**Meta-alunogen**

**Al₂(SO₄)₃·14H₂O**

**Crystal Data:** Orthorhombic (synthetic). *Point Group:* n.d. Typically, in fibrous tangled masses of prismatic to platy submillimeter crystals and efflorescences, or crackled massive, altered from alunogen.

**Physical Properties:** *Cleavage:* Perfect on {010}. Hardness = n.d. *D(meas.)* = n.d. *D(calc.)* = [2.85]


**Cell Data:** *Space Group:* n.d. a = 12.25 b = 13.95 c = 15.95 Z = 4

**X-ray Powder Pattern:** Synthetic.  
4.071 (100), 12.20 (26), 6.114 (11), 3.860 (9), 4.208 (7), 3.990 (5), 3.024 (4)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
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<tbody>
<tr>
<td>SO₃</td>
<td>41.04</td>
<td>40.41</td>
</tr>
<tr>
<td>Al₂O₃</td>
<td>17.33</td>
<td>17.15</td>
</tr>
<tr>
<td>H₂O</td>
<td>41.44</td>
<td>42.44</td>
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<tr>
<td>Total</td>
<td>99.81</td>
<td>100.00</td>
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</tbody>
</table>

(1) Francisco de Vergara, Chile.  
(2) Al₂(SO₄)₃·14H₂O.

**Occurrence:** An uncommon mineral formed by dehydration of alunogen; found in sulfate-rich hydrothermal deposits and geothermal fields.

**Association:** Alunogen, pickeringite, halotrichite, mirabilite, kalinite, gypsum.

**Distribution:** From alum mines 3.5 km south of Francisco de Vergara, Antofagasta, Chile. In Ruatapu Cave and within the Te Kopia geothermal field, Taupo Volcanic Zone, New Zealand.

**Name:** For *meta*, indicating a lower hydrate, and *alunogen*.

**Type Material:** n.d.