Belousovite

**KZn(SO₄)Cl**

**Crystal Data:** Monoclinic.  *Point Group: 2/m.* As irregularly-shaped grains and microcrystalline masses to 0.1 cm.

**Physical Properties:** *Cleavage:* Perfect on {100}.  *Fracture:* Uneven.  *Tenacity:* Brittle.  
Hardness = n.d.  
D(meas.) = n.d.  
D(calc.) = 2.89  
Water soluble and hygroscopic.

*Optical Class:* Biaxial (+).  

\[
a = 1.532(2) \quad \beta = 1.544(2) \quad \gamma = 1.570(2) \quad 2V(calc.) = 69.4^\circ
\]

**Cell Data:** Space Group: *P₂₁/c.*  
\[a = 6.8904(5) \quad b = 9.6115(7) \quad c = 8.2144(6) \quad \beta = 96.582(2)^\circ \quad Z = 4
\]

**X-ray Powder Pattern:** Yadovitaya fumarole, Tolbachik volcano, Kamchatka Peninsula, Russia.  
6.845 (100), 3.159 (84), 3.640 (71), 3.114 (52), 2.912 (44), 3.122 (41), 2.981 (41)

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>K₂O</td>
<td>19.55</td>
<td></td>
</tr>
<tr>
<td>Rb₂O</td>
<td>0.58</td>
<td></td>
</tr>
<tr>
<td>ZnO</td>
<td>34.85</td>
<td></td>
</tr>
<tr>
<td>SO₃</td>
<td>34.65</td>
<td></td>
</tr>
<tr>
<td>Cl</td>
<td>14.77</td>
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</tr>
<tr>
<td>-O = Cl₂</td>
<td>3.34</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>101.06</strong></td>
<td></td>
</tr>
</tbody>
</table>

(1) Yadovitaya fumarole, Second scoria cone, Tolbachik volcano, Kamchatka Peninsula, Russia; average of 6 EDS analyses; corresponds to K₀.₉₇⁹Rb₀.₀₁⁰Zn₁.₀₂S₁.₀₁O₄.₀₃Cl₀.₉₇.

**Occurrence:** As sublimates near a volcanic fumarole (∼250°C.) vent.

**Association:** Langbeinite, kamchatkite, euchlorine, anglesite, zincite.

**Distribution:** From the Yadovitaya fumarole, Second scoria cone, Tolbachik volcano, Kamchatka Peninsula, Russia.

**Name:** Honors Dr. Alexander Borisovich Belousov (b. 1962), Institute of Volcanology, Russian Academy of Sciences, Petropavlovsk-Kamchatskiy, for his contributions to volcanology.

**Type Material:** Mineralogical Museum, St. Petersburg State University, St. Petersburg, Russia (1/19665).