Cheremnykhite

\[ \text{Pb}_3\text{Zn}_3\text{Te}^{6+}\text{O}_6(\text{VO}_4)_2 \]

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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\}.

VHN = 673 (10 g load). D(meas.) = 6.44 D(calc.) = [6.39]

Luster: Adamantine.
Optical Class: Biaxial (−). Orientation: X = a; Y = b; Z = c.
Dispersion: \( r > v \). \( \alpha = 1.986(5) \)
\( \beta = \text{n.d.} \)
\( \gamma = 1.997(5) \)
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:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TeO₄</td>
<td>13.76</td>
<td>13.81</td>
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<tr>
<td>P₂O₅</td>
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<td>As₂O₅</td>
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<tr>
<td>V₂O₅</td>
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<tr>
<td>Sb₂O₅</td>
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<tr>
<td>SiO₂</td>
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<tr>
<td>ZnO</td>
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<tr>
<td>PbO</td>
<td>53.94</td>
<td>52.67</td>
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<tr>
<td>Total</td>
<td>99.24</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Kuranakh deposit, Russia; by electron microprobe, average of 10 analyses, corresponds to \( \text{Pb}_{3.03}\text{Zn}_{2.97}\text{Te}_{1.00}\text{O}_{5.77}[\text{V}_{0.65}\text{Si}_{0.23}\text{As}_{0.11}]\Sigma_{=0.99}\text{O}_4 \).
(2) \( \text{Pb}_3\text{Zn}_3\text{Te}_6\text{O}_6(\text{VO}_4)_2 \).

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.