Gillardite

Crystal Data: Hexagonal. *Point Group*: 3 2/m. As aggregates of equant rhombohedral crystals to 0.5 mm.


**Cell Data:** Space Group: \(R\bar{3}\) m. \(a = 6.8364(1)\) \(c = 13.8459(4)\) \(Z = 3\)

**X-Ray Diffraction Pattern:** 123 North deposit, Widgiemooltha, Western Australia, Australia. 5.459 (100), 2.753 (69), 2.256 (39), 2.901 (19), 4.648 (16), 2.725 (14), 1.818 (13)

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>CuO</td>
<td>55.6</td>
<td></td>
</tr>
<tr>
<td>NiO</td>
<td>15.3</td>
<td></td>
</tr>
<tr>
<td>CoO</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>FeO</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Cl</td>
<td>17.3</td>
<td></td>
</tr>
<tr>
<td>H₂O</td>
<td>13.1</td>
<td></td>
</tr>
<tr>
<td>-O = Cl</td>
<td>3.9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>97.7</td>
<td></td>
</tr>
</tbody>
</table>

(1) 123 North deposit, Widgiemooltha, Western Australia, Australia; average electron microprobe analysis, \(\text{H}_2\text{O}\) by TGA; normalized corresponds to \((\text{Cu}_{3.08}\text{Ni}_{0.90}\text{Co}_{0.01}\text{Fe}_{0.01})\text{Cl}_{5.96}\).

**Polymorphism & Series:** Solid-solution series with Ni-rich paratacamite.

**Occurrence:** In silicified ferruginous gossan developed on a komatiite-hosted sulfide deposit.

**Association:** Ni-bearing clinoatacamite.

**Distribution:** 123 North deposit, 5 km north-northwest of Widgiemooltha, Western Australia, Australia.

**Name:** Honors Professor Robert David Gillard (b. 1936), formerly of the Department of Chemistry, Cardiff University, Wales, UK, for his contributions to inorganic coordination chemistry.

**Type Material:** Gartrell Collection, Department of Earth and Planetary Sciences, Western Australian Museum, Perth Cultural Centre, Perth, Australia (8774).