Izoklakeite

\[
\text{Pb}_{27} \text{(Cu, Fe)}_{2} \text{(Sb, Bi)}_{19} \text{S}_{57}
\]

Crystal Data: Orthorhombic. Point Group: 2/m 2/m 2/m. Aggregates of acicular crystals, to 1 mm.


R_{1} - R_{2}: (400) 44.6–48.5, (420) 44.1–48.4, (440) 43.5–48.0, (460) 42.5–47.4, (480) 42.2–46.9, (500) 41.6–46.2, (520) 41.0–45.7, (540) 40.6–45.2, (560) 40.1–44.8, (580) 39.8–44.4, (600) 39.6–44.1, (620) 39.3–43.8, (640) 39.1–43.5, (660) 38.8–43.2, (680) 38.5–42.9, (700) 38.2–42.5

Cell Data: Space Group: Pnmm. \(a = 33.88(2)\) \(b = 38.02(2)\) \(c = 4.070(2)\) \(Z = 1\)

X-ray Powder Pattern: Izok Lake, Canada.
3.398 (100), 2.149 (60), 3.305 (40), 2.038 (40b), 2.878 (40), 1.745 (40), 3.159 (30)

Chemistry:

<table>
<thead>
<tr>
<th>Pb</th>
<th>46.6</th>
<th>50.01</th>
<th>Sb</th>
<th>13.3</th>
<th>11.67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu</td>
<td>1.0</td>
<td>0.88</td>
<td>Bi</td>
<td>20.5</td>
<td>19.20</td>
</tr>
<tr>
<td>Fe</td>
<td>0.2</td>
<td>0.19</td>
<td>S</td>
<td>17.0</td>
<td>16.91</td>
</tr>
<tr>
<td>Ag</td>
<td>2.0</td>
<td>0.59</td>
<td>Total</td>
<td>100.6</td>
<td>99.45</td>
</tr>
</tbody>
</table>

(1) Izok Lake, Canada; by electron microprobe, average of three analyses; corresponds to \(\text{Pb}_{22.96} \text{Ag}_{1.89} \text{(Cu}_{1.61} \text{Fe}_{0.37})_{\Sigma=1.98} \text{(Sb}_{11.15} \text{Bi}_{10.02})_{\Sigma=21.17} \text{S}_{54.13}\). (2) Vena mines, Sweden; by electron microprobe, average of 19 analyses; corresponds to \(\text{Pb}_{25.64} \text{Ag}_{0.58} \text{(Cu}_{1.47} \text{Fe}_{0.30})_{\Sigma=1.83} \text{(Sb}_{10.18} \text{Bi}_{9.76})_{\Sigma=19.94} \text{S}_{56.02}\).

Polymorphism & Series: Forms a series with giessenite.

Occurrence: In a massive Zn–Cu–Pb sulfide deposit (Izok Lake, Canada); from a Cu–Co sulfide deposit in skarn (Vena mines, Sweden).

Association: Galena, pyrrhotite, pyrite, jaskólskiite (Izok Lake, Canada); galena, jaskólskiite, pyrrhotite, bismuth, antimony, antimonian bismuthinite, kobellite (Vena mines, Sweden).

Distribution: From Izok Lake, Northwest Territories, Canada [TL]. At the Vena mines, near Askersund, Orebro, Sweden. From near Lake Zervreila, Vals, Graubünden, Switzerland. At Bazoges, Vendée, and in the Chalanches mine, near Allemont, Isère, France. In the Toroiaga mine, Baia Borca district, Romania. From the Srednegolgotaiskoe gold deposit, eastern Transbaikalia, Siberia, Russia. At the Otome mine, Yamanashi Prefecture, Japan. From Mangchang, Guangxi Autonomous Region, China.

Name: For the locality at Izok Lake, Canada.


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