Bastnäsite-(La)  

\((\text{La, Ce})(\text{CO}_3)\text{F}\)

\(\odot 2001-2005\ \text{Mineral Data Publishing, version 1}\)

**Crystal Data:** [Hexagonal.] [by analogy to bastnäsite-(Ce)].  
*Point Group:* \(6\overline{2}c\). Fine-grained massive.

**Physical Properties:**  
Hardness = [4–4.5]  
D(meas.) = n.d.  
D(calc.) = n.d.

**Optical Properties:**  
Semitransparent.  
*Color:* Dark brown.  
*Optical Class:* Uniaxial (+).  
\(\omega = \text{n.d.}\)  
\(\epsilon = \text{n.d.}\)

**Cell Data:**  
*Space Group:* [\(\text{P}\overline{6}2c\)] [by analogy to bastnäsite-(Ce)].  
\(a = \text{n.d.}\)  
\(c = \text{n.d.}\)  
\(Z = \text{n.d.}\)

**X-ray Powder Pattern:** Probably nearly identical to bastnäsite-(Ce).

**Chemistry:**

<table>
<thead>
<tr>
<th>Comp.</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\text{CO}_3)</td>
<td>n.d.</td>
<td>20.14</td>
</tr>
<tr>
<td>(\text{La}_2\text{O}_3)</td>
<td>55.04</td>
<td>37.28</td>
</tr>
<tr>
<td>(\text{Ce}_2\text{O}_3)</td>
<td>n.d.</td>
<td>37.55</td>
</tr>
<tr>
<td>(\text{Pr}_2\text{O}_3)</td>
<td>4.35</td>
<td></td>
</tr>
<tr>
<td>(\text{Nd}_2\text{O}_3)</td>
<td>11.49</td>
<td></td>
</tr>
<tr>
<td>(\text{Sm}_2\text{O}_3)</td>
<td>n.d.</td>
<td></td>
</tr>
<tr>
<td>(\text{CaO})</td>
<td>1.72</td>
<td></td>
</tr>
<tr>
<td>(\text{H}_2\text{O})</td>
<td>n.d.</td>
<td></td>
</tr>
<tr>
<td>(\text{F})</td>
<td>n.d.</td>
<td>8.69</td>
</tr>
<tr>
<td>(\ominus\text{O=F})</td>
<td>n.d.</td>
<td>3.66</td>
</tr>
<tr>
<td>Total</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>

(1) Belaya Zima deposit, Russia; analysis not given but stated to correspond to \((\text{La}_{0.44}\text{Ce}_{0.41}\text{Nd}_{0.14})\Sigma=0.99(\text{CO}_3)\text{F}\).  
(2) Near Odegi, Nigeria; partial analysis by electron microprobe, corresponding to \((\text{La}_{0.71}\text{Nd}_{0.14}\text{Ca}_{0.09}\text{Pr}_{0.06})\Sigma=1.00(\text{CO}_3)\text{F}\).  
(3) \((\text{La, Ce})(\text{CO}_3)\text{F}\) with \(\text{La}:\text{Ce} = 1:1\).

**Occurrence:** In late ankerite carbonatites (Belaya Zima deposit, Russia).

**Association:** Fluocerite, cerianite-(Ce) (near Odegi, Nigeria).

**Distribution:** From the Belaya Zima RE–Nb deposit, eastern Sayan, Siberia, Russia. Found near Odegi, Afu Hills, Nigeria.

**Name:** For its relation to bastnäsite-(Ce) and dominant lanthanum in its composition.

**Type Material:** n.d.

**References:**  