**Girdite**  

\[ \text{H}_2\text{Pb}_3(\text{Te}^{4+}\text{O}_3)(\text{Te}^{6+}\text{O}_6) \]

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**Crystal Data:** Monoclinic.  
**Point Group:** \( m \) (?). As dense spherules, to 6 mm, also as bow-tie aggregates of tapered prismatic crystals.  
**Twinning:** Complex twins noted.

**Physical Properties:**  
**Tenacity:** Brittle in aggregates.  
**Hardness = 2**  
**D(meas.) = 5.5(2)**  
**D(calc.) = 5.49**

**Optical Properties:**  
**Transparent to translucent.**  
**Color:** White.  
**Luster:** Chalky in aggregates.  
**Optical Class:** Biaxial \((-\).**  
**Orientation:** \( Z = b; \ Y = c = 34^\circ \).  
**Dispersion:** \( r > v \), strong.  
\( \alpha = 2.44 \quad \beta = 2.47 \quad \gamma = 2.48 \)  
**2V(meas.) = 70^\circ**

**Cell Data:**  
**Space Group:** n.d.  
**\( a = 6.241 \quad b = 5.686 \quad c = 8.719 \quad \beta = 91^\circ41' \quad Z = 1 \)**

**X-ray Powder Pattern:**  
Grand Central mine, Arizona, USA.  
3.054 (10), 2.842 (8), 1.765 (8), 3.118 (7), 2.994 (7), 2.102 (7), 1.682 (7)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TeO(_3)</td>
<td>18.3</td>
<td>17.17</td>
</tr>
<tr>
<td>TeO(_2)</td>
<td>16.6</td>
<td>15.60</td>
</tr>
<tr>
<td>PbO</td>
<td>61.4</td>
<td>65.47</td>
</tr>
<tr>
<td>H(_2)O</td>
<td>2.0</td>
<td>1.76</td>
</tr>
<tr>
<td>insol.</td>
<td>0.7</td>
<td></td>
</tr>
</tbody>
</table>

Total 99.0 100.00

(1) Grand Central mine, Arizona, USA; \( \text{H}_2\text{O} \) by the Penfield method on a separate sample; corresponds to \( \text{H}_2\text{Pb}_2(\text{Te}^{4+}\text{O}_3)_{1.0}(\text{Te}^{6+}\text{O}_6)_{1.0} \).  
(2) \( \text{H}_2\text{Pb}_3(\text{Te}^{4+}\text{O}_3)(\text{Te}^{6+}\text{O}_6) \).

**Occurrence:** Very rare, coating fractures in oxidized tellurite and tellurate ores.

**Association:** Chlorargyrite, quartz.

**Distribution:** From the dumps of the Grand Central mine, Tombstone, Cochise Co., Arizona, USA.

**Name:** Honors Richard Gird (1836–1910), mining engineer and assayer, a discoverer of the Tombstone district, Arizona, USA.


**References:**  