Anorpiment \[ \text{As}_2\text{S}_3 \]

**Crystal Data:** Triclinic.  \textit{Point Group}: \( \tilde{1} \). As drusy crusts of wedge-shaped crystals, to 0.2 mm, exhibiting \{010\}, \{110\}, \{\bar{1} 10\}, \{001\}, \{021\} and \{0\bar{2} 1\}.

**Physical Properties:**  \textit{Cleavage}: Perfect and easy on \{001\}.  \textit{Fracture}: Irregular.  \textit{Tenacity}: Sectile.  \textit{Hardness} = 1.5  \textit{D(meas.)} = 3.33  \textit{D(calc.)} = 3.346

**Optical Properties:**  \textit{Transparent}.  \textit{Color}: Greenish-yellow.  \textit{Streak}: Yellow.  \textit{Luster}: Resinous on crystal faces, pearly on cleavage surfaces.  \textit{Optical Class}: Biaxial (-).  \( n > 2 \ 2V = 35–40^\circ \) \textit{Orientation}: Acute bisectrix (X) is approximately perpendicular to the \{001\} cleavage.  \textit{Dispersion}: None.  \textit{Pleochroism}: None.

**Cell Data:**  \textit{Space Group}: \( P\bar{1}\).  \( a = 5.7577(2) \)  \( b = 8.7169(3) \)  \( c = 10.2682(7) \)  \( \alpha = 78.152(7)^\circ \)  \( \beta = 75.817(7)^\circ \)  \( \gamma = 89.861(6)^\circ \)  \( Z = 4 \)

**X-ray Powder Pattern:** Palomo mine, Castrovirreyna Province, Huancavelica Department, Peru.  2.552 (100), 4.867 (97), 2.469 (96), 3.609 (82), 4.519 (77), 2.880 (75), 3.702 (46)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As</td>
<td>58.21</td>
<td>60.91</td>
</tr>
<tr>
<td>S</td>
<td>38.72</td>
<td>39.09</td>
</tr>
<tr>
<td>Total</td>
<td>96.94</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Palomo mine, Castrovirreyna Province, Huancavelica Department, Peru; average of 4 electron microprobe analyses, corresponding to \( \text{As}_1.96\text{S}_3.04 \).  (2) \( \text{As}_2\text{S}_3 \).

**Polymorphism & Series:** Dimorphous with orpiment.

**Occurrence:** A very low-temperature hydrothermal mineral.

**Association:** Dufrénoyosite, muscovite, orpiment, pyrite, realgar.

**Distribution:** At the Palomo mine, Castrovirreyna Province, Huancavelica Department, Peru.

**Name:** Alludes to the mineral’s triclinic (anorthic) symmetry and dimorphous relation to orpiment.

**Type Material:** Natural History Museum of Los Angeles County, USA, # 63514 & 63544; Mineral Museum of the University of Arizona, Tucson, USA, #19326.