Natroxalate  
\( \text{Na}_2(\text{C}_2\text{O}_4) \)  
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**Crystal Data:** Monoclinic.  
*Point Group:* 2/m.  
Crystals are elongated along [001], to 5 mm, showing \{110\}, \{001\}, \{010\}, \{100\}, \{221\}, in radiating aggregates; typically fine-grained, forming veins and nodules.  
*Twinning:* On \{110\}.

**Physical Properties:**  
*Cleavage:* On \{100\}, perfect; on \{001\} and \{221\}, distinct.  
*Fracture:* Interrupted.  
*Tenacity:* Brittle.  
*Hardness = 3*  
D(meas.) = 2.32(3)  
D(calc.) = 2.338  
Soluble in H\textsubscript{2}O.

**Optical Properties:**  
*Transparency:* Vitreous.  
*Color:* Cream to pale yellow, with pinkish or greenish tint.  
*Luster:* Vitreous.  
*Orientation:* Z = b, X \( \wedge c = 20^\circ \).*  
*Dispersion:* \( r < v \), moderate.  
\( \alpha = 1.415(2) \quad \beta = 1.524(2) \quad \gamma = 1.592(2) \quad 2V(\text{meas.}) = 72(1)^\circ \quad 2V(\text{calc.}) = 72^\circ \)

**Cell Data:**  
*Space Group:* \( P2_1/a \) (by analogy to synthetic).  
\( a = 10.426(9) \quad b = 5.255(5) \quad c = 3.479(3) \quad \beta = 93.14(8)^\circ \quad Z = 2 \)

**X-ray Powder Pattern:** Mt. Alluaiv, Kola Peninsula, Russia.  
2.826 (100), 2.602 (56), 2.334 (33), 2.898 (27), 2.041 (14), 5.203 (13), 2.117 (13)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{C}_2\text{O}_3 )</td>
<td>53.70</td>
<td>53.75</td>
</tr>
<tr>
<td>( \text{Na}_2\text{O} )</td>
<td>46.24</td>
<td>46.25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>99.94</td>
<td>100.00</td>
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</table>

(1) Mt. Alluaiv, Kola Peninsula, Russia.  
(2) \( \text{Na}_2(\text{C}_2\text{O}_4) \).

**Occurrence:** In a hydrothermally altered pegmatite in a differentiated alkalic massif.

**Association:** Aegirine, albite, elpidite, natron, nenadkevichite, taeniolite, sphalerite, pyrite, galena.

**Distribution:** From Mt. Alluaiv, Lovozero massif, Kola Peninsula, Russia.

**Name:** For sodium, *natrium*, in the composition, and as a naturally occurring oxalate.

**Type Material:** Mining Institute, St. Petersburg, 2080/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 1522.

**References:**  

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