Eakerite  

\[ \text{Ca}_2\text{Sn}^{4+}\text{Al}_2\text{Si}_6\text{O}_{18}(\text{OH})_2\cdot 2\text{H}_2\text{O} \]

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**Crystal Data:** Monoclinic.  
**Point Group:** 2/m.  
Crystals prismatic, up to 5 mm, prism zone striated || [001]. Forms are \{111\}, \{210\}, \{410\}, \{201\}, \{001\}, and \{100\}. As minute lathlike inclusions along \{110\} in andradite.

**Physical Properties:**  
**Fracture:** Conchoidal.  
**Hardness:** 5.5  
D( meas.) = 2.93(1)  
D(calc.) = 2.931

**Optical Properties:**  
**Fracture:** Transparent to translucent.  
**Color:** Colorless to white.  
**Luster:** Vitreous.  
**Optical Class:** Biaxial (+).  
**Orientation:** X = b; Y \(\perp\) c = 23.5° \(\text{Dispersion:}\ r > v\), marked.  
α = 1.584  β = 1.586  γ = 1.600  \(2V(\text{meas.}) = ~35°\)

**Cell Data:**  
**Space Group:** P2\(_1\)/a.  
\(a = 15.829(7)\)  
\(b = 7.721(3)\)  
\(c = 7.438(3)\)

\(\beta = 101°34'(3)'\)  
\(Z = 2\)

**X-ray Powder Pattern:**  
Kings Mountain, North Carolina, USA.  
4.812 (100), 5.257 (90), 7.31 (80), 3.021 (80), 3.353 (60), 6.905 (50), 5.944 (50)

**Chemistry:**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>SiO(_2)</td>
<td>46.75</td>
</tr>
<tr>
<td>SnO(_2)</td>
<td>18.59</td>
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<tr>
<td>Al(_2)O(_3)</td>
<td>14.07</td>
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<tr>
<td>CaO</td>
<td>14.2</td>
</tr>
<tr>
<td>H(_2)O</td>
<td>6.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.3</td>
</tr>
</tbody>
</table>

(1) Kings Mountain, North Carolina, USA; by microchemical analysis, corresponds to \(\text{Ca}_{1.96}\text{Sn}^{4+}_{0.05}\text{Al}_{1.12}\text{Si}_{6.03}\text{H}_{5.77}\text{O}_{22}\).

**Occurrence:** Probably of hydrothermal origin, in a seam in spodumene-bearing pegmatite (Foote mine, North Carolina, USA); as exsolved inclusions in stanniferous andradite (Kitel’skoye deposit, Karelia).

**Association:**  
Tetrawickmanite, bavenite, quartz, albite (Foote mine, North Carolina, USA); andradite (Kitel’skoye deposit, Karelia).

**Distribution:**  
In the Foote mine, Kings Mountain, Cleveland Co., North Carolina, USA. From the Kitel’skoye tin skarn deposit, north of Lake Lagoda, Karelia.

**Name:** In honor of Jack Eaker, mineral collector of Kings Mountain, North Carolina, USA, who discovered the mineral.

**Type Material:**  

**References:**  