### Crystal Data:
Orthorhombic. *Point Group:* $2/m 2/m 2/m$. As tabular to prismatic crystals, elongated along [001], showing {001}, {010}, {110}, {101}, {111}, to 5 cm.

### Physical Properties:
*Cleavage:* {110}, good; {001}, fair. *Tenacity:* Brittle. 
Hardness = 4–4.5  
P(meas.) = 2.38–2.45  
P(calc.) = [2.44]  
Decomposed by $\text{H}_2\text{O}$.

### Optical Properties:
Transparent. *Color:* Colorless, may be pale red from included iron oxide; colorless in transmitted light.  
*Optical Class:* Biaxial (-).  
*Orientation:* X = c; Y = b; Z = a.  
$\alpha = 1.522$–$1.527$  
$\beta = 1.536$–$1.540$  
$\gamma = 1.544$–$1.552$  
$2V(\text{meas.}) = 70^\circ$–$88^\circ$

### Cell Data:
*Space Group:* $Pnma$.  
$a = 10.132(1)$  
$b = 12.537(1)$  
$c = 7.775(1)$  
Z = 4

### X-ray Powder Pattern:
Inder deposit, Kazakhstan. (ICDD 14-639).  
3.47 (100), 3.09 (100), 2.050 (100), 3.13 (80), 2.973 (70), 5.55 (40), 4.40 (40)

### Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{SO}_3$</td>
<td>22.46</td>
<td>22.08</td>
</tr>
<tr>
<td>$\text{B}_2\text{O}_3$</td>
<td>19.79</td>
<td>19.20</td>
</tr>
<tr>
<td>$\text{Fe}_2\text{O}_3$</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td>$\text{MgO}$</td>
<td>33.48</td>
<td>33.34</td>
</tr>
<tr>
<td>$\text{F}$</td>
<td>n.d.</td>
<td>5.24</td>
</tr>
<tr>
<td>$\text{H}_2\text{O}$</td>
<td>23.53</td>
<td>22.35</td>
</tr>
<tr>
<td>insol.</td>
<td>0.32</td>
<td></td>
</tr>
</tbody>
</table>

$-\text{O} = \text{F}_2 = 2.21$  
Total 99.69 100.00

(1) Westeregeln, Germany. (2) $\text{Mg}_3\text{B}_2(\text{SO}_4)(\text{OH})_9\text{F}$.

### Occurrence:
An uncommon mineral in marine salt deposits.

### Association:
Carnallite, anhydrite, boracite, celestine, kieserite (Westeregeln, Germany); polyhalite, kaliborite, aphthitalite, carnallite, preobrazhenskite (Inder deposit, Kazakhstan).

### Distribution:
In Germany, from near Westeregeln, Saxony-Anhalt, and at the Wittmar potash mine, Asse, southwest of Braunschweig, Lower Saxony. At Forden, near Scarborough, Yorkshire, England. From the Inder borate deposit, Kazakhstan.

### Name:
In allusion to *sulfur* and *boron* in the composition.

### References: