

Kuksite**Pb₃Zn₃Te⁶⁺O₆(PO₄)₂**

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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$, $mm2$, or 222 . As thin tabular crystals, to 0.3 mm, with well-developed {100}.

Physical Properties: *Cleavage:* One, perfect. *Tenacity:* Brittle. Hardness = n.d. VHN = 325 (10 g load). D(meas.) = n.d. D(calc.) = 6.21 Fluoresces weakly under UV.

Optical Properties: Translucent, transparent in thin fragments. *Color:* Gray. *Streak:* White. *Luster:* Adamantine.

Optical Class: Biaxial (-). *Orientation:* $Z = c$; positive elongation. *Dispersion:* $r > v$. $\alpha = 1.971(5)$ $\beta = \text{n.d.}$ $\gamma = 1.981(5)$ $2V(\text{meas.}) = 12^\circ\text{--}20^\circ$

Cell Data: *Space Group:* $Cmmm$, $C222$, $Cmm2$, or $Cm2m$. $a = 8.50(3)$ $b = 14.72(5)$ $c = 5.19(3)$ $Z = 2$

X-ray Powder Pattern: Kuranakh deposit, Russia. 3.29 (10), 3.00 (8), 1.903 (5), 2.594 (4), 1.606 (3), 5.18 (2), 3.68 (2b)

Chemistry:	(1)	(2)
TeO ₃	14.30	14.26
P ₂ O ₅	10.38	11.53
As ₂ O ₅	0.07	
V ₂ O ₅	1.81	
SiO ₂	0.40	
ZnO	20.76	19.83
PbO	50.59	54.38
CaO	1.46	
Total	99.77	100.00

(1) Kuranakh deposit, Russia; by electron microprobe, average of nine analyses, corresponds to $(\text{Pb}_{2.68}\text{Ca}_{0.31})_{\Sigma=2.99}\text{Zn}_{3.01}\text{Te}_{0.96}\text{O}_{5.94}[(\text{P}_{0.86}\text{V}_{0.12}\text{Si}_{0.04})_{\Sigma=1.02}\text{O}_4]_2$. (2) $\text{Pb}_3\text{Zn}_3\text{TeO}_6(\text{PO}_4)_2$.

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

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

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

Name: To honor A.I. Kuks (1906–), a discoverer of the Kuranakh deposit.

Type Material: Institute of Geosciences, Yakutsk Scientific Center, Academy of Sciences, Yakutsk, Russia, mk-112.

References: (1) Kim, A.A., N.V. Zayakina, and V.F. Makhotko (1990) Kuksite $\text{Pb}_3\text{Zn}_3\text{TeO}_6(\text{PO}_4)_2$ and cheremnykhite $\text{Pb}_3\text{Zn}_3\text{TeO}_6(\text{VO}_4)_2$ – 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).