



## MATERIAL SAFETY DATA SHEET

(According to 91/155/EEC)

This SDS is composed of N 4 pages.

### 1.1 Product name

BENTOSUND 120 E

### 1.2 Contact

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## 2. Composition

This product is commonly known as Bentonite, a high specific surface mineral based on natural occurring clay of the Smectite family, of which the main mineralogical component is the Montmorillonite. Montmorillonite is a hydrated aluminium silicate, in which some of the aluminium and silicium atoms are replaced by other atoms such as magnesium and iron.

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This substitution is responsible for a certain residual negative charge present on the surface of the material. Morphologically, Montmorillonite shows a laminar structure held together on "packets", between which the exchangeable ions and their hydration water are interposed. The nature of the interchangeable ions is of alkaline or alkaline earth type, of which the most occurring are sodium or calcium.

A tentative formula is:  $(\text{Si,Al})^*8^*(\text{Al,Fe,Mg})^*4^*\text{O}^*20^*(\text{OH})^*4^*,\text{X}^*n^*,m(\text{H}^*2^*\text{O})$

where:  $\text{X}^*n^*$  = exchangeable cations, generally  $\text{Na}^*+^*$  or  $\text{Ca}^*++^*$

n = number depending on the cation exchange capacity of the mineral

m = number depending on the water amount of the mineral.

Bentonite is inventoried in ECOIN (European Core Inventory) under CAS n° 1302 78-9.

Besides Montmorillonite other minor mineralogical species may be present in traces: Feldspars, Illite, Pyroxenes, Calcite, Quartz, Cristobalite.

## 3. Hazards identification

This product is of low acute toxicity, not harmful by swallowing or irritant for skin. Moderate irritation can be caused by prolonged eye exposure. Long term exposure to excessive concentrations of respirable dust may cause lung damage in humans. Product may contain crystalline silica which in its respirable form is classified as causing a possible risk of irreversible effect.

Product contains less than 1% w/w of respirable crystalline silica.

#### **4. First aid measures**

In case of excessive inhalation remove to fresh air.  
In case of contact with eyes rinse with water.  
No other measures has to be taken.

#### **5. Fire fighting measures**

Product is not flammable and no risk exists in presence of fire.

#### **6. Accidental release measures**

In case of accidental spillage no major personal precautions are needed. Sufficient ventilation and dust mask have to be provided to reduce dust exposure. Preferably collect the powder by vacuum cleaning. If spillage is not abundant, wash away with plenty of water. Wet clay on floor surface can be a slipping hazard. May cause drain blocking.

#### **7.1 Handling**

In absence of adequate ventilation the use of the dust mask is advised.

#### **7.2 Storage**

Bulk product can be stored in silo without problems if reasonably dry conditions are provided. Paper bags have to be stored in a sheltered place. The product have unlimited shelf life.

#### **8. Exposure controls / Personal protection**

Crystalline silica (quartz, cristobalite or tridimite), which might be present in small amounts in the product, has been assigned a maximum exposure limit (MEL) in its respirable form (fraction inferior to 10 to 5 microns) of  $0.4 \text{ mg/m}^3$  in an 8 hourtime-weighted average (TWA). Thus exposure to respirable crystalline silica should be reduced so far as is reasonably practicable and, in any case, below the MEL.

As no short term limit has been specified, the rule is that exposure averaged over a ten minutes period should not exceed three times the 8-hours TWA limit.

Exposure control is achieved through dust prevention or suppression at source, enclosure of plant, restriction of access to dusty areas, proper handling of material, good maintenance of equipment, local exhaust ventilation and good general ventilation.

Respiratory protection: if adequate dust control under the MEL is not practicable, respiratory protective equipment (RPE) has to be used. RPE may also be needed in areas where workers are exposed to high level of dust for short periods of time.

Hand protection: not needed.

Hand protection: not needed.

Eye protection: Goggles may be needed only if excessive exposure has to be faced.

Skin protection: not needed.

## **9. Physical and chemical properties**

Appearance : solid in powder or agglomerate form, colour ranging from white to yellow, greyish or greenish

Odour : odourless  
pH (5% susp.) : from 7,5 to 11  
Boiling point : not applicable

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Melting point : 1000-1250 ° C  
Flash point : not applicable  
Flammability : not flammable  
Autoflammability : none  
Explosive properties : none  
Oxidizing properties : none  
Vapour pressure : none  
Relative density : 0,7-0,9 g/ml  
Solubility : none

## **10. Stability and reactivity**

Product is stable under a reasonably large range of temperatures and no hazardous reactions may occur under various conditions.  
In water shows basic reaction.

## **11. Toxicological information**

This substance is not among those mentioned in EEC directive n.76/907 dated 30.12.1976. Product may contain small amounts of crystalline silica. Crystalline silica in its respirable form may cause lung damage (Silicosis) when exposure to dust is excessive and pro-longed (see 8.).

In 1984, the Health & Safety Executive (HSE - Toxicity Re-view n.15) stated that there was no evidence to justify a conclusion that respirable silica was carcinogenic in humans. The International Agency for Research on Cancer (IARC) has humans. The International Agency for Research on Cancer (IARC) has showed limited evidence of carcinogenicity in humans and sufficient evidence in animals. At this stage human data are not sufficiently strong to justify control measures based on carcinogenicity.

## **12. Ecological information**

Product is based on a natural occurring clay, no damage to environment can occur by its accumulation.

## **13. Disposal consideration**

No problems exist related to waste disposal. Product can absorb and stabilize smells and liquids in general.

#### **14. Transport information**

Product is not dangerous and no special recommendations or restrictions exist.

#### **15. Regulatory information**

According to the EEC Directives, no warning symbols or words has to be put on labels.

#### **16. Other information**

COSHH (Control of Substances Hazardous to Health) require that everyone who works with crystalline silica needs to be adequately informed, instructed and trained.

For more information please refer to the following literature:

- HSE - "The control of Substances Hazardous" to health Regulations 1988 and Amendment 1990.
- IOM - "The toxic effects of silica" - Institute of Occupational Medicine 1986.
- IARC - "Evolution of Carcinogenic risk of chemicals to humans: silica and some silicates" - IARC Monographs Volume 42 - 1987.
- HSE - "A review of respirable crystalline silica, exposure and control" - Specialist Inspector Report 26 by AM Philips HSE 1990.
- HSE - "Occupational exposure limits" - Guidance Note EH 40/92 HMSO 1992.
- HSE - "Control of silica dust in foundries" - HS (G)74 HMSO 1992.
- HSE - "Respiratory protective equipment: a practical guide for users" - HS (G)54 HMSO 1990.
- HSE - "General methods for the gravimetric determination of respirable and total inhalable dust" - MDHS 14 (rev) HSE 1989.
- HSE - "Silica dust and you" - MS (A) 15.
- HSE - "Crystalline Silica" - Guidance Note EH59 1992.

Most of this publications are available for free from the:

Health & Safety Executive Information Centres  
Baynard House - 1 Chepstow Place  
Westbourne Grove - LONDON W24TF - U.K.  
Tel. (071)12210870 Fax (071)11219178

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Such information is to the best of LAVIOSA CHIMICA MINERARIA knowledge and belief accurate and reliable as of the date indicated. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his particular use.