



MATERIAL SAFETY DATA SHEET

COMPANY DETAILS

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

MATERIAL TYPE	Calcium and magnesium borate
NAME	Hydroboracite
CRISTALINE SYSTEM	Monoclinic
CHEMICAL FORMULA	CaO MgO 3B ₂ O ₃ 6H ₂ O
MOLECULAR WEIGHT	413,2 gr./mol
THEORIC CHEMICAL COMPOSITION	50,54% B ₂ O ₃ (boric acid) 9,75% MgO (magnesium oxid) 13,55% CaO (calcium oxid) 26,13% H ₂ O (water of composition)
SPECIFIC WEIGHT	2,17
HARDNESS MOHS	2

DELIVERED MATERIAL CHARACTERISTICS

ASPECT	Solid white greysh granular, Size 2 mm to 4 mm	
SPECIFIC WEIGHT	2,1 MT/m ³	
APPARENT DENSITY	1 MT/m ³	
GRANULOMETRIC	The material has been classified between 2 mm to 4 mm	
Fraction higger than	1 %	
Fraction between 2 mm to 4 mm	90 %	
Fraction lower than 1 mm max.	9 %	
THERMIC PROPERTIES	As when it begin to get warmer it losses its water of composition, such it is shown as follows	
TEMPERATURE C°	LOSS OF WATER OF COMPOSITION	
	% PARTIAL	%ACUMULATIVE
110 to 210	4,5	4,5
211 to 280	19,1	23,6
281 to 390	33,6	57,2
391 to 910	42,8	100
FLATNESS POINT	720°C	
FUSION POINT	900°C	

CHEMICAL COMPOSITION

B ₂ O ₃ (boric anhidric)	37 %
CaO (calcium oxid)	14,6 %
MgO (magnesium oxid)	6,0 %
Na ₂ O (sodium oxid)	0,4 %
SO ₄ (sulfates)	2,7 %
SiO ₂ (silice)	12,3 %
As ₂ O ₃ (arsenic oxid)	500 ppm
MOISTURE	2 %

The values correspond to % in weight on dry basis

REACTIVITY:

Very little soluble in water. Soluble in acids..

PRECAUTIONS FOR USE

The material contains litter powder but it is warned to wear a protection mask and glasses when the movement of the material is performed.

OTHER INFORMATION

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

Medium abrasive. Little corrosive.

It is unknown data of toxic effects of the Hydroboracite.

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.