**Wesselsite**  \( \text{SrCuSi}_4\text{O}_{10} \)

**Crystal Data:** Tetragonal.  \( \text{Point Group: } 4/m\ 2/m\ 2/m \).  As plates, to 50 \( \mu \text{m} \), typically in clusters to 200 \( \mu \text{m} \).

**Physical Properties:**  *Cleavage:* Perfect on \{001\}.  *Fracture:* n.d.  *Tenacity:* Brittle.  
Hardness = n.d.  \( D(\text{meas.}) = 3.2(1) \)  \( D(\text{calc.}) = 3.32 \)

**Optical Properties:**  *Translucent.*  *Color:* Blue.  *Streak:* White to light blue.  *Luster:* n.d.  *Optical Class:* Uniaxial (-).  \( \omega = 1.630(2) \)  \( \epsilon = 1.590(5) \)  *Pleochroism:* Strong, blue to pale blue to pink.

**Cell Data:**  *Space Group:* \( P4/ncc \).  \( a = 7.374(1) \)  \( c = 15.636(2) \)  \( Z = 4 \)

**X-ray Powder Pattern:**  Wessels mine, Northern Cape Province, South Africa.  
3.33 (100), 3.12 (55), 3.03 (50), 3.44 (40), 7.79 (35), 2.61 (30), 2.32 (30)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SrO</td>
<td>24.0</td>
<td>24.47</td>
</tr>
<tr>
<td>CuO</td>
<td>18.8</td>
<td>18.78</td>
</tr>
<tr>
<td>SiO(_2)</td>
<td>56.9</td>
<td>56.75</td>
</tr>
<tr>
<td>Total</td>
<td>99.7</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Wessels mine, Northern Cape Province, South Africa; electron microprobe analysis, corresponds to \( \text{Sr}_{0.98}\text{Cu}_{1.00}\text{Si}_{4.01}\text{O}_{10} \).  (2) \( \text{SrCuSi}_4\text{O}_{10} \).  (3) Wessels mine, Northern Cape Province, South Africa; electron microprobe analysis of crystal used for structure determination, no analysis given; corresponds to \( \text{Sr}_{0.90}\text{Ba}_{0.10}\text{Cu}_{1.00}\text{Si}_{4.00}\text{O}_{10} \).

**Polymorphism & Series:** Forms a solid solution series with effenbergerite.

**Mineral Group:** Gillespite group.

**Occurrence:** In a hydrothermally-altered sedimentary manganese deposit.

**Association:** Hennomartinite, sugulite, pectolite, xonotlite, quartz.

**Distribution:** From the central-eastern ore body of the Wessels mine, Kalahari Manganese Field, Northern Cape Province, South Africa.

**Name:** Named for the Wessels mine, South Africa, where the first specimens were collected.

**Type Material:** Institute for Mineralogy and Crystallography, University of Vienna, Austria (8H/01.055#1).