Falcondoite

\((\text{Ni,Mg})_4\text{Si}_6\text{O}_{15}(\text{OH})_2\cdot6\text{H}_2\text{O}\)

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Crystal Data: Orthorhombic. Point Group: n.d. As slightly schistose, friable masses of minute fibrous particles, less than 10 \(\mu\text{m}\) in length.

Physical Properties: Tenacity: Friable. Hardness = 2–3 D(meas.) = 1.9(1) D(calc.) = 2.54

Optical Properties: Transparent to translucent. Color: Whitish green. Optical Class: Biaxial. \(n = <1.55\); birefringence \(\sim0.01–0.02\). 2V(meas.) = n.d.

Cell Data: Space Group: n.d. \(a = 13.5\) \(b = 26.9\) \(c = 5.24\) \(Z = 4\)

X-ray Powder Pattern: Near Bonao, Dominican Republic.
12.2 (100), 2.58 (35), 3.33 (30), 2.62 (30), 2.44 (30), 3.19 (25), 2.39 (20)

Chemistry:

<table>
<thead>
<tr>
<th>(\text{SiO}_2)</th>
<th>(1)</th>
<th>45.93</th>
<th>49.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\text{Al}_2\text{O}_3)</td>
<td>0.39</td>
<td></td>
<td></td>
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<tr>
<td>(\text{Cr}_2\text{O}_3)</td>
<td>0.45</td>
<td></td>
<td></td>
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<tr>
<td>(\text{FeO})</td>
<td>1.99</td>
<td>&lt;0.03</td>
<td></td>
</tr>
<tr>
<td>(\text{NiO})</td>
<td>26.7</td>
<td>23.6</td>
<td></td>
</tr>
<tr>
<td>(\text{MgO})</td>
<td>8.46</td>
<td>9.26</td>
<td></td>
</tr>
<tr>
<td>LOI</td>
<td>15.0</td>
<td>[18.0]</td>
<td></td>
</tr>
</tbody>
</table>

\(\text{Si}_5\text{O}_{16}\cdot6.22\text{H}_2\text{O}\).

Total 98.92 [100.0]

(1) Near Bonao, Dominican Republic; corresponds to \((\text{Ni}_{2.66}\text{Mg}_{1.55}\text{Fe}_{0.22}\text{Al}_{0.06}\text{Cr}_{0.04})\Sigma=4.53\) \(\text{Si}_{5.71}\text{O}_{16}\cdot6.22\text{H}_2\text{O}\).

(2) Do.; average of five analyses by electron microprobe and other methods; loss on ignition by difference, taken as \(\text{H}_2\text{O}\); corresponds to \((\text{Ni}_{2.32}\text{Mg}_{1.68})\Sigma=4.69\) \(\text{Si}_6\text{O}_{16}\cdot7.30\text{H}_2\text{O}\).

Occurrence: In garnierite veins which cut an extensive laterite, associated with a serpentinized harzburgite massif (near Bonao, Dominican Republic).

Association: Sepiolite, talc, quartz (near Bonao, Dominican Republic).

Distribution: From near Bonao, Dominican Republic. In the USA, from near Glamis, Imperial Co., California.

Name: For the familiar name “Falcondo” of the company operating the mine in the Dominican Republic where the mineral was first found.

Type Material: Royal Ontario Museum, Toronto, Canada, M34324.