



## MATERIAL SAFETY DATA SHEET

### COMPANY DETAILS

<b>COMPANY:</b>	<i>ULEX S.A.</i>
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### IDENTIFICATION

<b>MATERIAL TYPE</b>	Calcium borate
<b>NAME</b>	Colemanite
<b>CRISTALINE SYSTEM</b>	Monoclinic
<b>CHEMICAL FORMULA</b>	$2 \text{CaO} \cdot 3\text{B}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$
<b>MOLECULAR WEIGHT</b>	410,87 gr./mol
<b>THEORIC CHEMICAL COMPOSITION</b>	50,80% $\text{B}_2\text{O}_3$ (boric acid) 27,30% CaO (calcium oxid) 21,90% $\text{H}_2\text{O}$ (water of composition)
<b>SPECIFIC WEIGHT</b>	2,96
<b>HARDNESS MOHS</b>	3,5

## **DELIVERED MATERIAL CHARACTERISTICS**

**ASPECT** Dust, greysh white

**SPECIFIC WEIGHT** 2,4 MT/m<sup>3</sup>

**APPARENT DENSITY** 1 MT/m<sup>3</sup>

### **THERMIC PROPERTIES**

Temperature C°	Loss of weight
20-100	1,41 %
101-320	0,61 %
321-365	0,81 %
366-390	2,92 %
391-440	6,95 %
441-620	<u>5,24 %</u>
Total	17,94 %

**FLATNESS POINT** 720°C

**FUSION POINT** 900°C

## **CHEMICAL COMPOSITION**

B<sub>2</sub>O<sub>3</sub> 40,5 %

CaO 22,0 %

SO<sub>4</sub> 00,8 %

As<sub>2</sub>O<sub>3</sub> 400 ppm

Fe<sub>2</sub>O<sub>3</sub> 0,45 %

Cl 0,0025 %

**SIZE** 98 % passish mesh 100

**MOISTURE** 1,5 %

## **REACTIVITY:**

Very little soluble in water. Soluble in acids. Detailed under warning lossing water of hidratation.

### **PRECAUTIONS FOR USE:**

For thick granulometric parts, superior to 1 mm. the material may produce, by abrasion, some dust. So that it is advisable to wear mask and protection glasses when the moving of mineral is performed.

### **OTHER INFORMATION**

It is not inflammable, it is not combustible, it doesn't need ventilation.

Somehow abrasive. Little corrosive.

It is unknown data of toxic effects of the Colemanite.

Only there exists data of toxicity of sodium borates, boric acid and boro oxid.

In this case such compounds are considered moderately toxic.

Information obtained of "AIR POLLUTION ASPECTS OF BORON AND ITS COMPOUNDS", National Air Pollution Control Administration. Norman L. Durocher. Set. 1969.