Håleniusite-(La)  

**Crystal Data:** Isometric.  
**Point Group:** $4/m eta 2/m$. As powdery coatings.

**Physical Properties:**  
*Cleavage:* n.d.  
*Fracture:* n.d.  
*Tenacity:* n.d.  
*Hardness:* = n.d.  
*D*(meas.) = n.d.  
*D*(calc.) = 6.5  
Non-fluorescent in SW UV and LW UV.

**Optical Properties:** Translucent.  
*Color:* Yellow.  
*Streak:* n.d.  
*Luster:* [Earthy].  
*Optical Class:* n.d.; probably isotropic.  
$n$(calc) $\approx$ 1.9

**Cell Data:**  
*Space Group:* $Fm3m$.  
*a* = 5.6282(5)  
*Z* = 4

**X-ray Powder Pattern:** Bastnäs deposit, Sweden.  
3.25 (100), 1.991 (61), 1.6969 (46), 2.815 (31), 1.292 (15), 1.1486 (12), 1.6246 (9)

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Formula</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>La$_2$O$_3$</td>
<td>39.29</td>
<td></td>
</tr>
<tr>
<td>Ce$_2$O$_3$</td>
<td>39.00</td>
<td></td>
</tr>
<tr>
<td>Pr$_2$O$_3$</td>
<td>4.06</td>
<td></td>
</tr>
<tr>
<td>Nd$_2$O$_3$</td>
<td>7.60</td>
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</tr>
<tr>
<td>Sm$_2$O$_3$</td>
<td>0.28</td>
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<tr>
<td>Gd$_2$O$_3$</td>
<td>0.27</td>
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<tr>
<td>Y$_2$O$_3$</td>
<td>0.08</td>
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<tr>
<td>SiO$_2$</td>
<td>0.38</td>
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</tr>
<tr>
<td>CaO</td>
<td>0.02</td>
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<tr>
<td>F</td>
<td>11.70</td>
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</tr>
<tr>
<td>-O = F</td>
<td>4.93</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>97.75</td>
<td></td>
</tr>
</tbody>
</table>

(1) Bastnäs deposit, Sweden; electron microprobe and EDS analyses, IR spectroscopy confirms absence of OH$^-$ and CO$_3^{2-}$; corresponding to (La$_{0.431}$Ce$_{0.425}$Nd$_{0.082}$Pr$_{0.044}$Sm$_{0.003}$Gd$_{0.003}$Y$_{0.001}$Ca$_{0.001}$)$_2$La$_{1.001}$F$_{1.10}$O$_{0.95}$.

**Occurrence:** Formed by alteration of primary bastnäsite-(La), most likely by a decarbonation reaction.

**Association:** Ferriallanite-(Ce), bastnäsite-(La), quartz.

**Distribution:** At the Bastnäs deposit, Skinnskatteberg District, Västmanland County, Sweden.

**Name:** Honors Professor Ulf Hålenius (b.1951), head of the Department of Mineralogy, Swedish Museum of Natural History, for his contributions to mineral sciences.

**Type Material:** Swedish Museum of Natural History, Stockholm, Sweden; (no. 20030025).

**References:**  
(2) (2005) Amer. Mineral., 90, 769 (abs. ref. 1).