Vladkrivovichevite  \([\text{Pb}_{32}\text{O}_{18}]\,[\text{Pb}_{4}\text{Mn}_{2}\text{O}]\text{Cl}_{14}(\text{BO}_3)_8\cdot 2\text{H}_2\text{O}\)

**Crystal Data:** Orthorhombic.  \(\text{Point Group: } 2/m\ 2/m\ 2/m.\)  As grains < 0.1 mm.

**Physical Properties:**  
- **Cleavage:** None.  
- **Fracture:** Conchoidal.  
- **Tenacity:** Brittle.  
- **Hardness:** n.d.  
- **D(meas.):** n.d.  
- **D(calc.):** 7.40

**Optical Properties:**  
- **Color:** Pale greenish yellow, gray with a bluish tint and colorless internal reflections in reflected light.  
- **Streak:** White.  
- **Luster:** Adamantine.

**Optical Class:** n.d.

**Physical Properties:**  
- **Color:** Pale greenish yellow, gray with a bluish tint and colorless internal reflections in reflected light.  
- **Streak:** White.  
- **Luster:** Adamantine.

**Cell Data:**  
- **Space Group:** \(\text{Pmmn}.\)  
- **a = 12.759(1) \ b = 27.169(4), \ c = 11.515(1)\)  
- **Z = 2**

**X-ray Powder Pattern:** Kombat mine, Namibia.  
- 2.860 (100), 2.733 (84), 3.707 (49), 3.068 (37), 2.075 (32), 1.601 (32), 1.5950 (28)

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>PbO</td>
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<tr>
<td>MnO</td>
<td></td>
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<tr>
<td>B(_2)O(_3)</td>
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<td>[3.13]</td>
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<tr>
<td>Cl</td>
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<tr>
<td>H(_2)O</td>
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<td>[0.84]</td>
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<tr>
<td>(\text{O=Cl}_2)</td>
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<tr>
<td>Total</td>
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<td>100.76</td>
</tr>
</tbody>
</table>

(1) Kombat mine, Namibia; average of 15 electron microprobe analyses, \(\text{B}_2\text{O}_3\) and \(\text{H}_2\text{O}\) calculated from structural analysis; corresponding to \(\text{Pb}_{36.32}\text{O}_{19}\text{Mn}_{1.68}\text{Cl}_{13.99}(\text{BO}_3)_8\cdot 2\text{H}_2\text{O}\).

**Occurrence:** Most likely a late-stage, low-temperature hydrothermal (epigenetic) reworking of primary Pb-Cu-Zn-Ag sulfides.  Known from a single specimen purchased commercially.

**Association:** Hereroite, asisite, damaraite, kombatite, sahlinite, quartz, native copper, barysilite, hausmannite, jacobsite, manganite.

**Distribution:** From the Kombat mine, Grootfontein, Namibia.

**Name:** Honors Professor Vladimir Gerasimovich Krivovichev (b. 1946), Head of the Mineralogy Department, Geological Faculty, St. Petersburg State University, Russia.


**References:**  