Stephanite Ag₅SbS₄

Crystal Data: Orthorhombic. Point Group: mm2. Crystals short prismatic to tabular [001], to 6 cm, also elongated along [100], with {110} striated parallel to [114]; massive, compact and disseminated. Twinning: On {110}, commonly repeated to form pseudohexagonal groups; less common on {130}, {100} and {010}, with composition plane {001}.


Anisotropism: Strong in vivid colors. R1–R2: (400) 32.0–33.0, (420) 32.1–33.2, (440) 32.2–33.4, (460) 31.5–33.2, (480) 30.7–32.6, (500) 30.0–32.0, (520) 29.0–31.3, (540) 28.4–30.6, (560) 28.0–30.2, (580) 27.6–29.8, (600) 27.5–29.6, (620) 27.6–29.6, (640) 27.8–29.5, (660) 28.0–29.2, (680) 28.5–28.7, (700) 28.2–28.2


X-ray Powder Pattern: Freiberg, Germany. 3.08 (100), 2.58 (90), 2.89 (60), 2.13 (50), 2.19 (40), 1.834 (40), 3.56 (30)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag</td>
<td>68.65</td>
<td>68.21</td>
<td>68.33</td>
</tr>
<tr>
<td>Sb</td>
<td>15.22</td>
<td>15.86</td>
<td>15.42</td>
</tr>
<tr>
<td>S</td>
<td>16.02</td>
<td>15.95</td>
<td>16.25</td>
</tr>
<tr>
<td>Total</td>
<td>99.89</td>
<td>100.02</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Copiapó, Chile; traces of As and Cu. (2) Cornwall, England; trace of Fe. (3) Ag₅SbS₄

Occurrence: A late-stage mineral in hydrothermal silver deposits.

Association: Proustite, acanthite, silver, tetrahedrite, galena, sphalerite, pyrite.

Distribution: From many silver mining localities, typically in small amounts, and only rarely in fine specimens. In Germany, at Freiberg [TL], Schneeberg, and Marienberg, Saxony; and as exceptional crystals from St. Andreasberg, Harz Mountains. In Slovakia, at Banská Štiavnica (Schemnitz). In the Czech Republic, at Jáchymov (Joachimsthal), Pribram, and Třebíč. In Italy, fine twins from Monte Narabu, near Sarrabus, Sardinia. In England, as twinned crystals from Wheal Boys, St. Endellion, Cornwall. At Espedalen, Norway. From Azegour, Morocco. At Alten-Topkan, Tadjikistan. In Canada, in the Cobalt district, Ontario; at United Keno Hill Mines, and fine examples from the Husky mine, Elsa, Yukon Territory. In the USA, in Nevada, as an important ore mineral in the Comstock Lode, Virginia City, Storey Co. In Mexico, large crystals from Arizpe, Sonora; at Guanajuato; from Fresnillo, Zacatecas. At Chañarcillo, south of Copiapó, Atacama, Chile. In Bolivia, from Colquechaca, Potosí. At San Cristobal, Peru. From Broken Hill, New South Wales, Australia.

Name: In honor of the Archduke Victor Stephan (1817–1867), former Mining Director of Austria.


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