Gortdrumite

\[ \text{Cu}_{18}\text{FeHg}_6\text{S}_{16}(?) \]

\( \text{Cu}_{18.58}\text{Fe}_{1.13}\text{Hg}_{6.32}\text{S}_{16.00} \) (1) Gortdrum deposit, Ireland; by electron microprobe, average of four analyses; corresponds to \( \text{Cu}_{18.58}\text{Fe}_{1.13}\text{Hg}_{6.32}\text{S}_{16.00} \). (2) Do.; by electron microprobe, corresponds to \( \text{Cu}_{14.15}\text{Fe}_{0.92}\text{Hg}_{4.83}\text{S}_{16.00} \).

**Crystal Data:** Orthonhombic. **Point Group:** n.d. As anhedral grains, to 200 \( \mu \text{m} \). **Twinning:** Fine lamellar twinning in some grains.

**Physical Properties:** Hardness = n.d. VHN = 186–230 (10 g load). \( \text{D(meas.)} = \text{n.d.} \). \( \text{D(calc.)} = [6.80] \)

**Optical Properties:** Opaque. **Color:** Blackish lead-gray, resembling chalcocite. **Luster:** Metallic. **Anisotropism:** Strong, with colors from grayish white with a bluish tint to blue.

\[ R_1 - R_2 : (400) \ 28.0 - 31.4, (420) \ 28.1 - 31.4, (440) \ 28.0 - 31.3, (460) \ 27.8 - 31.2, (480) \ 27.6 - 31.1, (500) \ 27.4 - 31.1, (520) \ 27.0 - 30.8, (540) \ 26.7 - 30.5, (560) \ 26.2 - 30.0, (580) \ 25.9 - 29.5, (600) \ 25.6 - 29.0, (620) \ 25.4 - 28.6, (640) \ 25.3 - 28.4, (660) \ 25.3 - 28.2, (680) \ 25.3 - 28.1, (700) \ 25.2 - 28.0 \]

**Cell Data:** \( \text{Space Group:} \) n.d. \( a = 14.958 \) \( b = 7.900 \) \( c = 24.10 \) \( Z = 4 \)

**X-ray Powder Pattern:** Gortdrum deposit, Ireland. 4.58 (100), 3.38 (70), 2.88 (50), 2.78 (50), 6.03 (40), 3.08 (30), 3.02 (30), 25.3–28.0

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu</td>
<td>38.68</td>
<td>38.8</td>
<td></td>
</tr>
<tr>
<td>Fe</td>
<td>2.07</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Hg</td>
<td>41.55</td>
<td>39.6</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>16.81</td>
<td>21.0</td>
<td></td>
</tr>
</tbody>
</table>

Total 99.11 99.5

(1) Gortdrum deposit, Ireland; by electron microprobe, average of four analyses; corresponds to \( \text{Cu}_{18.58}\text{Fe}_{1.13}\text{Hg}_{6.32}\text{S}_{16.00} \). (2) Do.; by electron microprobe, corresponds to \( \text{Cu}_{14.15}\text{Fe}_{0.92}\text{Hg}_{4.83}\text{S}_{16.00} \).

**Occurrence:** Admixed with other sulfide minerals in a vein cutting dolomitized limestone; mineral associations suggest formation at less than 200 °C.

**Association:** Chalcopyrite, bornite, chalcocite, cinnabar, ferroan dolomite, barite.

**Distribution:** From the Gortdrum deposit, near Tipperary, Co. Tipperary, Ireland [TL].

**Name:** For the type locality, the Gortdrum deposit, Ireland.
