Nasledovite $\text{PbMn}_3^{2+}\text{Al}_4\text{O}_5(\text{CO}_3)_4(\text{SO}_4)\cdot5\text{H}_2\text{O}$


Physical Properties:  Hardness = 2  D(meas.) = 3.069  D(calc.) = n.d.

Optical Class: Biaxial (?).  Orientation: $Z\wedge c = 2^\circ$–$23^\circ$, wavy extinction.  $\alpha$ = n.d.  $\beta$ = n.d.  $\gamma$ = 1.591  $2V$(meas.) = n.d.


X-ray Powder Pattern:  Sardob deposit, Tajikistan.
3.261 (10), 2.028 (6), 2.019 (6), 1.462 (6), 2.853 (5), 2.983 (4), 1.749 (4)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{SO}_3$</td>
<td>4.76</td>
<td>8.12</td>
</tr>
<tr>
<td>$\text{CO}_2$</td>
<td>19.08</td>
<td>17.85</td>
</tr>
<tr>
<td>$\text{Al}_2\text{O}_3$</td>
<td>20.40</td>
<td>20.68</td>
</tr>
<tr>
<td>$\text{Fe}_2\text{O}_3$</td>
<td>1.39</td>
<td></td>
</tr>
<tr>
<td>$\text{MnO}$</td>
<td>15.46</td>
<td>21.58</td>
</tr>
<tr>
<td>$\text{ZnO}$</td>
<td>0.76</td>
<td></td>
</tr>
<tr>
<td>$\text{PbO}$</td>
<td>24.35</td>
<td>22.64</td>
</tr>
<tr>
<td>$\text{MgO}$</td>
<td>3.68</td>
<td></td>
</tr>
<tr>
<td>$\text{H}_2\text{O}$</td>
<td>10.12</td>
<td>9.13</td>
</tr>
<tr>
<td>Total</td>
<td>[100.00]</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Sardob deposit, Tajikistan; recalculated to 100% after deduction of SiO$_2$ 1.58%, MnO$_2$ 2.04%, and H$_2$O$^-$ 0.60 % from an original total of 100.84%; then corresponds to $\text{Pb}_{1.03}(\text{Mn}_{2.05}\text{Mg}_{0.87}\text{Zn}_{0.08})\Sigma_{3.99}(\text{Al}_{1.77}\text{Fe}_{0.17})\Sigma_{3.94}(\text{CO}_3)_{4.08}(\text{SO}_4)_{0.56}\text{O}_{5.30}\cdot5.27\text{H}_2\text{O}$.  (2) $\text{PbMn}_3\text{Al}_4\text{O}_5(\text{CO}_3)_4(\text{SO}_4)\cdot5\text{H}_2\text{O}$.

Occurrence: A rare fracture filling in oxidized granodiorite porphyry which also hosts polymetallic ores.

Association: Pyrolusite, iron oxide, cerussite.

Distribution: From the Sardob deposit, eastern Altyn-Topkan district, Kuramin Mountains, northern Tajikistan. [??ck not Chatkal-Kuramin Mountains, Uzbekistan??]

Name: To honor Professor Boris Nikolaevich Nasledov (1885–1942), geologist, for his investigations of the mineral resources of the Chatkal-Kuramin region, Kyrgyzstan-Uzbekistan.

Type Material: n.d.