Bromellite BeO

Crystal Data:  Hexagonal.  Point Group: 6mm.  As prismatic crystals, elongated along [0001], to 1 mm, showing pyramidal hemimorphism, with {0001} and {10T0} well developed, {101T} small; may be tabular || {0001}; in randomly intergrown rosettelike aggregates; cleavage fragments, to 10 cm.

Physical Properties:  Cleavage: {1010}, distinct.  Hardness = ~9  D(meas.) = 3.017  D(calc.) = 3.044  Pyroelectric; fluoresces yellowish white in both LW and SW UV.

Optical Properties:  Transparent.  Color:  White to creamy white.  Luster:  Vitreous.  Optical Class:  Uniaxial (+).  \( \omega = 1.705-1.719 \)  \( \epsilon = 1.733 \)

Cell Data:  Space Group:  P6₃mc (synthetic).  \( a = 2.6983(4) \)  \( c = 4.3776(4) \)  \( Z = 2 \)

X-ray Powder Pattern:  Synthetic.  2.061 (100), 2.337 (91), 2.189 (61), 1.349 (29), 1.238 (24), 1.598 (22), 1.1482 (16)

Chemistry:

\[
\begin{align*}
\text{SiO}_2 & \quad 0.7 \\
\text{Al}_2\text{O}_3 & \quad 0.17 \\
\text{B}_2\text{O}_3 & \quad 1.4 \\
\text{Fe}_2\text{O}_3 & \quad 0.1 \\
\text{Sb}_2\text{O}_3 & \quad 0.29 \\
\text{MnO} & \quad \text{trace} \\
\text{BeO} & \quad 98.02 \\
\text{MgO} & \quad 0.07 \\
\text{CaO} & \quad 1.03 \\
\text{BaO} & \quad 0.55 \\
\text{LOI} & \quad 0.85 \\
\hline
\text{Total} & \quad 100.98 \\
\end{align*}
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(1) Långban, Sweden.  (2) Langesundsfjord, Norway; by AA and D-C arc spectroscopy.

Occurrence:  In hydrothermal calcite veins and veinlets in hematite skarn and skarnized limestones (Långban, Sweden); in vugs in natrolite, hydrothermally altered from nepheline, in syenite pegmatite (Langesundsfjord, Norway).

Association:  Swedenborgite, richterite, manganophyllite (Långban, Sweden); natrolite, diaspore, chamosite (Langesundsfjord, Norway).

Distribution:  From Långban, Värmland, Sweden.  In the Saga larvikite quarry, Tvedalen, near Larvik, Norway.  From the Izumrudnye district, Yekaterinburg (Sverdlovsk), Ural Mountains, the Pitkäranta district, Lake Ladoga, Karelia, and other less-well-defined localities in Russia.

Name:  For Magnus von Bromell (1679–1731), Swedish physician and mineralogist.

Type Material:  Swedish Museum of Natural History, Stockholm, Sweden.