Bentonite Material Safety Data Sheet (MSDS)

SECTION 1: IDENTITY:

Product Name: BENTONITE

Common Name: BENTONITE / SWELLING CLAY/MONTMORILLONITE / SMECTITE.

Chemical Name: MAGNESIUM AND ALUMINIUM SILICATE /PHYLLOSILICATE

SECTION 2: HAZARDOUS INGREDIENTS:

Bentonite is a natural material that consists of variable proportions of various minerals, including Montmorillonite, quartz and mica.

Bentonite products consist primarily of Montmorillonite and other minor natural minerals.

Hazardous Ingredient:	Approximate Weight %:	CAS no:
Montmorillonite	>70%	1318-93-0
Quartz	< 10%	14808-60-7
Mica	<10%	12001-26

SECTION 3: HAZARDS IDENTIFICATION AND CAUTIONS:

Bentonite is of low acute toxicity. Long-term exposure to any respiritible mineral dust could cause slight effects on the respiratory system.

Wet Bentonite spillage constitutes a major slipping hazard.

Primary hazards:	This product does not present any primary hazards.
Specific hazards:	Respiratory effect: possible slight irritation from dust.
	May aggravate pre-existing difficult respiratory cond.
,	Wet material is very slippery.
Cautions:	Inhalation of dust may cause slight irritation
	Material is very slippery when wet.
	OES (Occupational Exposure Standard) for
	reportable Bentonite dust: 5mg/m^3 in an 8 hours
	time weighted average reference period
HMIS Hazard	Classification: Health: 1 (possible chronic health effects)
(See Section 11)	Flammable: 0
	Reactivity:0

SECTION 4: FIRST AID MEASURES:

Eye Contact: Flush with copious amount of fresh water. Eyelids may become sticky. Avoid rubbing eyes. If irritation develops, seek medical attention.

Skin Contact: Wash with soap and water. Bentonite is a desiccant and may cause
dry skin. Repeated contact may also cause slight irritation. If irritation develops, seek medical attention.

Inhalation: Move to dust free fresh air. If respiratory distress develops, seek medical attention.

Ingestion: No adverse effect expected. Rinse mouth out with water. Seek medical
attention if significant quantities have been ingested

SECTION 5: FIRE FIGHTING MEASURES:

Explosion Data:	Not explosive.
Extinguishing Media:	Product will not burn.
Flammability:	Not flammable or combustible.
Flash Point:	Not applicable.
Auto Ignition:	Not applicable.

SECTION 6: ACCIDENTAL RELEASE MEASURES:

Collect spillage by vacuum cleaning or other means whereby dust creation is minimized. If dust levels should exceed the occupational exposure standard, then
personal protective equipment is required.

Personal precautions:	Wear dust mask, safety gloves and goggles.
Environmental precautions:	Do not allow the entering into drains, rivers, or lakes.
Method of cleaning:	Use a vacuum or any other means minimizing dust creation (flushing with water must be avoided by all means).

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SECTION: 7: HANDELING AND STORAGE:

Handling: Bentonite is safe to handle. Material is very slippery when wet. Use appropriate controls and ventilation to avoid creating accumulation dust. Avoid inhalation and repeated contacts with eyes or skin.
Storage: Store in a dry covered area

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION:

Ventilation: Use exhaust ventilation to keep airborne dust concentration below exposure limits. Additionally, local exhaust ventilation is recommended where dusts may be released.

Respiratory Protection: Use appropriate engineering controls to avoid dust oration
or accumulation. Ensure all occupational exposure limits are maintained (5 mg/m^3 on TWA 8 hours for alveolar dust, and $10mg/m^3$ on TWA 8 hours for total inhalator dust).
Wear approved respirator or dust mask in the event of dust creation.

Skin Protection: Use gloves to avoid skin irritation.

Eye Protection: Eyewash should be available, but eye protection is not required
unless physical working conditions demand it.

