Killalaite

\[
Ca_3Si_2O_7 \cdot H_2O
\]

©2001 Mineral Data Publishing, version 1.2

Crystal Data: Monoclinal. Point Group: 2/m. Crystals are well-formed, elongated along [010], to 2 mm. Twinning: Complex penetration twinning, the composition plane of which includes [010]; they display characteristic rhombic cross sections showing crossed "bow tie" twins under crossed nicols.

Physical Properties: Cleavage: Perfect on {100}; poor on {010} and {001}. Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.94

Optical Properties: Translucent. Color: [White]; colorless in thin section. Optical Class: Biaxial (-). Orientation: \(Y = b; Z \wedge c \approx 16^\circ\). \(\alpha = 1.634\)–1.635 \(\beta = 1.646\) \(\gamma = 1.642\)–1.648 \(2V(meas.) = 26(2)^\circ\) \(2V(calc.) = 38^\circ\)

Cell Data: Space Group: \(P2_1/m\). \(a = 6.807\) \(b = 15.459\) \(c = 6.811\) \(\beta = 97.76^\circ\) \(Z = 4\)

X-ray Powder Pattern: Killala Bay, Ireland.
2.824 (100), 3.03 (80), 2.724 (60), 2.275 (45), 2.224 (45), 1.413 (40), 1.688 (35)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiO₂</td>
<td>39.8</td>
<td>39.22</td>
</tr>
<tr>
<td>CaO</td>
<td>57.0</td>
<td>54.90</td>
</tr>
<tr>
<td>H₂O</td>
<td>[3.2]</td>
<td>5.88</td>
</tr>
<tr>
<td>Total</td>
<td>[100.0]</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Killala Bay, Ireland; by electron microprobe, H₂O by difference, MgO, FeO, and Al₂O₃ each < 0.1%. (2) \(Ca_3Si_2O_7 \cdot H_2O\).

Occurrence: A secondary mineral in cavities and veins in hydrothermally altered and thermally metamorphosed limestones.

Association: Calcite, aßwillite, spurrite, wollastonite (Killala Bay, Ireland); larnite, magnetite, perovskite, spinel, spurrite (Carneal, Ireland).

Distribution: From near Inishcrone, along the east shore of Killala Bay, Co. Sligo, and at Carneal, Co. Antrim, Ireland. In Turkey, from the Güneyce-Ikizdere region, Trabzon Province.

Name: For the locality at Killala Bay, Ireland.
