Tsumcorite

\[ \text{Pb}(\text{Zn, Fe}^{3+})_2(\text{AsO}_4)_2(\text{OH}, \text{H}_2\text{O})_2 \]

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Crystal Data: Monoclinic. Point Group: 2/m. Crystals are prismatic, elongated along [010], wedge-shaped, showing \{201\}, \{401\}, \{001\}, \{111\}, to 5 mm, in radiating sheaves and spherulites, may be feathery, aggregated into crusts, earthy, powdery. Twinning: Common, on a unknown law.

Physical Properties: Cleavage: On \{001\}, good. Hardness = 4.5 D(meas.) = 5.2 D(calc.) = 5.39


X-ray Powder Pattern: Tsumeb, Namibia.

Chemistry:

<table>
<thead>
<tr>
<th>Element</th>
<th>(1)</th>
<th>(2)</th>
<th>(1)</th>
<th>(2)</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As₂O₅</td>
<td>34.80</td>
<td>36.20</td>
<td>CuO</td>
<td>1.50</td>
<td>0.15</td>
<td>CaO</td>
</tr>
<tr>
<td>Fe₂O₃</td>
<td>10.62</td>
<td>14.69</td>
<td>ZnO</td>
<td>14.97</td>
<td>H₂O</td>
<td>4.40</td>
</tr>
<tr>
<td>FeO</td>
<td>10.99</td>
<td>31.66</td>
<td>PbO</td>
<td>33.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ge</td>
<td>0.09</td>
<td>0.02</td>
<td>MgO</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 99.13 [99.77]

(1) Tsumeb, Namibia; H₂O confirmed by IR. (2) Do.; by electron microprobe, average of 19 analyses, total Fe as Fe₂O₃, confirmed by IR and Mössbauer spectroscopy, H₂O from theory; corresponds to \text{Pb}_{0.95}(\text{Zn}_{1.17}\text{Fe}^{3+}_{0.05})_{\Sigma=5.7}(\text{AsO}_4)_{2.01}(\text{OH})_{0.70}(\text{H}_2\text{O})_{1.17}\Sigma=1.87.

Mineral Group: Tsumcorite group.

Occurrence: A rare secondary mineral in the oxidized zone of some arsenic-bearing hydrothermal Pb–Zn deposits.

Association: Willemite, smithsonite, mimetite, scorodite, anglesite, arseniosiderite, beaverite, beudantite, carminite, ludlockite, o’danielite, zincroselite, stranskiite, leiteite (Tsumeb, Namibia); adamite, mimetite, smithsonite, goethite, quartz (Puttapa mine, Australia).

Distribution: From Tsumeb, Namibia. At Thasos, Greece. In Germany, from the Michael mine, Weiler, near Lahr, and the Clara mine, near Oberwolfach, Black Forest; and at the Rappold mine and a dump on the Roter Berg, Schneeberg, Saxony. In Mexico, from Mina Ojuela, Mapimí, Durango; at Las Animas, near Benjamin Hill, Sonora. In the USA, from the Richmond-Sitting Bull mine, Galena, Lawrence Co., South Dakota; in the Centennial Eureka mine, Tintic district, Juab Co., Utah. In Australia, at the Puttapa zinc mine, near Beltana, South Australia; from Broken Hill, New South Wales; at the Anticline prospect, 11 km west-southwest of Ashburton Downs homestead, Capricorn Range, Western Australia.

Name: In recognition of the TSUMeb CORporation’s support of mineralogical investigations of the Tsumeb, Namibia orebody.

Type Material: n.d.


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