**Hisingerite**

\[ \text{Fe}^{3+}\text{Si}_2\text{O}_5(\text{OH})_4\cdot2\text{H}_2\text{O} \]

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**Crystal Data:** Amorphous to poorly crystalline. **Point Group:** n.d. Commonly massive, compact; may be minutely spherical.

**Physical Properties:** Fracture: Conchoidal. Tenacity: Brittle. Hardness = 2.5–3

\[ \text{D(meas.)} = 2.43–2.67 \quad \text{D(calc.)} = \text{n.d.} \]

**Optical Properties:** Transparent to translucent. Color: Black, dark brown; dark green masses may turn brown in light; in thin section, greenish brown or golden yellow. Streak: Yellowish brown. Luster: Resinous, vitreous, greasy.

**Optical Class:** Isotropic; locally anisotropic. \( n = 1.50–1.66 \)

**Cell Data:** Space Group: n.d.

**X-ray Powder Pattern:** Riddarhyttan, Sweden; easily confused with neotocite.

4.45 (s), 3.53 (s), 2.56 (s), 1.71 (s), 1.54 (s)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{SiO}_2 )</td>
<td>35.08</td>
<td>34.15</td>
</tr>
<tr>
<td>( \text{Al}_2\text{O}_3 )</td>
<td>1.38</td>
<td></td>
</tr>
<tr>
<td>( \text{Fe}_3\text{O}_3 )</td>
<td>40.28</td>
<td>45.38</td>
</tr>
<tr>
<td>( \text{FeO} )</td>
<td>2.23</td>
<td></td>
</tr>
<tr>
<td>( \text{MgO} )</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>( \text{CaO} )</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>( \text{H}_2\text{O} )</td>
<td>20.78</td>
<td>20.47</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.46</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Riddarhyttan, Sweden. (2) \( \text{Fe}_2\text{Si}_2\text{O}_5(\text{OH})_4\cdot2\text{H}_2\text{O} \).

**Occurrence:** A secondary mineral, formed from the weathering, or late-stage deuteric or hydrothermal alteration, of iron-bearing silicates or sulfides; by late-stage hydrothermal activity during sulfide ore deposition.

**Association:** Olivine, pyroxene, pyrite, chalcopyrite, pyrrhotite.

**Distribution:** In small amounts, easily overlooked, from many localities worldwide. Some for described material are: at Riddarhyttan, Västmanland, and Långban, Värmland, Sweden. From Fagul Cetatăi, Balan, Romania. At Salberg, Norway. Found near Helsingfors, Finland. From Llallagua, Bolivia. In the USA, in the Hibbing district, St. Louis Co., Minnesota; in Arizona, at the Castle Dome mine, Gila Co., and on the Mildren and Steppe claims, Cababi district, Pima Co.; at the Gap Nickel mine, Lancaster Co., Pennsylvania. In Canada, from the Wilcox mine, Parry Sound, Ontario; at the Tetrault mines, near Montauk-les-mines, Quebec; and from Goldfields, Saskatchewan. In the Kawayama mine, Yamaguchi Prefecture; the Sano mine, Wakayama Prefecture; the Suzuyama mine, Kagoshima Prefecture; and other localities in Japan.

**Name:** For the Swedish chemist and mineralogist, Vilhelm Hisinger (1766–1852).

**References:**


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