Metavanmeersscheite  
\[ \text{U(OU}_2\text{)}_3\text{(PO}_4\text{)}_2\text{(OH)}_6\cdot\text{2H}_2\text{O} \]

Crystal Data:  Orthorhombic.  Point Group:  \(2/m 2/m 2/m\).  As tabular crystals, flattened on \{010\} and elongated along \{001\}, modified by \{T01\}, \{100\}, to 0.4 mm; usually in divergent groups.


Optical Properties:  Semitransparent.  Color: Canary-yellow.  Optical Class: Biaxial (−).  Pleochroism: Weak; yellow to pale yellow.  \(\alpha = \sim 1.67\)  \(\beta = \sim 1.68\)  \(\gamma = \sim 1.69\)  2V(meas.) = \(\sim 83^\circ\)

Cell Data:  Space Group: \(Fddd\).  \(a = 34.18\)  \(b = 33.88\)  \(c = 14.074\)  \(Z = 32\)

X-ray Powder Pattern:  Kobokobo pegmatite, Congo.  
\(8.49\) (100), \(6.01\) (90), \(3.073\) (70), \(2.886\) (60), \(5.38\) (50), \(4.23\) (50), \(3.516\) (50)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
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<tbody>
<tr>
<td>(\text{UO}_3)</td>
<td>83.24</td>
<td>83.14</td>
</tr>
<tr>
<td>(\text{P}_2\text{O}_5)</td>
<td>10.20</td>
<td>10.31</td>
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<tr>
<td>(\text{H}_2\text{O})</td>
<td>[6.56]</td>
<td>6.55</td>
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<tr>
<td>Total</td>
<td>[100.00]</td>
<td>100.00</td>
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</tbody>
</table>

(1) Kobokobo pegmatite, Congo; by electron microprobe, average of five analyses, \(\text{H}_2\text{O}\) by difference; corresponds to \(\text{U(OU}_2\text{)}_3\text{(PO}_4\text{)}_2\text{(OH)}_6\cdot\text{2H}_2\text{O}\).

(2) \(\text{U(OU}_2\text{)}_3\text{(PO}_4\text{)}_2\text{(OH)}_6\cdot\text{2H}_2\text{O}\).

Occurrence:  A rare secondary mineral in the uraniferous zone of an altered granite pegmatite, formed by dehydration of vanmeersscheite.

Association:  Vanmeersscheite, studtite.

Distribution:  From the Kobokobo pegmatite, Lusungu River district, Kivu Province, Congo (Zaire).

Name:  The prefix \textit{meta} indicates the dehydration product of \textit{vanmeersscheite}.

Type Material:  University of Liège, Liège, F360; Royal Museum of Central Africa, Tervuren, Belgium, RMG13749.

References:  (1) Piret, P. and M. Deliens (1982) La vanmeersscheite \(\text{U(OU}_2\text{)}_3\text{(PO}_4\text{)}_2\text{(OH)}_6\cdot\text{2H}_2\text{O}\), et la \textit{meta}-vanmeersscheite \(\text{U(OU}_2\text{)}_3\text{(PO}_4\text{)}_2\text{(OH)}_6\cdot\text{2H}_2\text{O}\), nouveaux minéraux. Bull. Minéral., 105, 125–128 (in French with English abs.).  (2) (1982) Amer. Mineral., 67, 1077 (abs. ref. 1).