**Stottite**

\[ \text{Fe}^{2+}\text{Ge}^{4+}(\text{OH})_6 \]

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**Crystal Data:** Tetragonal, pseudocubic. **Point Group:** 4/m. Crystals are tetragonal dipyramidal, pseudo-octahedral, with dominant \{111\}, modified by \{100\}, \{110\}, \{101\}, \{102\}, \{001\}, and others, to 1 cm.

**Physical Properties:** Cleavage: \{100\}, \{010\}, good; \{001\}, poor. Hardness = 4.5

\[ D(\text{meas.}) = 3.596 \quad D(\text{calc.}) = 3.54 \]

**Optical Properties:** Transparent to translucent. **Color:** Brown, green, orange, red; in transmitted light, orange-brown, may be zoned with light olive-gray to nearly colorless centers. **Streak:** Grayish white. **Luster:** Resinous to adamantine, greasy on cleavages.

**Optical Class:** Uniaxial (−); anomalously biaxial. **Dispersion:** \( r > v \). \( \omega = 1.737–1.738 \)

\[ 2V(\text{meas.}) = \text{Small} \]

**Cell Data:** **Space Group:** \( P4_2/n \). \( a = 7.594(4) \quad c = 7.488(6) \quad Z = 4 \)

**X-ray Powder Pattern:** Tsumeb, Namibia.

3.767 (vs), 2.655 (s), 1.687 (ms), 2.171 (m), 1.886 (m), 1.672 (m), 1.538 (m)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{GeO}_2</td>
<td>41.75</td>
<td>45.38</td>
</tr>
<tr>
<td>\text{FeO}</td>
<td>34.81</td>
<td>31.17</td>
</tr>
<tr>
<td>\text{MnO}</td>
<td>0.88</td>
<td></td>
</tr>
<tr>
<td>\text{MgO}</td>
<td>0.46</td>
<td></td>
</tr>
<tr>
<td>\text{CaO}</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>\text{H}_2\text{O}</td>
<td>21.84</td>
<td>23.45</td>
</tr>
</tbody>
</table>

Total 100.08 100.00

(1) Tsumeb, Namibia; corresponds to \((\text{Fe}^{2+}_{1.15}\text{Mg}_{0.03}\text{Mn}_{0.03}\text{Ca}_{0.01})_Σ=1.22\text{Ge}^{4+}_{0.95}(\text{OH})_6\).

(2) \text{FeGe(OH)}_6.

**Mineral Group:** Stottite group.

**Occurrence:** A rare secondary mineral formed in an oxidized zone of a germanium-rich dolostone-hosted hydrothermal polymetallic ore deposit.

**Association:** Tennantite, germanite, reniérite, chalcocite, leiteite, schneiderhöhnite, brunogérite, siderite.

**Distribution:** From Tsumeb, Namibia.

**Name:** To honor Charles E. Stott (1896–1978), geologist and formerly General Director of the Tsumeb mine, Tsumeb, Namibia.

**Type Material:** Technical University, Berlin, Germany; National School of Mines, Paris, France; Harvard University, Cambridge, Massachusetts, USA, 111460.


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