**Sharpite**

\[ \text{Ca(UO}_2\text{)}_6\text{(CO}_3\text{)}_5\text{(OH)}_4\cdot6\text{H}_2\text{O} \]

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**Crystal Data:** Orthorhombic.  
**Point Group:** n.d.  
Very fine needlelike crystals, to 5 mm, in subparallel aggregates, typically flat radial fibrous; may be in crusts.

**Physical Properties:**  
Hardness = 2.5–3  
\( D(\text{meas.}) = > 4.45 \)  
\( D(\text{calc.}) = 4.61 \)  
Radioactive.

**Optical Properties:**  
Semitransparent.  
**Color:** Greenish yellow, olive-green, pale green, pale gray; pale yellow in transmitted light.  
**Optical Class:** Biaxial (+)  
**Pleochroism:** Slight; \( X = Y = \) pale brown, very pale yellow-green; \( Z = \) pale yellow-green.  
**Orientation:** \( Y \perp \) laths; \( Z \parallel \) elongation; positive elongation, parallel extinction.  
\( \alpha = 1.632–1.638 \)  
\( \beta = \) close to \( \alpha \)  
\( \gamma = 1.720–1.722 \)  
\( 2V(\text{meas.}) = \) n.d.

**Cell Data:**  
**Space Group:** n.d.  
\( a = 21.99(2) \)  
\( b = 15.63(2) \)  
\( c = 4.87(4) \)  
\( Z = 2 \)

**X-ray Powder Pattern:** Shinkolobwe, Congo.  
4.497 (100), 3.910 (48), 7.82 (40), 5.34 (35), 2.996 (33), 11.02 (30), 6.37 (28)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{UO}_3 )</td>
<td>81.04</td>
<td>80.33</td>
</tr>
<tr>
<td>( \text{CO}_2 )</td>
<td>10.30</td>
<td>10.30</td>
</tr>
<tr>
<td>( \text{CaO} )</td>
<td>2.70</td>
<td>2.62</td>
</tr>
<tr>
<td>( \text{H}_2\text{O} )</td>
<td>6.81</td>
<td>6.75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.85</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

(1) Shinkolobwe, Congo; contained insoluble cobalt oxide 1.6%: \( (\text{CO}_3)^{2-}, \text{H}_2\text{O} \) confirmed by IR, TGA; corresponds to \( \text{Ca}_{1.02}(\text{UO}_2)_{6.01}(\text{CO}_3)_{4.96}(\text{OH})_{4.14}\cdot5.95\text{H}_2\text{O} \).  
(2) \( \text{Ca(UO}_2\text{)}_6(\text{CO}_3\text{)}_5(\text{OH})_4\cdot6\text{H}_2\text{O} \).

**Occurrence:** A very rare secondary mineral formed in the oxide zone of hydrothermal uranium deposits.

**Association:** Uranophane, becquerelite, schoepite, curite, masuyite, vandenbrandeite, ianthinite, uraninite.

**Distribution:** From Shinkolobwe, Katanga Province, Congo (Shaba Province, Zaire). In France, at Kruth, Haut-Rhin, and in the Brugaud mine, near Bessines, Haute-Vienne.

**Name:** To honor Major Robert Richard Sharp (1881–1956), English engineer and prospector who discovered the Shinkolobwe deposit, Congo.

**Type Material:** University of Liège, Liège, Belgium, 6280, 16905.

**References:**  