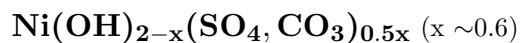


## Paraotwayite



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**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 Properties:** Semitransparent. *Color:* Emerald-green; green in transmitted light. *Streak:* White. *Luster:* Silky. *Optical Class:* Biaxial. *Pleochroism:* Weak; bluish green || length; yellowish green  $\perp$  length. *Orientation:* Extinction parallel; length-slow.  $\alpha = 1.655$   $\beta = \text{n.d.}$   $\gamma = 1.705$   $2V(\text{meas.}) = \text{n.d.}$

**Cell Data:** *Space Group:* n.d.  $a = 7.89(1)$   $b = 2.96(1)$   $c = 13.63(3)$   $\beta = 91.1(2)^\circ$   $Z = 6$

**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:

	(1)
NiO	66.25
MgO	0.24
H <sub>2</sub> O	17.42
CO <sub>2</sub>	4.67
SO <sub>3</sub>	11.80
<hr/>	
Total	100.38

(1) Otway prospect, Western Australia; by electron microprobe, H<sub>2</sub>O and CO<sub>2</sub> by CHN analyzer, (OH)<sup>1-</sup> calculated for charge balance; corresponds to (Ni<sub>0.99</sub>Mg<sub>0.01</sub>) $\Sigma=1.00$ (OH)<sub>1.43</sub>(SO<sub>4</sub>)<sub>0.17</sub>(CO<sub>3</sub>)<sub>0.12</sub>•0.37H<sub>2</sub>O.

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

**Type Material:** Western Australian Museum, Perth, M.71.1991; Museum Victoria, Melbourne, Australia, M36824; National Museum of Natural History, Washington, D.C., USA, 164243.

**References:** (1) Nickel, E.H. and J. Graham (1987) Paraotwayite, a new nickel hydroxide mineral from Western Australia. *Can. Mineral.*, 25, 409–411. (2) (1988) *Amer. Mineral.*, 73, 1496 (abs. ref. 1).