Bergslagite  CaBe(AsO$_4$)(OH)

Crystal Data: Monoclinic or triclinic, pseudomonoclinic.  
Point Group: 2/m or T.  
As elongated, flattened crystals, to 1 cm, showing {100} and {001}; in crusts.

Hardness = 5  
D(meas.) = 3.40(2)  
D(calc.) = 3.40  
Fluoresces pale shades of yellowish brown, greenish, or bluish under SW UV.

Optical Properties: Translucent.  
Color: Colorless, white or gray, dark gray-brown, brownish black; may be green or pink.  
Luster: Vitreous to greasy.

Optical Class: Biaxial (−).  
Orientation: X ≃ a; Y = b; Z ≃ c.  
Dispersion: r > v.

α = 1.659–1.660  
β = 1.678–1.681  
γ = 1.690–1.694  
2V(meas.) = ∼70°  
2V(calc.) = 74°–78°

Cell Data: Space Group: P2$_1$/c.  
a = 4.8818(9)  
b = 7.809(1)  
c = 10.127(1)  
β = 90.16(1)°  
Z = 4

3.200 (10), 3.519 (8), 4.879 (7), 3.905 (7), 3.046 (7), 2.917 (7), 2.409 (6)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As$_2$O$_5$</td>
<td>51.58</td>
<td>56.06</td>
</tr>
<tr>
<td>SiO$_2$</td>
<td>2.48</td>
<td></td>
</tr>
<tr>
<td>BeO</td>
<td>13.0</td>
<td>12.20</td>
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<tr>
<td>CaO</td>
<td>28.57</td>
<td>27.35</td>
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<tr>
<td>H$_2$O</td>
<td>6.0</td>
<td>4.39</td>
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<tr>
<td>Total</td>
<td>101.63</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Långban, Sweden; by electron microprobe, average of ten analyses, BeO from average of three determinations, by AA, emission spectroscopy, and the Weisz Ring-Oven technique, H$_2$O by TGA; corresponds to Ca$_{0.99}$Be$_{1.02}$[(AsO$_4$)$_{0.87}$(SiO$_4$)$_{0.08}$$\Sigma=0.95$(OH)$_{1.30}$.  
(2) CaBe(AsO$_4$)(OH).

Occurrence: In thin veins in pieces of hematite ore found on mine dumps from a metamorphosed Fe–Mn orebody (Långban, Sweden); in rhyolite (Sailauf, Germany).

Association: Manganooan diopside, mananberzelitlime, tilasite, svabite, hematite, calcite, barite (Långban, Sweden); hematite, muscovite (Sailauf, Germany).

Distribution: From Långban, Värmland, Sweden. In Switzerland, in the Falotta mine, Oberhalbstein, and in the Fianel mine, Val Ferrera, Graubünden; on the west flank of Cherbadung [Pizzo Cervandone], Biuntal, Valais. At Sailauf, northeast of Aschaffenburg, Spessart Mountains, Bavaria, Germany.

Name: For the occurrence at Långban, which is in the Bergslagen region of Sweden.

Type Material: University of Copenhagen, Copenhagen, Denmark; National Museum of Natural History, Washington, D.C., USA, 162582.

References:  