Ferrokesterite  

**Crystal Data:** Tetragonal, pseudocubic. **Point Group:** 4. Massive, granular, to 0.5 mm.

**Physical Properties:** Cleavage: Distinct on {110}; a parting on {001}. Hardness = ~4  
VHN = 228–255, 238 average (100 g load). D(meas.) = n.d. D(calc.) = 4.490

**Optical Properties:** Opaque. **Color:** Steel-gray; medium gray in reflected light.  
**Streak:** Black.  
**Luster:** Metallic.  
**Anisotropism:** Weak; in shades of gray.  
**Bireflectance:** Weak.

\[ R_1 - R_2: 23.9–26.8 \text{ (470)}, 26.0–27.0 \text{ (546)}, 26.4–27.3 \text{ (589)}, 26.0–26.8 \text{ (650)} \]

**Cell Data:** **Space Group:** \( \overline{I}\overline{T} \) (by analogy to kesterite).  
\( a = 5.433(36) \quad c = 10.883(89) \)  
Z = 2

**X-ray Powder Pattern:** Cligga mine, England.  
3.13 (10), 1.919 (6), 1.110 (4), 2.712 (3), 1.242 (3), 1.045 (3), 0.9182 (3)

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu</td>
<td>29.5</td>
<td></td>
</tr>
<tr>
<td>Zn</td>
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<tr>
<td>Cd</td>
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</tr>
<tr>
<td>Fe</td>
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<tr>
<td>Sn</td>
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<tr>
<td>S</td>
<td>30.1</td>
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</tr>
</tbody>
</table>

Total 100.9

(1) Cligga mine, England; by electron microprobe, corresponding to \( \text{Cu}_{1.99}(\text{Fe}_{0.67}\text{Zn}_{0.33})\Sigma=1.00 \) \( \text{Sn}_{0.99}\text{S}_{4.02} \).

**Polymorphism & Series:** Dimorphous with stannite.

**Occurrence:** In greisen-bordered sulfide veins in granite.

**Association:** Arsenopyrite, cassiterite, chalcopyrite, sphalerite, chalcocite, quartz.

**Distribution:** From the Cligga mine, Perranzabuloe, Cornwall, England [TL].

**Name:** For its content of iron, ferrum, and relation to kesterite.
