

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade Name:	Bentofix® X-types (geotextile/woven composite filled with bentonite powder and with additional coating made of polyethylene)
REACH-Registration no.	Not registered under regulation 1907/2006. No registration number.
CAS no. bentonite powder	1302-78-9
EC no. bentonite powder	215-108-5
CAS/EC no. geotextile/woven components	-
CAS/EC no. polyethylene coating	-

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses:	Sealing, protection and separation applications
Uses advised against:	none

1.3 Details of the supplier of the safety data sheet

Supplier:	NAUE GmbH & Co. KG Gewerbestr. 2 32339 Espelkamp Germany	NAUE ASIA SDN BHD Lot 8599 Batu 11, Jalan Segenting 42500 Telok Panglima Garang Selangor Darul Ehsan Malaysia
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Contact person:	Mr. Kai Hartmann (Environmental Manager)
Telephone number:	+49 (57 43) 41 – 350 (Hartmann)
Fax number:	+49 (57 43) 41 - 240
Mobile number:	-
Switch board:	+49 (57 43) 41 - 0
E-Mail address:	khartmann@naue.com

1.4 Emergency telephone number

Local emergency

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Regulation (EC) No 1272/2008 (CLP)

Physical and chemical hazards:	not classified
Health hazards:	not classified
Environmental hazards:	not classified

2.2 Label elements

Labelling according to regulation (EC) No 1272/2008 (CLP)

The product is not classified or labelled according to the Regulation (EC) No 1272/2008 (CLP)

Hazardous components to be indicated on label, contains: none

Hazard pictograms: none

Signal word: none

2.3 Other hazards

Other hazards: Results of PBT and vPvB assessment - PBT: Not applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Substance	CAS No.	EG No.	REACH No.	% w/w	Classification
Bentonite	1302-78-9	215-108-5	n.a.	> 99%	none
Quartz (fine dust particles)	14808-60-7	238-878-4		< 1%	STOT RE 1 H372

The complete text phrases for all hazard statements can be found in section 16

Geotextile/woven components made of polypropylene

Coating made of polyethylene

3.2 Mixture

4. FIRST AID MEASURES

4.1 Description of first aid measures

After inhalation:

After inhalation of dust: Supply fresh air. In case of respiratory symptoms, remove from exposure area. If necessary get medical attention.

After skin contact:

Wash with plenty of water and soap. If skin irritation or a rash occurs: Get medical attention.

After eye contact:

Flush with plenty of water until all traces of the material are gone. Seek medical attention if irritation persists.

After ingestion:

In case of illness or adverse symptoms, obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

After Inhalation:

Respiratory diseases may increase after recurring dust exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptoms as occur.

5. FIREFIGHTING MEASURES

The product is not combustible. Select fire and explosion prevention measures according to the other substances stored/used.

5.1 Extinguishing media

Suitable extinguishing media:

Carbon dioxide, dry powder, foam, alcohol resistant foam, water spray stream

Unsuitable Extinguishing:

Water with full jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: Fire may release toxic gases (Carbon monoxide (CO), carbon dioxide (CO₂))

5.3 Advice for firefighters

Specially purposes of fire-fighting:

In case of fire: Wear self-contained breathing apparatus.

Particular danger of slipping on leaked/spilled product particularly in connection with water.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use appropriate protection: Always wear a dust mask

Together with water the products become a slippery surface.

(See protective measures under section 7 and 8).

6.2 Environmental precautions

No specific environmental problems expected

6.3 Methods and material for containment and cleaning up

Collect spilled material and place it in an appropriate container.

Avoid formation of dust.

Ventilate room thoroughly and then clean.

Product is not liquid and insoluble in water

6.4 Reference to other sections

Refer to protective measures under section 7 and 8 and for waste disposal section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Handling:

Assure sufficient ventilation: By transferring and for open applications of the product.

For open applications: avoid dust generation.

Indoor activities: Provide local exhaust ventilation when dust formation is possible.

Dust deposits should be cleaned off.

Dust should be removed without being swirled up if at all possible.

Pay attention to order and cleanliness at the workplace.

Hygiene measures:

- Do not eat, drink or smoke in the working area.
- Avoid inhalation of dusts.
- Avoid contact with clothing. Remove contaminated clothing and spring clean.
- Thoroughly wash hands and face with soap and water prior to meal breaks.
- Strictly stick to good hygiene.

7.2 Conditions for safe storage, including any incompatibilities

Specific requirements for Storage:

- Containers shall bear clear and permanent inscriptions.
- Keep container closed, store in a cool dry place and well-ventilated area.
- Protect from moisture: Product is hygroscopic

Specific requirements for Packing:

- No special measures are required.

