Maikainite

\[ \text{Cu}_{20}(\text{Fe}, \text{Cu})_{6}\text{Mo}_2\text{Ge}_6\text{S}_{32} \]

**Crystal Data:** Isometric.  *Point Group:* 4 3m. Crystals resemble rhombododecahedra or octahedra, commonly as rounded grains to 150 μm or as rims on colusite or zones in ovamboite.


**Cell Data:** *Space Group:* \( P4^-3 n. \) By analogy with the germanite group.  \( a = 10.64 \)  \( Z = 1 \)

**X-ray Powder Pattern:** Maikain deposit, Kazakhstan.

3.07 (100), 2.66 (20), 1.884 (80), 1.603 (40), 1.220 (20), 1.331 (10), 1.190 (10)

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu</td>
<td>42.55</td>
</tr>
<tr>
<td>Fe</td>
<td>6.35</td>
</tr>
<tr>
<td>Zn</td>
<td>0.56</td>
</tr>
<tr>
<td>Mo</td>
<td>5.21</td>
</tr>
<tr>
<td>W</td>
<td>1.24</td>
</tr>
<tr>
<td>V</td>
<td>0.12</td>
</tr>
<tr>
<td>Ge</td>
<td>10.86</td>
</tr>
<tr>
<td>Ga</td>
<td>0.15</td>
</tr>
<tr>
<td>As</td>
<td>2.28</td>
</tr>
<tr>
<td>S</td>
<td>31.40</td>
</tr>
<tr>
<td>Total</td>
<td>100.72</td>
</tr>
</tbody>
</table>

(1) Maikain deposit, Kazakhstan; electron microprobe analysis; corresponding to 
\( (\text{Cu}_{21.91}\text{Fe}_{3.72}\text{Zn}_{0.28})\text{S}_{25.91}(\text{Mo}_{1.79}\text{W}_{0.22}\text{V}_{0.08})\text{Ge}_{2.09}(\text{Ge}_{4.90}\text{Ga}_{0.07}\text{As}_{0.07})\text{S}_{53.94}. \)

**Mineral Group:** Germanite group.

**Occurrence:** In a gold-bearing, base-metal, massive-sulfide deposit (Maikain); in a germanium-bearing, base-metal, massive-sulfide deposit (Tsumeb).

**Association:** Germanite, ovamboite, germanocolusite, sphalerite, bornite, tennantite, gallite, galena, barite (Maikain); ovamboite, germanite and germanocolusite (Tsumeb).

**Distribution:** From the Maikain deposit, Kazakhstan, and the Tsumeb deposit, Ovamboland, Namibia.

**Name:** For the locality, the Maikain deposit, that produced the first specimens studied.

**Type Material:** A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, and in the Mining Museum, St. Petersburg, Russia.