Sharpite  \( \text{Ca(UO}_2\text{)}_6(\text{CO}_3\text{)}_5(\text{OH})_4\cdot 6\text{H}_2\text{O} \)

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(meas.) = > 4.45  D(calc.) = 4.61  Radioactive.

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.  \( a = 21.99(2) \)  \( b = 15.63(2) \)  \( c = 4.487(4) \)  \( Z = 2 \)

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:

\[
\begin{array}{lll}
\text{Chemistry:} & (1) & (2) \\
\text{UO}_3 & 81.04 & 80.33 \\
\text{CO}_2 & 10.30 & 10.30 \\
\text{CaO} & 2.70 & 2.62 \\
\text{H}_2\text{O} & 6.81 & 6.75 \\
\hline
\text{Total} & 100.85 & 100.00
\end{array}
\]

(1) Shinkolobwe, Congo; contained insoluble cobalt oxide 1.6%; \( \text{(CO}_3\text{)}^{2-} \), \( \text{H}_2\text{O} \) confirmed by IR, TGA; corresponds to \( \text{Ca}\text{,02(UO}_2\text{)}_6\text{(CO}_3\text{)}_{4.96(\text{OH})}_{4.14}\cdot 5.95\text{H}_2\text{O} \). (2) \( \text{Ca(UO}_2\text{)}_6(\text{CO}_3\text{)}_5(\text{OH})_4\cdot 6\text{H}_2\text{O} \).

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 Brigueaud 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 Liége, Liége, Belgium, 6280, 16905.