Ellingsenite

\[ \text{Na}_5\text{Ca}_6\text{Si}_{18}\text{O}_{38}(\text{OH})_{13}.6\text{H}_2\text{O} \]

**Crystal Data:** Triclinic.  
**Point Group:** \( \bar{1} \).  
Rhomb-like crystals, flattened on [001] and elongated along [100] in radiating sheaves, to 3 mm.

**Physical Properties:**  
*Cleavage:* Perfect on \{001\}.  
*Fracture:* Smooth.  
*Tenacity:* Sectile.  
Hardness = 4  
\( D(\text{meas.}) = 2.32(5) \)  
\( D(\text{calc.}) = 2.363 \)

**Optical Properties:**  
*Transparency:* Colorless, white in aggregates.  
*Streak:* White.  
*Luster:* Vitreous individuals, silky aggregates.  
*Optical Class:* Biaxial (-).  
\( \alpha = 1.520(2) \)  
\( \beta = 1.534(2) \)  
\( \gamma = 1.536 \)  
\( 2V(\text{meas.}) = 5^\circ \)  
\( 2V(\text{calc.}) = \text{n.d.} \)  
**Orientation:** \( X = c \).

**Cell Data:**  
*Space Group:* \( P\bar{1} \).  
\( a = 9.576(11) \)  
\( b = 5.577(11) \)  
\( c = 16.438(19) \)  
\( \alpha = 85.85(2)^\circ \)  
\( \beta = 75.23(2)^\circ \)  
\( \gamma = 60.142(14)^\circ \)  
\( Z = 1 \)

**X-ray Powder Pattern:** Ariskop quarry, Aris alkaline complex, Namibia.  
15.50 (100), 3.023 (33), 3.159 (30), 1.827 (27), 2.791 (24), 4.22 (16), 4.98 (14)

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Na(_2)O</td>
<td>9.26</td>
<td></td>
</tr>
<tr>
<td>SiO(_2)</td>
<td>60.35</td>
<td></td>
</tr>
<tr>
<td>K(_2)O</td>
<td>0.23</td>
<td></td>
</tr>
<tr>
<td>CaO</td>
<td>17.35</td>
<td></td>
</tr>
<tr>
<td>H(_2)O</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>99.69</td>
<td></td>
</tr>
</tbody>
</table>

(1) Ariskop quarry, Aris alkaline complex, Namibia; average of 4 electron microprobe analyses, H\(_2\)O by Penfield method; corresponding to \( (\text{Na}_{4.95}\text{K}_{0.09})_{3-5.04}(\text{Ca}_{5.57}\text{Na}_{0.43})_{2-6.00}\text{Si}_{18.10}\text{O}_{38}(\text{OH})_{13}.6\text{H}_2\text{O} \).

**Occurrence:** A low-temperature mineral in vesicles in hydrothermally altered phonolite.

**Association:** Aegirine, albite, manganoneptunite, microcline, natrolite, polyliithionite.

**Distribution:** From the Ariskop quarry, Aris alkaline complex, 25 km south of Windhoek, Namibia.

**Name:** Honors Dr. Hans Vidar Ellingsen (b. 1930), who has been chairman of the Norwegian Amateur Geological Society and who collected the first specimens.

**Type Material:** Mineralogical Museum, St. Petersburg State University, Russia (1/19443), and at the Natural History Museum, Oslo University, Norway (42188).

**References:**  