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# MSDS

Material Safety Data Sheet

October 2000

## MYCROBOR<sup>®</sup>

### PRODUCTION COMPANY IDENTIFICATION:

**AGENOR S.A.**  
Calle Lateral Este N° 660 A  
Parque Industrial de Salta  
4400 - Salta

### I. PRODUCT IDENTIFICATION

DISODIUM OCTOBORATE TETRAHYDRATE

### II. COMPOSITION INFORMATION ON INGREDIENTS:

SUBSTANCE & FORMULA	CAS N°	ENEICS N°
DISODIUM OCTOBORATE TETRAHYDRATE Na <sub>2</sub> B <sub>8</sub> O <sub>13</sub> .4H <sub>2</sub> O	12280-03-4 OR 12008-41-2	2345410

RISK PHRASES: NON HAZARDOUS, NON FLAMMABLE, NON TOXIC.

### III. HAZARD IDENTIFICATION:

#### 3.1 HEALTH RISKS:

- It is not absorbed via unbroken skin and does not cause irritation to unbroken skin;
- In the powdered state is moderately irritating to the eyes;
- May cause slight coughing and sneezing;
- The product presents modest acute toxicity: if it is accidentally ingested in quantities larger than 2-3 gr it can cause gastrointestinal upsets.

### 3.2 MEANS OF EXPOSURE:

Ingestion, inhalation, direct contact (via unbroken skin).

### 3.3 DANGEROUS SYMPTOMS AND EFFECTS:

Ingestion can cause: nausea, vomiting, diarrhoea and delayed effects of skin reddening.

## IV. FIRST AID MEASURES

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- 4.1 EYE CONTACT: Immediately wash with abundant water.
- 4.2 SKIN CONTACT: Wash with water, the product is not irritant.
- 4.3 INHALATION: No specific treatment as the product not presents risk by inhalation.
- 4.4 INGESTION: Drink large quantity of water or milk.
- 4.5 If the symptoms persist, call a doctor.
- 4.6 INFORMATION FOR THE DOCTOR: None in particular

## V. FIRE-FIGHTING MEASURES

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- 5.1 FIRE: The product is not flammable, combustible and explosive, and it is used as a flame retardant.
- 5.2 FIRE FIGHTING PROCEDURES/ESTINGUISH MEANS: Do not use water directly on material to avoid damaging the product and polluting environment.
- 5.3 ESTINGUISH MEANS THAT MUST NOT TO BE USED: No restriction in case the product is involved in a fire.
- 5.4 FIRE DERIVED RISKS: Not applicable.
- 5.5 FIRE FIGHTING EQUIPMENT: Not applicable.

## VI. ACCIDENTAL RELEASE MEASURES

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- 6.1 PERSONAL PRECAUTIONS: In case of excessive exposure to dust, use dustproof goggles and respiratory mask.
- 6.2 ENVIRONMENTAL PRECAUTIONS: Circumscribe the area to avoid contamination of water courses and water sources.
- 6.3 METHODS OF DECONTAMINATION: Remove and collect dust into a suitable container for disposal. Flush residue with water, taking the appropriate precautions against pollution.

## VII. HANDLING AND STORAGE

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- 7.1 HANDLING: Avoid dispersion of product into the atmosphere. Handle the product in a well-ventilated and well-aerated areas; if necessary use aspirating and ventilating means to maintain a powder concentration in air within the correct limits of exposure.
- 7.2 STORAGE: Keep the product away from strong reducing agents. Keep containers hermetically closed and stored in dry and well ventilated areas.
- 7.3 PACKAGING: Paper, polyethylene or PVC.
- 7.4 SANITARY MEASURES: Wash hand scrupulously after handling material before eating, drinking and smoking.

## VIII. EXPOSURE CONTROL/PERSONAL PROTECTION

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- 8.1 PROTECTIVE MEASURES: Avoid the formation of dust keeping the floors cleaned. Keep dust concentration in air below exposure limits. If the exposure limits are exceeded use personal protective equipments.
- 8.2 PERSONAL PROTECTIONS:
- EYE: Safety goggles in case of prolonged and high exposure to dust.
- SKIN: Ordinary working clothes.
- HANDS: Wash hands after contact.
- RESPIRATORY: Any dust mask in case of prolonged and high exposure to dust.
- 8.3 EXPOSURE LIMITS: TLV-TWA: 5 mg/m<sup>3</sup>
- 8.4 CHECKING PROCEDURES: Measurement of dust in air.

