Olympite

LiNa$_5$(PO$_4$)$_2$

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Crystal Data:  Orthorhombic.  Point Group:  222.  Oval grains, to 5 mm.

VHN = 274–395, 310 average (40–50 g load).  D(meas.) = 2.8  D(calc.) = 2.85  Easily soluble in cold H$_2$O; decomposes rapidly in air.

Optical Properties:  Translucent.  Color:  Colorless.  Luster:  Vitreous.  Optical Class:  Biaxial (+).  $\alpha = 1.510(2)$  $\beta = 1.510(2)$  $\gamma = 1.512(2)$  $2V$(meas.) = 46(1)$^\circ$

Cell Data:  Space Group:  $P2_12_12_1$.  $a = 10.124(2)$  $b = 14.794(2)$  $c = 10.132(3)$  Z = 8

X-ray Powder Pattern:  Mt. Rasvumchorr, Kola Peninsula, Russia.
2.582 (10), 4.18 (9), 2.531 (7), 2.433 (7), 1.472 (7), 3.58 (6), 3.70 (5)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P$_2$O$_5$</td>
<td>42.50</td>
<td>45.52</td>
</tr>
<tr>
<td>CO$_2$</td>
<td>2.30</td>
<td></td>
</tr>
<tr>
<td>MnO</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Li$_2$O</td>
<td>n.d.</td>
<td>4.79</td>
</tr>
<tr>
<td>Na$_2$O</td>
<td>54.50</td>
<td>49.69</td>
</tr>
<tr>
<td>Total</td>
<td>99.80</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Mt. Rasvumchorr, Kola Peninsula, Russia; MnO and CO$_2$ attributed to sidorenkite impurity.
(2) LiNa$_5$(PO$_4$)$_2$.

Occurrence:  An ultra-alkaline phase in nepheline syenite pegmatites in differentiated alkaline massifs.

Association:  Sidorenkite, dorfmanite, nalpoite, villiaumite, shafranovskite, aegirine (Mt. Rasvumchorr, Kola Peninsula, Russia); natrite, natrosilite (Lovozero massif, Kola Peninsula, Russia).

Distribution:  On Mt. Rasvumchorr, Khibiny massif, and in the Lovozero massif, Kola Peninsula, Russia.

Name:  For the 1980 Summer Olympic Games, in Moscow, USSR.

Type Material:  Geology Museum, Kola Branch, Academy of Sciences, Apatity, 5533; Mining Institute, St. Petersburg, 1208/1; I.M.G.R.E., Moscow; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 80180.