Krasnovite

Ba(Al\textsubscript{0.88}Mg\textsubscript{0.13}Fe\textsubscript{0.01})\textsubscript{Σ=1.02}(PO\textsubscript{4})\textsubscript{0.87}(CO\textsubscript{3})\textsubscript{0.25}\textsubscript{Σ=1.12}(OH)\textsubscript{1.85}\cdot0.90\textsubscript{H}\textsubscript{2}O

Crystalline Data: Orthorhombic. Point Group: 2\textsubscript{m} 2\textsubscript{m} 2\textsubscript{m}. Fibers, elongated along [010], in spherulites, to 3 mm.

Physical Properties: Cleavage: Two || [010], perfect. Fracture: Fibrous. Hardness = 2
D(meas.) = 3.70(5)  D(calc.) = 3.69


Cell Data: Space Group: Pnnn or Pnna. a = 8.939(2)  b = 5.669(3)  c = 11.073(3)

X-ray Powder Pattern: Kovdor massif, Russia.
2.768 (100), 3.479 (82), 5.54 (79), 2.543 (61), 3.345 (59), 2.072 (41), 2.354 (32)

Chemistry:

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>P\textsubscript{2}O\textsubscript{5}</td>
<td>19.8</td>
<td></td>
</tr>
<tr>
<td>CO\textsubscript{2}</td>
<td>[3.55]</td>
<td></td>
</tr>
<tr>
<td>Al\textsubscript{2}O\textsubscript{3}</td>
<td>14.3</td>
<td></td>
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<tr>
<td>FeO</td>
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<tr>
<td>MgO</td>
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<tr>
<td>SrO</td>
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<tr>
<td>BaO</td>
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</tr>
<tr>
<td>K\textsubscript{2}O</td>
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</tr>
<tr>
<td>H\textsubscript{2}O</td>
<td>10.5</td>
<td></td>
</tr>
</tbody>
</table>

Total [100.00]

(1) Kovdor massif, Russia; by electron microprobe, average of three analyses; total Fe as FeO,
confirmed by microchemical tests; H\textsubscript{2}O by the Penfield method; CO\textsubscript{2} by difference, confirmed
by IR; corresponds to (Ba\textsubscript{1.06}Sr\textsubscript{0.02})\textsubscript{Σ=1.02}(Al\textsubscript{0.88}Mg\textsubscript{0.13}Fe\textsubscript{0.01})\textsubscript{Σ=1.12}(PO\textsubscript{4})\textsubscript{0.87}(CO\textsubscript{3})\textsubscript{0.25}\textsubscript{Σ=1.12}(OH)\textsubscript{1.85}\cdot0.90\textsubscript{H}\textsubscript{2}O.

Occurrence: A very rare mineral from an iron ore deposit in a carbonatized ultramafic-alkaline intrusive.

Association: Dolomite, manasselite, carbonate-apatite, crandallite, barite.

Distribution: From the Iron mine, Kovdor massif, Kola Peninsula, Russia.

Name: Honoring Natal’ya Ivanovna Krasnova (1941– ), mineralogist and specialist on the
Kovdor massif, St. Petersburg University, St. Petersburg, Russia, in whose collection the first
specimen was found.

Type Material: Mining Institute, St. Petersburg, Russia, 2044/1.


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