Wattersite  

\[ \text{Hg}^{1+}\text{Hg}^{2+}\text{Cr}^{6+}\text{O}_6 \]

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**Crystal Data:** Monoclinic.  *Point Group:* 2/m.  As crystals, prismatic, elongated along [001], with \{110\}, \{010\}, \{310\}, \{130\}, \{021\}, and many more forms, to 2 mm; in aggregates, shell-like or granular massive.  *Twinning:* About [001], contact twins on \{100\}, ubiquitous.

**Physical Properties:**  *Fracture:* Conchoidal.  *Tenacity:* Brittle.  *Hardness = < 5*
* D(meas.) = n.d.  \( D(\text{calc.}) = 8.91 \)


*Cell Data:*  *Space Group:* C2/c.  \( a = 11.274(2) \)  \( b = 11.669(2) \)  \( c = 6.603(1) \)  \( \beta = 98.19(2)^\circ \)  \( Z = 4 \)

*X-ray Powder Pattern:* Near the Clear Creek mine, California, USA.
2.655 (100), 8.06 (80), 3.300 (60), 3.260 (60), 5.58 (50), 3.60 (50), 2.948 (50)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
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</thead>
<tbody>
<tr>
<td>( \text{CrO}_3 )</td>
<td>8.7</td>
<td>8.69</td>
</tr>
<tr>
<td>( \text{HgO} )</td>
<td>18.7</td>
<td>18.82</td>
</tr>
<tr>
<td>( \text{Hg}_4\text{O} )</td>
<td>72.1</td>
<td>72.49</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>99.5</td>
<td>100.00</td>
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</table>

(1) Near the Clear Creek mine, California, USA; by electron microprobe, \( \text{Hg}^{1+}\text{Hg}^{2+}\text{Cr}^{6+}\text{O}_6 \) from crystal-structure analysis; corresponds to \( \text{Hg}_{5.98}\text{Hg}_{0.02}\text{Cr}^{6+}\text{O}_6 \).  (2) \( \text{Hg}^{1+}\text{Hg}^{2+}\text{Cr}^{6+}\text{O}_6 \).

**Occurrence:**  A rare mineral in a mercury deposit in silicate–carbonate rock hydrothermally altered from serpentinite.

**Association:**  Cinnabar, mercury.

**Distribution:**  From a prospect near the Clear Creek mercury mine, New Idria district, San Benito Co., California, USA.

**Name:**  Honors Lu Watters (1911–1989), American mineral collector, musician, and environmentalist, specializing in the mineralogy of the California Coast Ranges.

**Type Material:**  Canadian Geological Survey, Ottawa, Canada, 65141; National Museum of Natural History, Washington, D.C., USA, 165271.


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