Salzburgite

\[ \text{Cu}_{1.6}\text{Pb}_{1.6}\text{Bi}_{6.4}\text{S}_{12} \]

**Crystal Data:** Orthorhombic.  \[ \text{Point Group: } 2/m \ 2/m \ 2/m. \]  As elongate crystals to 0.3 mm and as exsolution lamellae.

**Physical Properties:**  
- **Cleavage:** None.  
- **Fracture:** Uneven.  
- **Tenacity:** Brittle.  
- **Hardness:** n.d.  
- **VHN:** n.d.  
- **D(meas.):** n.d.  
- **D(calc.):** 6.904

**Optical Properties:**  
- **Opaque.**  
- **Color:** Light gray, white with a creamy tint in reflected light.  
- **Streak:** Grayish black.  
- **Luster:** Metallic.  
- **Optical Class:** n.d.  
- **Pleochroism:** None.  

**Cell Data:**  
- **Space Group:** \( \text{Pmc}_2_1. \)  
- \( a = 4.0074(9) \)  
- \( b = 44.81(1) \)  
- \( c = 11.513(3) \)  
- **Z = 4**

**X-ray Powder Pattern:** Calculated pattern.  
3.631 (100), 2.836 (93.5), 3.136 (92.9), 3.552 (85.8), 4.015 (57.3), 3.156 (56.9), 3.586 (55.3)

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu</td>
<td>4.67</td>
<td></td>
</tr>
<tr>
<td>Fe</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>Pb</td>
<td>15.86</td>
<td></td>
</tr>
<tr>
<td>Bi</td>
<td>61.90</td>
<td></td>
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<tr>
<td>S</td>
<td>17.87</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.33</td>
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</tbody>
</table>

(1) Felbertal scheelite deposit, Hohe Tauern, Salzburg province, Austria; average of 19 electron microprobe analyses; corresponds to \( \text{Cu}_{1.58}\text{Fe}_{0.01}\text{Pb}_{1.65}\text{Bi}_{6.38}\text{S}_{12.00}. \)

**Occurrence:** In quartz veins cutting a metamorphosed (upper greenschist to lower amphibolite facies) scheelite deposit.

**Association:** Gladite-krupkaite, the gustavite-lillianite solid solution, pavonite, makovickyite, cosalite, cannizzarite, tetradymite, native Bi, chalcopyrite, pyrite.

**Distribution:** From the Felbertal scheelite deposit, Hohe Tauern, about 10 km south of Mittersill, Salzburg province, Austria.

**Name:** For the province of Salzburg, Austria, in which the Felbertal deposit is located.

**Type Material:** Geological Museum, University of Copenhagen, Denmark and in the reference collection, Mineralogical Institute, University of Salzburg, Austria.

**References:**  