**Aheylite**  
\((\text{Fe}^{2+}, \text{Zn})\text{Al}_6(\text{PO}_4)_4(\text{OH})_8\cdot4\text{H}_2\text{O}\)

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**Crystal Data:** Triclinic. **Point Group:** 1 or \(\overline{1}\). As crystals, interlocked in felted and matted aggregates to form botryoidal, spherulitic masses; radiating, prismatic groups, to 5 mm.

**Physical Properties:** **Fracture:** Hackly to splintery. **Tenacity:** May be brittle.  
Hardness = 5–5.5  
\(D(\text{meas.}) = 2.84\)  
\(D(\text{calc.}) = 2.90\)

**Optical Properties:**  
Transparent in thin flakes. **Color:** Very pale blue, pale green, to blue-green.  
**Streak:** White.  
**Luster:** Porcelaneous to subvitreous.

**Optical Class:** Biaxial (+).  
\(n = 1.63\)  
\(2V(\text{meas.}) = \text{n.d.}\)

**Cell Data:**  
**Space Group:** \(P1\) or \(P\overline{1}\).  
\(a = 7.400(1)\)  
\(b = 9.896(1)\)  
\(c = 7.627(1)\)  
\(\alpha = 110.87^{\circ}\)  
\(\beta = 115.00^{\circ}\)  
\(\gamma = 69.96^{\circ}\)  
\(Z = 1\)

**X-ray Powder Pattern:** Huanuni mine, Bolivia.  
3.670 (100), 2.888 (67), 6.146 (43), 3.27 (37), 3.436 (36), 2.914 (34), 3.398 (25)

**Chemistry:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\text{P}_2\text{O}_5)</td>
<td>35.4%</td>
<td>35.23%</td>
</tr>
<tr>
<td>(\text{Al}_2\text{O}_3)</td>
<td>38.1%</td>
<td>37.96%</td>
</tr>
<tr>
<td>(\text{FeO})</td>
<td>4.14%</td>
<td>8.92%</td>
</tr>
<tr>
<td>(\text{ZnO})</td>
<td>4.02%</td>
<td></td>
</tr>
<tr>
<td>(\text{H}_2\text{O}^+)</td>
<td>18.5%</td>
<td>17.89%</td>
</tr>
<tr>
<td>(\text{H}_2\text{O}^-)</td>
<td>0.08%</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.24%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

(1) Huanuni mine, Bolivia; by ICP, \(\text{H}_2\text{O}^-\) by gravimetry, \(\text{H}_2\text{O}^+\) by Karl Fischer titration, average of four analyses; corresponds to \((\text{Fe}^{2+}\overline{\text{Zn}})^{\Sigma=0.86}\text{Al}_6(\text{PO}_4)_3.72(\text{PO}_3\text{OH})_{0.28}(\text{OH})_8\cdot4.10\text{H}_2\text{O}\).

(2) \(\text{FeAl}_6(\text{PO}_4)_4(\text{OH})_8\cdot4\text{H}_2\text{O}\).

**Mineral Group:** Turquoise group.

**Occurrence:** A late stage hydrothermal mineral in a base-metal-tin deposit (Huanuni mine, Bolivia).

**Association:** Variscite, sphalerite, vivianite, wavellite, cassiterite, pyrite, quartz (Huanuni mine, Bolivia).

**Distribution:** In the Huanuni mine, Oruro, Bolivia. From the Bali Lo copper prospect, 11 km west-southwest of Ashburton Downs homestead, Capricorn Range, Western Australia.

**Name:** To honor Allen V. Heyl (1918–), economic geologist, U.S. Geological Survey.

**Type Material:** n.d.