Stützite  \( \text{Ag}_{5-x}\text{Te}_3 \) (x = 0.24 to 0.36)

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Crystal Data: Hexagonal. Point Group: 6/m 2/m 2/m. The only crystal known is the type, 2 cm, hexagonal, equant, and highly modified, with 14 forms; commonly massive, compact, granular.

Physical Properties: Fracture: Subconchoidal. Tenacity: Brittle. Hardness = 3.5 VHN = 73–90 (25 g load). D(meas.) = 8.00 D(calc.) = 8.18


Cell Data: Space Group: C\(6/m\)mmm. \(a = 13.38\) \(c = 8.45\) \(Z = 7\)

X-ray Powder Pattern: May Day mine, Colorado, USA.
2.16 (100b), 2.55 (80b), 3.03 (70), 2.62 (70), 3.56 (60), 3.52 (60), 2.11 (60)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag</td>
<td>57.1</td>
<td>59.8</td>
<td>58.49</td>
</tr>
<tr>
<td>Cu</td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Te</td>
<td>42.6</td>
<td>39.2</td>
<td>41.51</td>
</tr>
<tr>
<td>Total</td>
<td>99.7</td>
<td>99.1</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Red Cloud mine, Colorado, USA; by electron microprobe, corresponding to Ag\(_{4.76}\)Te\(_{3.00}\).
(2) Bisbee, Arizona, USA; by electron microprobe, corresponding to \(\text{Ag}_{5.41}\text{Cu}_{0.02}\)\(\Sigma=5.43\)Te\(_{3.00}\).
(3) \(\text{Ag}_{5}\text{Te}_3\).

Occurrence: As replacement masses in hydrothermal deposits associated with other tellurides and sulfides.

Association: Sylvanite, hessite, altaite, petzite, empressite, tellurium, gold, galena, sphalerite, colusite, tetrahedrite–tennantite, pyrite.

Distribution: A museum specimen, probably from Săcărimb (Nagyág), Romania [TL]. At Kremnica (Kremnitz) and Byšta, Slovakia. From Glava, Värmland, Sweden. In the Kochbulak gold deposit, Chatkalguramins Mountains, eastern Uzbekistan. On Temagami Island, Lake Temagami, Ontario; and at Lindquist Lake, Quebec, Canada. In the USA, in Colorado, at the May Day mine, La Plata district, La Plata Co.; from the Golden Fleece mines, Lake City, Hinsdale Co.; at the Empress Josephine mine, Bonanza district, Saguache Co.; from Buckeye Gulch, near Leadville, Lake Co.; and at the Red Cloud and other mines, Jamestown and Gold Hill districts, Boulder Co. In the Mayflower mine, Tobacco Root Mountains, Madison Co., Montana; from the Campbell mine, Bisbee, Cochise Co., Arizona. At the Moctezuma (Bambolla) mine, 12 km south of Moctezuma, Sonora, Mexico. In the Kawazu mine, Shizuoka Prefecture, Japan.

Name: To honor Andreas Xavier Stütz (1747–1806), mineralogist of Vienna, Austria.

Type Material: Vienna University, Vienna, Austria, 5808; Harvard University, Cambridge, Massachusetts, USA, 108098.