7.3 Specific end uses

- Application as sealing component

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with critical values that require monitoring at the workplace (bentonite powder).

Country	Substance	Limit value	Eight hours [mg/m ³]	Short term value [mg/m ³]	Bibliographic source
Germany	Dust, inhalable	AGW	10	20	TRGS 900
Germany	Dust, inhalable	AGW	1.25	2.4	TRGS 900
Germany	Dust, inhalable	MAK	4		DFG
Germany	Dust, inhalable	MAK	0.3	2.4	DFG
USA	Dust, inhalable	PEL	15		OHSA
Austria, Belgium, Denmark, France, Hungary, Ireland, Singapore, Spain, Sweden, Switzerland	Dust, inhalable		10		Please refer to national limit value databases

8.2 Exposure controls

Appropriate engineering controls:

- Product should preferably be used without direct contact to workers. Avoid dust generation.
- For indoor activities: Usage of LEV (local exhaust ventilations) or suitable technical equipment, to comply with national/international limit values

Individual protection measures:



Eye/face protection:

Wear protective goggles with side protection.

Skin protection:

Avoid skin contact.

Wear appropriate gloves.

Suitable material: Nitrile rubber, PVC, natural rubber, Latex, thickness: ≥ 0.11 mm, which have been tested in accordance with EN 374.

In agreement with the manufacturer of gloves, choose suitable gloves and create a work glove plan.

Personal protection gloves have to be chosen not only dependent on material but also on other quality parameters.

Permeation level: **Level ≥ 6**

Before work with water insoluble materials, protective creams should be used.

Observe appropriate hygienic measures. Wash hands immediately after exposition.

After washing, re-fattening skin with protection creams.

Respiratory protection:

In critical situations (e.g. dust formation) appropriate respiratory protection is required.

Respiratory protection equipment: Particle filter P1, dust mask FFP1

Body protection:

Personal protection clothes

General protection and hygiene measures:

The usual precautions in handling with chemicals are to be observed.

Wash hands before breaks and at the end of work.

Environmental exposure controls:

No special risk management measures

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties (bentonite powder)

Appearance:	powder
Colour:	brownish, beige
Odour:	odourless
Odour threshold:	value not determined
pH-Value:	7.0 – 10.5
Melting point	>450°C
Initial boiling point and boiling range:	value not determined
Flash point:	not combustible
Evaporation rate:	value not determined
Flammability (solid, gas):	substance is not inflammable.
Upper/lower flammability or explosive limits:	substance is not explosive
Vapour pressure:	not applicable
Vapour density:	not applicable
Relative density:	approx. 2,6 g/cm ³
Bulk density	approx. 650 - 1400 kg/m ³
Solubility in water:	<0.0009 g/l practically insoluble
Partition coefficient: n-octanol/water:	not applicable

Auto-ignition temperature:	value not determined
Decomposition temperature:	value not determined
Viscosity:	not applicable
Oxidising properties:	not oxidising

9.1.2 Information on basic physical and chemical properties (geotextile/woven components)

Appearance:	Geotextile/woven, solid
Colour:	White/beige
Odour:	odourless
Odour threshold:	Value not determined
pH-Value:	Not applicable
Melting point	Approx. 165 °C
Initial boiling point and boiling range:	Value not determined
Flash point:	Not combustible
Evaporation rate:	Value not determined
Flammability (solid, gas):	Approx. 440 °C
Upper/lower flammability or explosive limits:	Substance is not explosive
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Relative density at 20 °C:	Approx. 0.9 g/cm ³
Bulk density	Value not determined
Solubility in water:	insoluble
Partition coefficient: n-octanol/water:	Not applicable
Auto-ignition temperature:	Value not determined
Decomposition temperature:	Approx. 300 °C
Viscosity:	Not applicable
Oxidising properties:	Not oxidising

9.1.3 Information on basic physical and chemical properties (coating)

Appearance:	Geomembrane, solid
Colour:	transparent
Odour:	odourless
Odour threshold:	Value not determined
pH-Value:	Not applicable
Melting point	Approx. 120 °C
Initial boiling point and boiling range:	Value not determined
Flash point:	Not combustible
Evaporation rate:	Value not determined
Flammability (solid):	Approx. 350 °C
Upper/lower flammability or explosive limits:	Substance is not explosive
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Relative density at 20 °C:	Approx. 0.9 – 0.95 g/cm ³
Bulk density	Value not determined
Solubility in water:	Insoluble
Partition coefficient: n-octanol/water:	Not applicable

Auto-ignition temperature: Value not determined
Decomposition temperature: Approx. 300 °C
Viscosity: Not applicable
Oxidising properties: Not oxidising

9.2 Other information

No further relevant information available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Stable and might swell to 12 times its volume when in contact with water.

