Metavandendriesscheite \( \text{Pb}_{7}\text{O}_{22} \cdot n\text{H}_{2}\text{O} \) \( n < 12 \)

Crystal Data: Orthorhombic. Point Group: \([2/m 2/m 2/m] \text{ or } mm2\] (by analogy to vandendriesscheite). A very fine-grained alteration product, intergrown in parallel and threaded with minute tubes, within vandendriesscheite crystals.

Physical Properties: Hardness = n.d. \( \text{D} \text{(meas.)} = 5.45 \) \( \text{D} \text{(calc.)} = [5.71–5.79] \) Alters from vandendriesscheite by dehydration.

Optical Properties: Transparent. Color: [Amber-yellow, yellowish orange to orange] (by analogy to vandendriesscheite).

Optical Class: Biaxial (−) (optics given here are for vandendriesscheite). Pleochroism: \( X = \) nearly colorless; \( Y = Z = \) yellow-orange to golden yellow. Orientation: \( X = c; Y = b; Z = a. \) Dispersion: \( r > v, \) strong. \( \alpha = 1.780(5) \) \( \beta = 1.850(10) \) \( \gamma = 1.860(10) \) \( 2V \text{(meas.)} = 60(2)^o \)

Cell Data: Space Group: \([Pmna, P2_1ma, \text{ or } Pm2a]\] (by analogy to vandendriesscheite). \( a = 14.07(30) \) \( b = 41.31(30) \) \( c = 43.33(30) \) \( Z = 35 \)

X-ray Powder Pattern: Shinkolobwe, Congo; pattern here identical to vandendriesscheite with which it is inextricably intergrown.

Chemistry: An analysis of pure metavandendriesscheite has not been made; its hydration is variable, less than vandendriesscheite, from which it alters by dehydration.

Occurrence: In the oxidized zone of a uranium-bearing mineral deposit.

Association: Vandendriesscheite, fourmarierite, becquerelite, metatorbernite, rutherfordine, uraninite.

Distribution: From Shinkolobwe, Katanga Province, Congo (Shaba Province, Zaire). Presumably other vandendriesscheite localities are likewise localities for metavandendriesscheite.

Name: As a dehydration product of vandendriesscheite.

Type Material: Harvard University, Cambridge, Massachusetts, USA, 106523.