, corresponds to $Pb_{3.03}Zn_{2.97}Te_{1.00}O_{5.77}[(V_{0.65}Si_{0.23}As_{0.11})_{\Sigma=0.99}O_4]_2$. (2) $Pb_3Zn_3TeO_6(VO_4)_2$.

Occurrence: A late-stage mineral in the oxidized zone of a tellurium-bearing gold deposit.

Association: Kuksite, Si-rich dugganite, yafsoanite, descloizite, calcite.

Distribution: In the Kuranakh gold deposit, near Aldan, Sakha, Russia.

Name: To honor I.M. Cheremnykh (1928–), geologist, a discoverer of the Kuranakh deposit.

Type Material: Institute of Geosciences, Yakutsk Scientific Center, Academy of Sciences, Yakutsk, Russia, mk-113.

References: (1) Kim, A.A., N.V. Zayakina, and V.F. Makhotko (1990) Kuksite $Pb_3Zn_3TeO_6(PO_4)_2$ and cheremnykhite $Pb_3Zn_3TeO_6(VO_4)_2$ – new tellurates from the Kuranakh gold deposit (central Aldan, southern Yakutia [Sakha]). Zap. Vses. Mineral. Obshch., 119(5), 50–57 (in Russian). (2) (1992) Amer. Mineral., 77, 446 (abs. ref. 1).