**Creaseyite**

\[ \text{Pb}_2\text{Cu}_2\text{Fe}^{3+}_2\text{Si}_5\text{O}_{17}\cdot6\text{H}_2\text{O} \]

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**Crystal Data:** Orthorhombic.  
**Point Group:** \([2/m \ 2/m \ 2/m \text{ or } \text{mm}2.]\) Fibrous crystals, elongated along {001} and flattened on {010}, to 0.5 mm. As densely packed spherules of crystals; in masses of matted and tangled fibers.

**Physical Properties:**  
**Cleavage:** Poor on {010}.  
**Hardness:** 2.5 for spherules, greater for crystals.  
**D(meas.)** = 4.1(1)  
**D(calc.)** = 4.01

**Optical Properties:** Transparent to translucent.  
**Color:** Pale green to yellow-green; yellow in thin section.  
**Streak:** Light green.  
**Optical Class:** Biaxial (+).  
**Pleochroism:**  
\[ \text{X} = \text{yellow-green}; \text{Y} = \text{green}; \text{Z} = \text{yellow-green}. \]

**Orientation:**  
\[ \text{X} = a; \text{Y} = b; \text{Z} = c. \]

**Absorption:**  
\[ \text{Z} = \text{X} > \text{Y}. \]

**Cell Data:**  
**Space Group:** \(m\text{mm}C\eta\) [diffraction symbol].  
\[ a = 12.483\text{–}12.497 \]
\[ b = 21.375\text{–}21.395 \]
\[ c = 7.283 \]
\[ Z = 4 \]

**X-ray Powder Pattern:**  
Tiger, Arizona, USA.  
10.726 (100), 6.024 (50), 4.067 (50), 3.555 (50b), 3.013 (50), 2.982 (50), 2.696 (50)

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiO₂</td>
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<td>25.5</td>
<td>25.59</td>
</tr>
<tr>
<td>Fe₂O₃</td>
<td></td>
<td>12.3</td>
<td>13.61</td>
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<tr>
<td>Al₂O₃</td>
<td></td>
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<tr>
<td>CuO</td>
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<td>ZnO</td>
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<tr>
<td>PbO</td>
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<tr>
<td>H₂O</td>
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<td>8.8</td>
<td>9.21</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td>100.4</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Tiger, Arizona, USA; average of several microchemical analyses, corresponding to \(\text{Pb}_{1.98}\)  
\((\text{Cu}_{2.02}\text{Zn}_0.18\Sigma=2.20\text{Fe}^{3+}_{1.85}\text{Al}_0.05\Sigma=1.90\text{Si}_{5.08}\text{O}_{17.18}\cdot5.85\text{H}_2\text{O})\).  
(2) \(\text{Pb}_2\text{Cu}_2\text{Fe}_3\text{Si}_5\text{O}_{17}\cdot6\text{H}_2\text{O}\).

**Occurrence:** In the oxidized zone of a base-metal deposit, in andesite breccia loosely cemented with iron oxides and wulfenite (Tiger, Arizona, USA).

**Association:** Mimetite, diopside, fluorite, willemite, wulfenite, descliozite, murdochite (Tiger, Arizona, USA); ajoite, fluorite (Potter-Cramer property, Arizona, USA).

**Distribution:** In the USA, in Arizona, from the Mammoth-St. Anthony mine, Tiger, Pinal Co., at the Potter-Cramer property and Tonopah-Belmont mine, near Wickenburg, Maricopa Co., from near Artillery Peak, Mohave Co., and in the the Copper Point prospect, Pima Co.; from near Gold Point, Esmeralda Co., Nevada. In Mexico, at Caborca and Munihuaza, near Alamos, Sonora. In the Cruz del Sur mine, Rio Negro Province, Argentina.

**Name:** To honor Dr. Saville Cyrus Creasey (1917–), economic geologist, U.S. Geological Survey, expert on Arizona mineral deposits.

**Type Material:**  

**References:**  
(1) Williams, S.A. and R.A. Bideaux (1975) Creaseyite, \(\text{Cu}_n\text{Pb}_2(\text{Fe, Al})_2\text{Si}_5\text{O}_{17}\cdot6\text{H}_2\text{O}\). Mineral. Mag., 40, 227–231.  