

Product: Bentonite Clay
Batch Number: 4372707
Best Before End: September 2022
Results:

| Parameter | Test specification | Result |
|--|--|--------------------------|
| Identification | a gelatinous white precipitate is formed | conforms |
| 1. Identity A | | |
| 2. Identity B | the apparent volume of the sediment is not less than 22 ml after 2 hours | conforms (32 ml) |
| 3. Identity C | gives the reaction of silicates | conforms |
| Purity 4. | | |
| Alkalinity | decolourisation of bluish solution within 5 min | conforms |
| 5. Coarse particles | max. 0.5 % | <0.5 % |
| 6. Heavy metals | max. 50 ppm | < 50 ppm |
| 7. Loss on drying | max. 15 % | 9.5 % |
| 8. Microbial contamination TAMC: 10 ⁷ cfu/g; max. acceptable limit (Ph.Eur. 2.6.12): 2000 | | conforms (800 cfu/g) |
| Functionalityrelated characteristics | | |
| 9. Swelling power | see test identity B | conforms |
| with 10. Sedimentation volume | water the volume of the clear supernatant liquid is not greater than 2 ml after 24 hours | conforms |
| Escherichia coli | | not detectable <i>lg</i> |

The sample conforms to Ph. Eur. 8.8, monograph Bentonit (8.0/0467)
According to the client, the monograph Bentonite in British Pharmacopeia 2017 conforms to the Ph.Eur. 8.8 monograph with regard to content. Therefore, the sample also conforms to BP 2017.

Bentonite Clay

Dear Sir/Madam,

I can confirm, following discussions with the supplier, that the below Allergen information is correct:

| ALLERGENS | Product Free From? | Listed Item on Site at manufacturer | Where applicable, is there risk of cross-contamination? |
|--|--------------------|-------------------------------------|---|
| Free from Peanuts and Peanut Derivatives (including possible cross contamination) | YES | NO | NO |
| Free from other Nut and Nut Derivatives <i>Almond (Amygdalus communis L.), Hazelnut (Corylus avellana), Walnut (Juglans regia), Cashew (Anacardium occidentale), Pecan nut (Carya illinoensis (Wangenh.) K. Koch), Brazil nut (Bertholletia excelsa), Pistachio nut (Pistacia vera), Macadamia nut and Queensland nut (Macadamia ternifolia)</i> | YES | NO | NO |
| Free from Sesame Seeds and Sesame Seed Derivatives | YES | NO | NO |
| Free from other Seeds and Seed Derivatives (Poppy Seeds, Cotton Seeds, Sunflower Seeds) | YES | NO | NO |
| Free from Milk and Milk Derivatives (including lactose) | YES | NO | NO |
| Free from Egg and Egg Derivatives | YES | NO | NO |
| Free from Cereals and Derivatives containing OR POTENTIALLY CONTAMINATED WITH Gluten (<i>wheat, wheatgrass, faro, freekeh, spelt, kamut, rye, oats, barley, barley grass</i>) | YES | NO | NO |
| Free from Soya and Soya Derivatives | YES | NO | NO |
| Free from Lupin and Lupin Derivatives | YES | NO | NO |
| Free from Mustard and Mustard Derivatives | YES | NO | NO |
| Free from Celery or Celery Derivatives (including Celeriac) | YES | NO | NO |
| Free from Fish and Fish Derivatives | YES | NO | NO |
| Free from Molluscs and their Derivatives | YES | NO | NO |
| Free from Crustaceans and their Derivatives | YES | NO | NO |
| Free from Sulphur Dioxide and Sulphites (E220, E228) at levels > 10mg/kg or 10mg/litre | YES | NO | NO |

Flow Chart and Country of Origin Statement

Bentonite Clay



Dear Sir/Madam,

I can confirm, following supplier, that the product origin is **Germany**

discussions with the

Please find the below Flow Chart for your reference:

| | | | |
|-------------------|----------------------------|---|-----------------------|
| natural clay | interim storage in boxes | quality selected in boxes | sediment approx. 65 % |
| box charging | charging of the line | charging by using wheel loaders | |
| coiler | preliminary size reduction | size reduction of big clay lumps | |
| drying drum | drying | approx. 1,5 h/ approx. 110° C | |
| | | magnetic separator | |
| crusher | size reduction | roll crusher approx. < 10 mm | humidity approx. 12 % |
| silo | interim storage | stocks | |
| ball mill | grinding | grain band fractionation by the use of a classifier | TSR 45 µm max. 0,3 % |
| silo | interim storage | stocks | |
| | | screen separator | |
| packaging/loading | packing | in bulk truck/bag/big bag | acc. to specification |
| | | magnetic separator | |
| | | screen separator | |
| customer | consumer | application as a product | |



GMO and Vegan Statement

Bentonite Clay

Dear Sir/Madam,

We can confirm, following discussions with the supplier, that the product origin is Vegan Suitable and GMO-

Free, as provided by our supplier. Hoping this meets with your requirements.



