Wickenbergite Pb₃CaAl₂Si₁₀O₂₇·4H₂O

Crystal Data: Hexagonal. Point Group: 3m. Tabular holohedral crystals, dominated by {000} and {1011}, to 1.5 mm. As spongy aggregates of small, highly perfect individuals; as subparallel aggregates or rosettes; granular.


D(meas.) = 3.85  D(calc.) = 3.87  Fluoresces dull orange under SW UV.

Optical Properties: Transparent to translucent. Color: Colorless to white; rarely salmon-pink. Luster: Vitreous. Optical Class: Uniaxial (-). \( \omega = 1.692 \)  \( \epsilon = 1.648 \)  Dispersion: \( r < v \); moderate.

Cell Data: Space Group: P\text{3}1c. \( a = 8.555(2) \)  \( c = 20.190(5) \)  \( Z = 2 \)

X-ray Powder Pattern: Near Wickenburg, Arizona, USA. 10.1 (100), 3.26 (80), 3.93 (60), 3.36 (40), 2.639 (40), 5.96 (30), 5.04 (30)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiO₂</td>
<td>42.1</td>
<td>40.04</td>
</tr>
<tr>
<td>Al₂O₃</td>
<td>7.6</td>
<td>6.79</td>
</tr>
<tr>
<td>PbO</td>
<td>44.0</td>
<td>44.62</td>
</tr>
<tr>
<td>CaO</td>
<td>3.80</td>
<td>3.74</td>
</tr>
<tr>
<td>H₂O</td>
<td>3.77</td>
<td>4.80</td>
</tr>
<tr>
<td>Total</td>
<td>101.27</td>
<td>99.99</td>
</tr>
</tbody>
</table>

(1) Near Wickenburg, Arizona, USA.  (2) Pb₃CaAl₂Si₁₀O₂₇·4H₂O.

Occurrence: In oxidized hydrothermal veins, carrying galena and sphalerite, in quartz and fluorite gangue (near Wickenburg, Arizona, USA).

Association: Phoenicochroite, mimetite, cerussite, willemite, crocoite, duftite, hemihedrite, alamosite, melanotekite, luddenite, ajoite, shattuckite, vauquelinite, descloizite, laumontite.

Distribution: In the USA, in Arizona, at several localities south of Wickenburg, Maricopa Co., including the Potter-Cramer property, Belmont Mountains, and the Moon Anchor mine; on dumps at a Pb-Ag-Cu prospect in the Artillery Peaks area, Mohave Co.; and in the Dives (Padre Kino) mine, Silver district, La Paz Co.

Name: For Wickenburg, Arizona, USA, the community near which it was discovered.

Type Material: Harvard University, Cambridge, Massachusetts, 119099; National Museum of Natural History, Washington, D.C., USA, 122875.