Paraotwayite

\[ \text{Ni(OH)}_{2-x} (\text{SO}_4, \text{CO}_3)_{0.5x} (x \sim 0.6) \]

Crystal Data: Monoclinic. Point Group: n.d. Fibrous massive, parallel to sub-parallel, may be cross-vein fibrous, to 0.5 mm.

Physical Properties: Tenacity: Brittle. Hardness = n.d. VHN = 223(22) average (20 g load). D(meas.) = 3.30 D(calc.) = 3.52


Optical Class: Biaxial. Pleochroism: Weak; bluish green \( \parallel \) length; yellowish green \( \perp \) length. Orientation: Extinction parallel; length-slow. \( \alpha = 1.655 \quad \beta = \text{n.d.} \quad \gamma = 1.705 \)

2V(meas.) = n.d.

Cell Data: Space Group: n.d. \( a = 7.89(1) \quad b = 2.96(1) \quad c = 13.63(3) \quad \beta = 91.1(2)^\circ \)

\( Z = 6 \)

X-ray Powder Pattern: Otway prospect, Western Australia.

6.81 (10), 5.083 (8), 2.239 (8), 3.859 (5), 2.946 (4), 1.973 (3), 7.95 (2)

Chemistry:

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<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NiO</td>
<td>66.25</td>
</tr>
<tr>
<td>MgO</td>
<td>0.24</td>
</tr>
<tr>
<td>H_2O</td>
<td>17.42</td>
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<tr>
<td>CO_2</td>
<td>4.67</td>
</tr>
<tr>
<td>SO_3</td>
<td>11.80</td>
</tr>
<tr>
<td>Total</td>
<td>100.38</td>
</tr>
</tbody>
</table>

(1) Otway prospect, Western Australia; by electron microprobe, H_2O and CO_2 by CHN analyzer, (OH)^− calculated for charge balance; corresponds to (Ni_{0.99}Mg_{0.01})_{\Sigma=1.00}(OH)_{1.43}(SO_4)_{0.17}(CO_3)_{0.12}\cdot0.37H_2O.

Occurrence: A very rare secondary mineral in veinlets in altered ore from a hydrothermal nickel deposit in a serpentinitized peridotite.

Association: Millerite, polydymite, nickeloan chrysotile, dolomite, gaspéite.

Distribution: From the Otway prospect, near Spinnaway, Nullagine district, Western Australia.

Name: From the Greek for near, and for its similarity to otwayite.
