Boracite

Crystal Data: Orthorhombic, pseudocubic. Point Group: mm2. Euhedral crystals, to 2.5 cm, (referred to pseudotetrahedral morphology) show prominent {001}, {110}, {111}, {T11}, and a dozen other modifying forms; spherulitic, plumose to fibrous, fine granular aggregates. Twinning: On {111}, as penetration twins.

Physical Properties: Fracture: Conchoidal to uneven. Hardness = 7–7.5
D(meas.) = 2.91–3.10 D(calc.) = 2.97 Very slowly soluble in H2O; strongly piezoelectric and pyroelectric.


Optical Class: Biaxial (+). Orientation: X = c; Y = a; Z = b. α = 1.662–1.658
β = 1.662–1.667 γ = 1.668–1.673 2V(meas.) = 82.5°

Cell Data: Space Group: Pca21, a = 8.577(6) b = 8.553(8) c = 12.09(1) Z = 4


2.044 (100), 3.025 (88), 2.705 (55), 3.492 (45), 2.137 (30), 6.050 (27), 2.468 (21)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
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<tbody>
<tr>
<td>B2O3</td>
<td>59.68</td>
<td>62.15</td>
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<tr>
<td>FeO</td>
<td>1.09</td>
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<tr>
<td>MgO</td>
<td>26.38</td>
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<td>MgCl2</td>
<td>12.17</td>
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<tr>
<td>LOI</td>
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<tr>
<td>Total</td>
<td>99.87</td>
<td>100.00</td>
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</tbody>
</table>

(1) Lüneburg, Germany; average of two analyses. (2) Mg3B7O13Cl.

Polymorphism & Series: Dimorphous with trembathite; forms a series with ericaite.

Occurrence: An uncommon component of bedded sedimentary salt and potash deposits of marine origin, the boron probably derived from nearby volcanic activity.

Association: Anhydrite, gypsum, halite, sylvite, carnallite, kainite, hilgardite.


Name: For boron in the composition.

Type Material: Mining Academy, Freiberger, Germany, 19324.