Metadelrioite

\[
\text{CaSrV}^{5+}_2\text{O}_6(\text{OH})_2
\]

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Crystal Data: Triclinic. Point Group: \( \Gamma \) or 1. Intimately intergrown in parallel orientation with delrioite, in radial fibrous aggregates of tiny acicular crystals.

Physical Properties: Hardness = \( \sim 2 \) \( D(\text{meas.}) = 4.3 \) \( D(\text{calc.}) = 4.21 \) Readily soluble in \( \text{H}_2\text{O} \).

Optical Properties: Translucent. Color: Light yellow-green to darker green on exposed surfaces, probably the result of photoreduction of some of the vanadium. Luster: Vitreous to pearly.

Optical Class: Biaxial (−); properties composite with delrioite. Pleochroism: \( X = \) colorless; \( Y = \) pale yellow; \( Z = \) deeper yellow. Orientation: \( Z = \) elongation; extinction parallel. \( \alpha = 1.783(3) \) \( \beta = 1.834(3) \) \( \gamma = 1.866(3) \) 2V(meas.) = Medium to large.

Cell Data: Space Group: \( P\bar{1} \) or \( P1 \). \( a = 7.343(7) \) \( b = 8.382(3) \) \( c = 5.117(4) \)
\( \alpha = 111°39(2)' \) \( \beta = 90°16(5)' \) \( \gamma = 102°49(4)' \) \( Z = 2 \)

X-ray Powder Pattern: Jo Dandy mine, Colorado, USA.
4.94 (s), 3.46 (s), 4.73 (ms), 2.683 (ms), 2.547 (m), 2.516 (m), 1.885 (m)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( V_2\text{O}_5 )</td>
<td>46.6</td>
<td>50.58</td>
</tr>
<tr>
<td>( \text{CaO} )</td>
<td>13.5</td>
<td>15.59</td>
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<tr>
<td>( \text{SrO} )</td>
<td>24.8</td>
<td>28.82</td>
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<tr>
<td>( \text{H}_2\text{O}^+ )</td>
<td>5.7</td>
<td>5.01</td>
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<tr>
<td>( \text{H}_2\text{O}^- )</td>
<td>9.4</td>
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<tr>
<td>Total</td>
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<td>100.00</td>
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</tbody>
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(1) Jo Dandy mine, Colorado, USA; an estimated 1:5 mixture with delrioite, \( \text{CaSrV}_2\text{O}_6(\text{OH})_2\cdot3\text{H}_2\text{O} \), recalculated to 100% after deduction of quartz 1.30%.
(2) \( \text{CaSrV}_2\text{O}_6(\text{OH})_2 \).

Occurrence: An efflorescence on sandstone of the Salt Wash member of the Jurassic Morrison Formation associated with a U–V deposit.

Association: Delrioite, rossite, metarossite, quartz.

Distribution: From a dump at the Hummer portal of the Jo Dandy mine, Bull Canyon district, Paradox Valley, Montrose Co., Colorado, USA.

Name: For its relation to delrioite and its lesser \( \text{H}_2\text{O} \) content.
