Canavesite $\text{Mg}_2(\text{HBO}_3)(\text{CO}_3)\cdot 5\text{H}_2\text{O}$

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**Crystal Data:** Monoclinic, pseudohexagonal. **Point Group:** n.d. As fibrous [010], flattened pseudohexagonal crystals, to 3 mm, typically in rosettelike aggregates.

**Physical Properties:**  
* Cleavage: On \{h0l\}, one or more sets.  
* Tenacity: Slightly flexible.  
* Hardness = n.d.  
  $D(\text{meas.}) = \sim 1.8$  
  $D(\text{calc.}) = 1.790$

**Optical Properties:**  
* Transparent.  
* Color: Colorless to milky white.  
* Luster: Vitreous, silky in aggregates.  
  * Optical Class: Biaxial (+).  
  * Orientation: \(Z = b\).  
  * Dispersion: Very weak.  
  \[\alpha = 1.485(4)\]  
  \[\beta = 1.494(4)\]  
  \[\gamma = 1.505(2)\]  
\(2\nu(\text{meas.}) = \text{Very large.}\)

**Cell Data:**  
* Space Group: n.d.  
  * \(a = 23.49(2)\)  
  * \(b = 6.164(6)\)  
  * \(c = 21.91(2)\)  
  * \(\beta = 114.91(9)^\circ\)  
  * \(Z = 12\)

**X-ray Powder Pattern:**  
Brosso mine, Italy.  
9.54 (100), 8.12 (40), 4.56 (21), 3.110 (19), 7.80 (18), 7.53 (14), 2.233 (14)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{CO}_2</td>
<td>18.57</td>
<td>17.02</td>
</tr>
<tr>
<td>\text{B}_2\text{O}_3</td>
<td>12.70</td>
<td>13.47</td>
</tr>
<tr>
<td>\text{MgO}</td>
<td>31.60</td>
<td>31.18</td>
</tr>
<tr>
<td>\text{H}_2\text{O}</td>
<td>37.44</td>
<td>38.33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.31</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Brosso mine, Italy; average of two analyses, \text{CO}_2 and \text{H}_2\text{O} by elemental analyzer; corresponding to \(\text{Mg}_{2.03}(\text{HBO}_3)_{0.94}(\text{CO}_3)_{1.09}\cdot 4.9\text{H}_2\text{O}\).  
(2) \(\text{Mg}_2(\text{HBO}_3)(\text{CO}_3)\cdot 5\text{H}_2\text{O}\).

**Occurrence:** A rare secondary mineral on tunnel surfaces in an abandoned mine in weathering ludwigite–magnetite skarn.

**Association:** Ludwigite, magnetite.

**Distribution:** From the Brosso mine, northwest of Ivrea, Piedmont, Italy.

**Name:** For the Canavese district, in which the mine that produced the first specimens is located.

**Type Material:**  
Municipal Natural History Museum, Milan, 17349, M30079, M30099, M300100, M300102; National Museum of Natural History, Washington, D.C., USA, 148483–148485;  

**References:**  
(2) (1979) Amer. Mineral., 64, 652 (abs. ref. 1).