10.2 Chemical stability

Stable under normal condition. Molten Lithium attacks silicates.

10.3 Possibility of hazardous reactions

Carbon monoxyde, carbon dioxyde

10.4 Conditions to avoid

Heat, flames.

10.5 Incompatible materials

Molten Lithium attacks silicates.

10.6 Hazardous decomposition products

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11. TOXICOLOGICAL INFORMATION

No data available

11.1 Information on toxicological effects

Toxicological data is not available for the substance bentonite. Polypropylene is not classified as hazardous. Toxicological data is not available for the mixture.

Acute toxicity (bentonte powder):

Exposure route	Endpoint	Value	Species	Method
Oral	LC50	>2000 mg/kg	rat	OECD Guideline 420
Dust inhalation	LC50	>5.27 mg/4h	rat	OECD Guideline 436

Acute toxicity, dermal not determined

Skin corrosion/irritation: Bentonite is not skin irritating (in vivo, OECD 404, rabbit).

Serious eye damage/irritation: Bentonit is not eye irritating (in vivo, OECD 405, rabbit).

Respiratory or skin sensitisation: Bentonite is no skin sensitizer: local lymph node test (OECD 429, mouse).

Germ cell mutagenicity: In-vitro tests (OECD 471, 473 und 476): negative.

Carcinogenicity:	No carcinogenicity
Reproductive toxicity:	No reproductive Two studies (Abdel-Wahhab et al (1999); Wiles et al (2004)) showed no significant effects in parental animals nor on offspring.
Specific target organ toxicity, single exposure:	No target organ toxicity for single exposure
Specific target organ toxicity, repeated exposure:	In case of oral exposure hepatomes were observed. These effects were observed in cases of high exposure and were assessed to depend on gastrointestinal effects. If a pre-damage of the respiratory system is already found additional effects on basis of dust exposure are expected.
Aspiration hazard:	No aspiration toxicity expected
Other information:	To our knowledge and correct application no negative effects on workers and humans are expected.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

According to 1272/2008 no aquatic toxicity is expected

Acute aquatic toxicity (bentonite powder):

Endpoint	Value	Species	Exposure
LC50	16,000 mg/l	Rainbow trout	96 hours
EC50	81.6 mg/l	Common carp	96 hours
EC50	24.8 mg/l	Aquatic vertebrates	48 hours
EC50	>100 mg/l	Micro organisms	48 hours
LC50 (24h); 2800-3200 mg/l (black bass, warmouth bass, blue gill and sunfish)			
LC50.(24h); >500 mg/l (C. Dubia, H. Limbata)			

Chronic aquatic toxicity (bentonite powder):

Endpoint	Value	Species	exposure
LC50	16,000 mg/l	Fish	d
EC50	>100 mg/l	Freshwater algae	72 hours

12.2 Persistence and degradability

Not determined: not applicable for inorganic substances

12.3 Bioaccumulative potential

Not determined

12.4 Mobility in soil

Not determined. Due to solubility and technical application no mobility expected

12.5 Results of PBT and vPvB assessment

Bentonite and polyethylene are neither PBT
nor cPvB

12.6 Other adverse effects

Not determined

13. DISPOSAL CONSIDERATIONS

Bentonite powder can be disposed together with soil materials on landfill sites or depending on local regulations.
Polypropylene can be disposed together with other polymers or polymer products depending on local regulations.

13.1 Waste treatment methods

Supply product residues with detailed labelling.

14. TRANSPORT INFORMATION

No Special precautions required

14.1 UN number

not applicable

14.2 UN proper shipping name

not applicable

14.3 Transport hazard class(es)

not applicable

14.4 Packing group

not applicable

14.5 Environmental hazards

not applicable

14.6 Special precautions for user

not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation:

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures

National provisions:

Depending on local market

15.2 Chemical safety assessment

A chemical safety assessment for the substance has not been carried out (not applicable).

16. OTHER INFORMATION

List of relevant hazard statements:

H372 Causes damage to organs through prolonged or repeated exposure.

List of relevant precautionary statements:

Abbreviations and acronyms used in the safety data sheet:

Information on revision of the safety data sheet: revised on 2023-05-17

Trade name: Bentofix® X (Bentonite/geotextile/woven with coating)

Key literature references and sources for data: No data available

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