Meurigite-Na  
\[\text{Na(H}_2\text{O)}_{2.5}]\text{[Fe}^{3+}\text{s(PO}_4\text{)}_6\text{(OH)}_\gamma\text{(H}_2\text{O)}_\delta]\]

Crystal Data: Monoclinic. *Point Group*: 2/m. As radial sprays of longitudinally striated laths, flattened on \{001\} and elongated along [010] to 0.4 mm.


Optical Class: *Biaxial* (-). \(\alpha = 1.740(3)\)  \(\beta = 1.759(3)\)  \(\gamma = 1.763(3)\)  2V(meas.) = 50(10)°  2V(calc.) = 49°

Orientation: *X* \(\cong c\), *Z* = *b*. *Nonpleochroic.*

Cell Data: *Space Group*: C2/c. \(a = 28.835(2)\)  \(b = 5.1848(4)\)  \(c = 19.4841\)  \(\beta = 106.983(6)°\)  \(Z = 4\)

X-ray Powder Pattern: Silver Coin mine, Valmy, Iron Point district, Nevada, USA. 9.35 (100), 3.206 (40), 3.107 (30), 13.8 (20), 4.843 (20), 2.971 (15), 2.593 (15)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(1)</th>
<th>(2)</th>
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<tbody>
<tr>
<td>(\text{P}_2\text{O}_5)</td>
<td>32.48</td>
<td>33.38</td>
<td>CuO</td>
<td>0.27</td>
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<tr>
<td>(\text{CaO})</td>
<td>0.21</td>
<td></td>
<td>(\text{Na}_2\text{O})</td>
<td>2.13 2.43</td>
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<tr>
<td>(\text{MgO})</td>
<td>0.03</td>
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<td>(\text{K}_2\text{O})</td>
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<tr>
<td>(\text{Al}_2\text{O}_3)</td>
<td>5.36</td>
<td></td>
<td>(\text{H}_2\text{O})</td>
<td>[16.14] 14.12</td>
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<tr>
<td>(\text{Fe}_2\text{O}_3)</td>
<td>42.14</td>
<td>50.07</td>
<td>Total</td>
<td>100.00 100.00</td>
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<tr>
<td>(\text{V}_2\text{O}_5)</td>
<td>0.92</td>
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</tbody>
</table>

(1) Silver Coin mine, Valmy, Iron Point district, Nevada, USA; average electron microprobe analysis, \(\text{H}_2\text{O}\) by difference, \(\text{H}_2\text{O}\) for charge balance without direct evidence; corresponding to \([\text{Na}_{0.86}\text{K}_{0.09}\text{Ca}_{0.05}\text{(H}_2\text{O)}_{1.90}\text{(H}_2\text{O)}^\gamma]\text{[Fe}^{3+}\text{s}_{6.63}\text{Al}_{1.32}\text{Cu}_{0.04}\text{Mg}_{0.01}\text{(P}_{0.96}\text{V}_{0.04}\text{O}_4\text{)}_6\text{(OH)}_\gamma\text{(H}_2\text{O)}_\delta]\).

(2) \([\text{Na(H}_2\text{O)}_{2.5}]\text{[Fe}^{3+}\text{s}_{8}\text{(PO}_4\text{)}_6\text{(OH)}_\gamma\text{(H}_2\text{O)}_\delta]\).

Occurrence: A late-stage, low-temperature, secondary mineral in complex phosphate assemblages rich in \(\text{Fe}^{3+}\) and \(\text{Na}\).

Association: Turquoise, intergrown kidwellite/lipscombite, crandallite, goethite.

Distribution: Silver Coin mine, Valmy, Iron Point district, Nevada, USA [TL]. In Australia, at Tom’s quarry and Moculta quarry in South Australia, Lake Boga quarry and probably Rixon’s Sandstone quarry in Victoria. At an unnamed pegmatite prospect near Linopolis, Minas Gerais, Brazil.


Type Material: Natural History Museum of Los Angeles County, Los Angeles, California, USA (57659 and 57660).