**Fülöppite**

\[ \text{Pb}_3\text{Sb}_8\text{S}_{15} \]

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**Crystal Data:** Monoclinic. *Point Group:* \(2/m\). Crystals short prismatic \([201]\), to \(3\,\text{mm}\), and pyramidal; striated on \(\{100\}\) \(\parallel\) \(\{010\}\) and on \(\{112\}\) \(\parallel\) \(\{110\}\); curved crystals common.

**Physical Properties:** Fracture: Uneven. Tenacity: Brittle. Hardness = 2.5 VHN = \(140–157\) (100 g load). \(D(\text{meas.}) = 5.22\) \(D(\text{calc.}) = 5.19\)

**Optical Properties:** Opaque. Color: Lead-gray; may tarnish steel-blue or bronzy white in polished section. Streak: Reddish gray. Luster: Metallic. Anisotropism: May be weak in bluish gray, moderate in blue-green to red-brown.

\[R_1-R_2: (400) 37.8–45.9, (420) 37.6–45.7, (440) 37.3–45.2, (460) 37.1–44.6, (480) 37.0–44.0, (500) 36.7–43.4, (520) 36.3–42.6, (540) 36.1–42.0, (560) 35.9–41.3, (580) 35.4–40.5, (600) 34.6–39.3, (620) 33.6–39.1, (640) 32.5–36.9, (660) 31.6–35.9, (680) 30.8–35.1, 700) 30.1–34.4\]

**Cell Data:** *Space Group:* \(C2/c\). \(a = 13.441\) \(b = 11.726\) \(c = 16.930\) \(\beta = 94.71(8)^\circ\) \(Z = 4\)

**X-ray Powder Pattern:** Baia Mare, Romania.

3.89 (100), 3.20 (90), 2.919 (80), 2.822 (80), 3.23 (70), 2.749 (70), 6.25 (50)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
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<tbody>
<tr>
<td>Pb</td>
<td>28.29</td>
<td>30.6</td>
<td>29.93</td>
</tr>
<tr>
<td>Sb</td>
<td>47.50</td>
<td>47.0</td>
<td>46.91</td>
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<tr>
<td>S</td>
<td>24.10</td>
<td>23.1</td>
<td>23.16</td>
</tr>
<tr>
<td>rem.</td>
<td>0.19</td>
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<tr>
<td>Total</td>
<td>100.08</td>
<td>100.7</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Baia Mare, Romania; remainder is SiO\(_2\); corresponds to Pb\(_{2.95}\)Sb\(_{7.90}\)S\(_{15.00}\). (2) Skalnoye deposit, Kazakhstan; [??by electron microprobe?]? corresponds to Pb\(_{3.01}\)Sb\(_{8.02}\)S\(_{15.00}\). (3) Pb\(_3\)Sb\(_8\)S\(_{15}\).

**Occurrence:** Of hydrothermal origin.

**Association:** Zinkenite, senseyite, fizélyite, andorite, freieslebenite, geocronite, boulangerite, janesonite, cinnabar, sphalerite, marcasite, quartz, dolomite.

**Distribution:** In Romania, in the Baia Mare (Nagybánya) district, from the Dealul Crucii (Kereszthegy) [TL] and Herja mines. At Wet Swine Gill, Caldbeck Fells, Cumbria, England. In France, from Auliac, Cantal; Bodennc and Bournac, Montagne Noire, [Hérault??not=??so double check both Bodennec and Bournac localities??] Finistère. From the North Altyntopkan Pb–Zn skarn deposit, northwestern Karamazar, Tajikistan. At the Skalnoye Hg–Sb deposit, central Kazakhstan. In the Lake George antimony deposit, 40 km west of Fredericton, New Brunswick, Canada.

**Name:** For Dr. Béla Fülöpp (1863–1938), mineral collector of Hungary.


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