Natroniobite

Crystal Data: Monoclinic, probable.  
Point Group: n.d.  
As irregular grains and in fine-grained aggregates.

Physical Properties:  
Hardness = 5.5–6  
D(meas.) = 4.40  
D(calc.) = n.d.

Optical Properties:  
Semitransparent.  
Color: Pale yellowish, pale brown, pale black.  
Optical Class: Biaxial (−).  
Dispersion: r < v, strong.  
α = 2.10–2.13  
β = 2.19–2.21  
γ = 2.21–2.24  
2V(meas.) = 10°–30°

Cell Data:  
Space Group: n.d.  
Z = n.d.

X-ray Powder Pattern:  
Kola Peninsula, Russia.  
2.97 (10), 3.06 (9), 1.60 (8), 1.72 (6), 1.89 (5), 3.79 (4), 1.59 (4)

Chemistry:  

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(1)</th>
<th>(2)</th>
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</thead>
<tbody>
<tr>
<td>Nb₂O₅</td>
<td>74.06</td>
<td>81.09</td>
<td>Fe₂O₃</td>
<td>1.35</td>
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<tr>
<td>Ta₂O₅</td>
<td>0.83</td>
<td></td>
<td>MnO</td>
<td>0.05</td>
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<tr>
<td>SiO₂</td>
<td>0.97</td>
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<td>MgO</td>
<td>0.35</td>
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<td>TiO₂</td>
<td>5.56</td>
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<td>CaO</td>
<td>2.80</td>
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<td>ThO₂</td>
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<td>Na₂O</td>
<td>9.08</td>
<td>18.91</td>
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<td>Al₂O₃</td>
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<td>F</td>
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<td>RE₂O₃</td>
<td>3.25</td>
<td>H₂O</td>
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<td>Total</td>
<td>99.73</td>
<td>100.00</td>
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</tbody>
</table>

(1) Kola Peninsula, Russia.  
(2) NaNbO₃.

Polymorphism & Series:  
Dimorphous with isolueshite and lueshite.

Occurrence:  
Replacing perovskite and pyrochlore in dolomite carbonatites.

Association:  
Dolomite, apatite, phlogopite, perovskite, pyrochlore.

Distribution:  
From the Lesnaya Varaka massif, Kola Peninsula, Russia.  
In the Sallanlatvi massif, northern Karelia, Russia.  
At Gem Park, about six km east of Hillside, Fremont Co., Colorado, USA.

Name:  
For sodium, NATRium, and NIOBium in the composition.

Type Material:  
Mineralogical Museum, St. Petersburg University, St. Petersburg, Russia, 17401.

References:  
(1) Bulakh, A.G., A.A. Kukharenko, Y.N. Knipovich, V.V. Kondrat’eva, K.A. Baklanova, and E.N. Baranova (1960) Some new minerals in carbonatites of the Kola Peninsula.  