Levyne  
(Ca,Na₂,K₂)Al₂Si₄O₁₂•6H₂O

Crystal Data: Hexagonal.  
Point Group: 3 2/m.  
Crystals are thin tabular  \{0001\}, with faces typically striated and \{0001\} rounded, to 3 cm; in sheaflike or confused aggregates.  
Twinning: Penetration twins on \{0001\} ubiquitous.

Physical Properties:  
Cleavage: \{10\overline{1}1\}, indistinct.  
Fracture: Subconchoidal to uneven.  
Tenacity: Brittle.  
Hardness = 4–4.5  
D(meas.) = 2.09–2.16  
D(calc.) = 2.121

Optical Properties:  
Transparent to translucent.  
Color: Colorless, white; stained grayish, greenish, reddish, yellowish by impurities; colorless in thin section.  
Streak: White.  
Luster: Vitreous.  
Optical Class: Uniaxial (−); may be biaxial (−).  
\(\omega = 1.496–1.505\)  
\(\epsilon = 1.491–1.500\)

Cell Data:  
Space Group: R\(\overline{3}m\).  
\(a = 13.388(4)\)  
\(c = 23.014(9)\)  
\(Z = 3\)

X-ray Powder Pattern:  
Beech Creek, Oregon, USA.  
4.084 (100), 2.805 (60), 6.69 (24), 8.15 (20), 3.854 (18), 3.156 (17), 3.338 (16)

Chemistry:  
<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiO₂</td>
<td>46.76</td>
<td>43.88</td>
<td>49.76</td>
</tr>
<tr>
<td>Al₂O₃</td>
<td>21.91</td>
<td>22.73</td>
<td>19.09</td>
</tr>
<tr>
<td>CaO</td>
<td>11.12</td>
<td>10.57</td>
<td>8.88</td>
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<tr>
<td>Na₂O</td>
<td>1.34</td>
<td>2.01</td>
<td>1.71</td>
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<tr>
<td>K₂O</td>
<td>0.21</td>
<td>0.80</td>
<td>1.05</td>
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<tr>
<td>H₂O⁺</td>
<td>14.87</td>
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<tr>
<td>H₂O⁻</td>
<td>5.67</td>
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<tr>
<td>H₂O</td>
<td>18.65</td>
<td>19.51</td>
<td></td>
</tr>
</tbody>
</table>

Total 99.99 100.53 100.00

(1) Table Mountain, Colorado, USA.  
(2) Kunig, Oki Islands, Japan; corresponds to \((\text{Ca}_{0.96}\text{Na}_{0.33}\text{K}_{0.69})\Sigma=1.38\text{Al}_{2.27}\text{Si}_{3.72}\text{O}_{12}•5.8\text{H}_{2}\text{O}\).  
(3) Near Monresta, Sardinia, Italy; by electron microprobe, H₂O by TGA; corresponding to \((\text{Ca}_{0.79}\text{Na}_{0.27}\text{K}_{0.11})\Sigma=1.17\text{Al}_{1.86}\text{Si}_{4.12}\text{O}_{12}•5.38\text{H}_{2}\text{O}\).

Mineral Group: Zeolite group.

Occurrence: Typically as a crystalline lining in cavities in basalts.

Association: Zeolites, especially offretite and erionite.

Distribution: Numerous localities, even for fine specimens. From near Dalsnipa, on Sandoy; Rossafell and Nesvik, on Streymoy; and elsewhere on the Faeroe Islands. In Iceland, many localities, as at Mjöóadalss Canyon; Onundarfjord; Dyrafjord; around Berufjord, etc. In the USA, at Table Mountain, Jefferson Co., Colorado; from Spray, Wheeler Co., Beech Creek, Grant Co., and Goble, Colombia Co., Oregon. In Ireland, from Dungiven, Magilligan, and elsewhere in Co. Londonderry; and on Island Magee and in the Parkgate quarry, Templepatrick, Co. Antrim. From Cinchwad, Poona district, Maharashtra, India. Found at Flinders and on Victoria Island, Victoria, Australia.

Name: After Armand Lévy (1794–1841), French mineralogist and crystallographer.

References:  
(1) Dana, E.S. (1892) Dana’s system of mineralogy, (6th edition), 595.  

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