Method of cleaning: Use a vacuum or any other means minimising dust creation (flushing with water must be avoided by all
means).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES:

Physical State	Solid
Odor and Appearance	Light colour (grey, pink, yellow, green brown) granules or Powder. Odourless
pH:	8.1 to 10.5
Specific gravity:	2.5 g/cc
Bulk density:	1.18 g/cc
% Soluble in water	Nil
Melting Point	1200°C
Boiling Point:	Not applicable
Freezing Point	Not applicable
Vapour pressure	Not applicable
Vapour density	Not applicable
Flash Point:	Not applicable / non-flammable product

SECTION 10: STABILITY AND REACTIVITY:

Chemically stability	Stable.
Compatibility with other substances	Compatible with all substances.
Hazardous decomposition / By product .	No hazardous decomposition or by products expected
Conditions to avoid:	None

SECTION 11: TOXICOLOGICAL INFORMATION:

Bentonite has no determined acute toxic effects. Long-term exposure to moderate or high concentrations of Bentonite dust may affect nose and respiratory tract and chest health. No toxicological effects are expected if respiratible dust concentrations are maintained below the occupational exposure standards.
Repeated contact with skin may cause dry skin and irritations. Repeated eye contact may generate irritations. No toxicological effects are expected if personal protective equipment is worn.

No adverse effects are expected when ingested.

Acute Health Hazards:

Eye contact may cause mechanical irritations if exposed to excessive amount of Bentonite. Skin contact may aggravate existing dermatitis.
Inhalation from prolonged and continuous exposure may aggravate existing asthmatic or respiratory conditions.

Chronic Health Hazards:

Prolonged inhalation of excessive levels of Bentonite dust may cause a simple
pneumoconiosis condition, not normally associated with a decrement in lung function.
In cases of long-term exposure to externally high levels of dust, complicated pneumoconiosis with lung function impairment may occur.

Carcinogenicity:	none known
Mutagenicity:	none known
Ieratogenicity:	none known
Reproductive effect	none known

Bentonite contains less than 10% crystalline silica according to testing, with a typical value around 5%. The International Agency for Research on Cancer IARC has classified crystalline silica as a possible carcinogen, which means there is limited evidence for human carcinogenicity of crystalline silica.

Bentonite does not contain dioxin and can be used in animal feed.

SECTION 12: ECOLOGICAL INFORMATION

Environmental Statement .	Bentonite has a low impact on environment. Bentonite is persistent and non-biodegradable but it is unlikely to have any long-term dverse effect on the environment
Mobility	Solid, non volitile, insoluble in water
Degradability	Non-biodegradable. Persistent

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Accumulation	No bioaccumulation or bio-magnification identified.
Ecotaxicity	Non-toxic to aquatic living organisms and animals Non-toxic to aquatic plants Non-toxic to soil organism. Non-toxic to aerobic and anaerobic plants Non-toxic to aerobic and anaerobic living organisms and animals

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SECTION 13: DISPOSAL CONSIDERATIONS

Bentonite and waste from residue can be disposed as non-toxic and inactive materials in approved landfill sites in accordance with local regulations. Contaminated packaging can be disposed in approved landfill sites in accordance with local regulations.

SECTION 14: TRANSPORT INFORMATION

Bentonite is not classified as dangerous for transportation. Bentonite may be transported in accordance with the standard local authority regulations.

SECTION 15: REGULATORY INFORMATION

Bentonite is not classified as dangerous for supply under EEC regulations. Bentonite does not require labelling for safety information or risk information. Bentonite is 5mg/m³ respiritable dust in a TWA 8 hour's reference period. Refer to all applicable local, national and international regulations and provisions to ensure that all the above are the relevant applicable measures.

SECTION 16: OTHER INFORMATION

The information contained in the Material Safety Data Sheet does not constitute and assured of workplace risks.

Workers should be trained to handle powder products without generating airborne dust.

The information and recommendation contained above are based on data and measures believed to be correct. However, they do not carry any guarantee or warranty of any kind.