Hydroxylchondrodite  \( \text{Mg}_5(\text{SiO}_4)_2(\text{OH})_2 \)

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As coarse tabular or lens-like crystals, to 1.5 cm, and in aggregates to 2 cm. *Twining:* Thin polysynthetic on {001}.

**Physical Properties:** *Cleavage:* None; parting on {001}. *Fracture:* Uneven. *Tenacity:* Brittle. *Hardness = 6*  

D(meas.) = 3.21(1)  
D(calc.) = 3.183


\( \alpha = 1.662(3) \)  
\( \beta = 1.669(2) \)  
\( \gamma = 1.688(2) \)  
2V(meas.) = 80(10)\(^\circ\)  
2V(calc.) = 63\(^\circ\)

**Cell Data:** *Space Group:* P2\(_1\)/c.  

\( a = 7.8847(12) \)  
\( b = 4.7235(8) \)  
\( c = 10.2869(15) \)  
\( \beta = 109.19(1)^{\circ} \)  
\( Z = 2 \)

**X-ray Powder Pattern:** Chuvashskie Mountains, Zlatoust region, South Urals, Russia.  

1.740 (100), 2.260 (74), 2.518 (59), 2.621 (44), 2.763 (37), 2.673 (37), 3.023 (36)

**Chemistry:**  

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MgO</td>
<td></td>
<td>52.74</td>
</tr>
<tr>
<td>FeO</td>
<td></td>
<td>1.51</td>
</tr>
<tr>
<td>TiO(_2)</td>
<td></td>
<td>7.08</td>
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<tr>
<td>SiO(_2)</td>
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<td>34.38</td>
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<tr>
<td>P(_2)O(_5)</td>
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<td>0.47</td>
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<tr>
<td>F</td>
<td></td>
<td>1.29</td>
</tr>
<tr>
<td>H(_2)O</td>
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<tr>
<td>–O=F(_2)</td>
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<td>0.54</td>
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<tr>
<td>Total</td>
<td></td>
<td>100.41</td>
</tr>
</tbody>
</table>

(1) Chuvashskie Mountains, Zlatoust region, South Urals, Russia; average of 11 electron microprobe analyses, H\(_2\)O by the Alimarin method; corresponding to \( (\text{Mg}_{4.52}\text{Ti}_{0.31}\text{Fe}_{0.07})\Sigma=4.90(\text{Si}_{1.98}\text{P}_{0.02})\Sigma=2.00\text{O}_8 \)  

\((\text{OH})_{1.33}\text{O}_{0.44}\text{F}_{0.23})\Sigma=2.00\)  

**Mineral Group:** Humite group.

**Occurrence:** In the contact zone between magnesium skarn and marble.

**Association:** Calcite, clinohlore, dolomite, tremolite, diopside, andradite-grossular, magnetite, perovskite, hydroxylelinohumite, titanite.

**Distribution:** Perovskite pit, western slope of the Chuvashskie Mountains, Zlatoust region, South Urals, Russia.

**Name:** Reflects the mineral’s identity as the OH (hydroxyl) analogue of chondrodite.

**Type Material:** A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia (3986/1).

**References:**  