## IX. PHYSICAL AND CHEMICAL PROPERTIES

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- 9.1 PHYSICAL STATE: White powder
- 9.2 ODOUR: Odourless
- 9.3 PH VALUE at 25 deg. C.: Concentration 10 g/l = 8.5  
Concentration 100 g/l = 7.6
- 9.4 SOLUBILITY:
- IN WATER 20 deg C. = 148 g/l H<sub>2</sub>O  
60 deg C. = 421 g/l H<sub>2</sub>O
- Soluble in Ethylene Glycol, Glycerine, Alcohol (slight solubility)
- 9.5 BOILING POINT: Not applicable
- 9.6 FUSION POINT: (Anhydrous salt) 816 deg C.
- 9.7 FLAMMABILITY POINT: Not applicable

- 9.8 AUTOCOMBUSTION: Not applicable
- 9.9 EXPLOSIVE PROPERTIES: Not applicable
- 9.10 COMBURENT PROPERTIES: Not applicable
- 9.11 VAPOUR PRESSURE: Not applicable

## **X. STABILITY AND REACTIVITY**

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- 10.1 STABILITY: Stable under normal conditions. It gradually loses its own water of cristallisation when heated.
- 10.2 CONDITION TO AVOID: None
- 10.3 MATERIALS TO AVOID: In reaction with strong reducing agents such as metallic hydrides, alkaline metals, acetic anhydride develops hydrogen which could provoke an explosion.
- 10.4 DANGEROUS PRODUCTS OF DECOMPOSITION: None

## **XI TOXICOLOGICAL INFORMATION**

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- 11.1 MEANS OF EXPOSURE: Ingestion, inhalation, contact via unbroken skin.
- 11.2 CORROSIVENESS/IRRITANT: Lightly irritant effects to eyes and the primary respiratory tract.
- 11.3 ACUTE TOXICITY: DL50 (oral) > 2000 mg of product / kg (rat)
- 11.4 CHRONIC EFFECTS: Very rarely chronic poisoning provoke digestive problems and skin lesions.
- 11.5 SENSITISING PROPERTIES: None
- 11.6 CARCINOGENESES: None
- 11.7 MUTAGENESIS: None
- 11.8 REPRODUCTIVE STUDIES INCLUDING TERATOGENESIS: Large doses ingested can provoke atrophy in the male reproductive organs as a result in studies on the animals.

## **XII. ECOLOGICAL INFORMATION**

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- 12.1 LEGISLATION  
Local law. In Italy in according with the following regulations:
- L. 319/76 Regulation for the protection of waters from the effects of pollution and successive modifications and insertions.

Limits for the final disposal of waste water: Boron = 2 mg/l  
Limits for disposal at sea: Boron = 10 mg/l

D.P.R. 203/88 Enactment of ECC directives n. 80/779, 82/884, 84/360, 85/203.

D.P.R. 915/82 Enactment of ECC directives n. 75/442, 76/403, 78/319.  
Classification: special waste (residue derived from industrial processing).

## 12.2 TOXICOLOGICAL STUDIES:

FITOTOXICITY: Boron is a microelement which contributing to the plants growth, but it is dangerous to use it in high concentrations.

AQUATIC TOXICITY:

LC50:	27 mg B/lt/4 days in fresh water (TROUT)
LC50:	54 mg B/lt/4 days in hard water (TROUT)
LC50:	155 mg B/lt/4 days in fresh water (CATFISH)
LC50:	71 mg B/lt/4 days in hard water (CATFISH)
LC50:	65 mg B/lt/4 days in fresh water (GOLDFISH)
LC50:	59 mg B/lt/4 days in hard water (GOLDFISH)

B: Boron is the element which characterizes product ecological effects.

12.3 REACTION IN CONTACT WITH SOIL: The product is easily absorbed by the soil.

## XIII. DISPOSAL CONSIDERATION

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13.1 DISPOSAL OF PRODUCT: Provide, where it is possible, for the recovery of the product; otherwise disposing the material in according with the legal requirements.

13.2 DISPOSAL OF PACKAGING: Special waste to be taken to authorized disposal.

## XIV. TRANSPORT INFORMATION

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14.1 There are not specific requirements under national or international regulations for the transportation by sea, road, rail or air.

## XV. REGULATORY INFORMATION

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15.1 LABELLING in conformity with EEC directive 67/548 and successive adjustments.

Classification: not dangerous  
Risk phrases: none  
Precaution: none

15.2 Specific measures to be taken: none

## **XVI. ADDITIONAL INFORMATIONS**

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| 16.1 | TRAINING INDICATIONS:                 | None specifically  |
| 16.2 | RECOMMENDATIONS FOR USE/RESTRICTIONS: | None specifically  |
| 16.3 | SANITARY:                             | Any clinical checks is advisable in accordance with risks. |
| 16.4 | OBLIGATORY INSURANCE:                 | In according with local laws                               |
| 16.5 | BIBLIOGRAPHY:                         |  |
- A.D.R.: European agreement relative to international transport of goods by road, Geneva 30.09.1957
- THE MERCK INDEX: Merck & Co. Inc.
- DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS:  
N. Irvin Sax - Eight Edition
- C.E.E.: Packing and labelling of dangerous substances (EEC/67/548) and successive adjustments)
- OCCUPATIONAL HEALTH GUIDLINES FOR CHEMICAL HAZARDS: NIOSH/OSHA
- TOXIC AND HAZARDOUS INDUSTRIAL CHEMICAL SAFETY MANUAL FOR HANDLING AND DISPOSAL WITH TOXICITY AND HAZARD DATA:  
It - The International technical information institute Tokyo
- SILVER PLATTER - CHEM BANK:  
Databank of potentially hazardous chemicals.