Letovicite  

$\text{H(NH}_4\text{)}_3(\text{SO}_4\text{)}_2$

Crystal Data: Triclinic, pseudohexagonal. Point Group: $\mathbb{T}$ or $1$. Crystals are platy, pseudohexagonal, flattened on $\{001\}$, corroded or skeletal, to 0.05 mm; typically granular. Twinning: Common, lamellar.


Optical Properties: Transparent. Color: Colorless, white. Optical Class: Biaxial (−). Orientation: $Z = b$; $X \wedge c = 78^\circ$. $\alpha = 1.501 \quad \beta = 1.516 \quad \gamma = 1.525 \quad 2V(\text{meas.}) = 75^\circ$

Cell Data: Space Group: $P\overline{1}$ or $P1$ (synthetic). $a = 5.87(1) \quad b = 10.17(3) \quad c = 8.27(1) \quad \alpha = 101.1(4)^\circ \quad \beta = 111.1(1)^\circ \quad \gamma = 89.9(2)^\circ \quad Z = 2$

X-ray Powder Pattern: Synthetic. 4.95 (100), 4.98 (85), 3.77 (80), 3.39 (75), 2.932 (50), 3.36 (45), 4.65 (35)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
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</thead>
<tbody>
<tr>
<td>$\text{SO}_3$</td>
<td>63.92</td>
<td>64.76</td>
</tr>
<tr>
<td>$(\text{NH}_4)_2\text{O}$</td>
<td>20.19</td>
<td>20.67</td>
</tr>
<tr>
<td>$\text{H}_2\text{O}$</td>
<td>[15.89]</td>
<td>14.57</td>
</tr>
<tr>
<td>Total</td>
<td>[100.00]</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Kladno, Czech Republic. (2) $\text{H(NH}_4\text{)}_3(\text{SO}_4\text{)}_2$.

Occurrence: A rare secondary mineral, formed from burning coal (Czech Republic); deposited from hot springs (The Geysers, California, USA).

Association: Sulfur (Letovice, Czech Republic); mascagnite, boussingaultite (The Geysers, California, USA).

Distribution: In the Czech Republic, from Píščená, near Letovice; at Libušín, near Kladno; and from Radvanice. At Ormosbány, Hungary. Found at The Geysers, Sonoma Co., California, USA.

Name: For Letovice, Czech Republic, the locality first noted for the mineral.

Type Material: Moravian Museum, Brno, Czech Republic, A6110.