Material Safety Data Sheet

1. Substance & Company Identification

| | | | |
|----------------------|----------------|-----------------|--|
| Product name: | Bentonite Clay | Company: | MADAR Corporation Limited 19-20 Sandleheath Industrial Estate, Fordingbridge, Hampshire, SP6 1PE Tel: + 44 1425 655555 Email: sales@madarcorporation.co.uk |
|----------------------|----------------|-----------------|--|

2. Composition

| | | | |
|-------------------------|---|--------------------------------|-------------------|
| Chemical Name | Bentonite Clay | Hazardous components | Quartz |
| Chemical Family | Montmorillonite | Concentration | <5% total quartz. |
| Formulae | Aluminosilicate of sodium, calcium and magnesium. | Quartz as dust <7.1µ | <0.5% |
| CAS Number | 1302-78-9 | CAS Number | 14808-60-7 |
| EINECS Number | 215-288-5 | EINECS Number | 238-878-4 |
| R-Phrases number | Xn R48/20 | R-Phrases number | Xn R48/20 |

3. Hazards Identification

| | |
|-------------------------------------|--|
| Possible Short term effects: | |
| Skin Contact | May cause dryness. |
| Eye Contact | Irritation and soreness due to dust particles. |
| Inhalation | Irritation of nose and throat. Avoid exceeding WEL limit - see section 8. |
| Ingestion | Mild gastric irritation. |
| Labelling Classification | Xn – Harmful |
| Risk and Safety Phrases | R48/20, S22, S51 |
| Precautions | Use in well ventilated areas, and do not breathe dust for prolonged periods – see Workplace Exposure Limits under section 8. Take care if wet as becomes slippery. |

4. First Aid Measures

| | |
|--------------|--|
| Skin Contact | Rinse thoroughly with cold water and seek medical attention if symptoms persist. |
| Eye Contact | Rinse thoroughly with cold water and seek medical attention if symptoms persist. |
| Inhalation | Remove person to fresh air, and if symptoms persist seek medical attention. |
| Ingestion | Drink several glasses of water or milk. If large quantities are ingested seek medical attention. |

5. Fire Fighting Measures

| | |
|-----------------|--|
| Non-combustible | When extinguishing fires bear in mind product becomes slippery when wet. |
|-----------------|--|

6. Accidental Release Measures

| | |
|----------------------|--|
| Personal precautions | Do not breathe dust for prolonged periods - see section 8. Becomes very slippery when wet. |
| Environmental risk | Non-toxic. |
| Cleaning up | Sweep -avoid dry sweeping as raises irritant dust, but do not wash with water as becomes very slippery when wet – mixing with damp sawdust is recommended or preferably vacuum up and dispose of as non-toxic waste. |

7. Handling and Storage

| | |
|----------|--|
| Handling | Avoid the creation of dust and ensure adequate ventilation at point of use. See section 8. |
|----------|--|

| | |
|--|---|
| Storage | Store in clean dry environment. |
| 8. Exposure Control / Personal Protection | |
| Hand protection | Use barrier creams and rubber gloves as required. |
| Skin protection | Normal work wear. |
| Eye protection | Wear safety glasses. |

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| | |
|------------------------|---|
| Respiratory protection | Use dust masks. Ensure adequate ventilation and dust control measures to maintain dust levels below WEL* limit. |
|------------------------|---|

*Workplace Exposure Limits (WEL) according to COSHH E40/ 2005 amended Oct 2007:
 Dry bentonite is classed as a nuisance dust with an 8 hour TWA for amorphous dust inhalation of 6 mg/m³ and 2.4 mg/m³ for respirable dust (Respirable dust is that portion with a particle size <7.1µm.). Crystalline Silica present in small quantities in this product has a WEL of 0.1mg/m³ for an 8 hour TWA period.

9. Physical and Chemical Properties

| | | | |
|----------------------|---|-----------------|-----|
| Appearance | Pale white, grey, yellow, or brown powder | Vapour pressure | N/A |
| Odour | Odourless | Flash Point | N/A |
| PH - 2% suspension | 7 - 9.5 | | |
| S.G | 2.5 | Melting Point | N/A |
| Solubility | Forms suspension in water. | | |
| Flammability | Non flammable | Boiling Point | N/A |
| Explosive properties | None | | |

10. Stability and Reactivity

| | |
|-----------------------------------|--|
| Conditions to avoid | Avoid generation of dust. Do not wet any spills. |
| Materials to avoid | Oxidising agents |
| Hazardous Decomposition products. | None |

11. Toxicology Information

| | |
|--------------|--|
| Ingestion | Orally non toxic. LD50 > 5000mg/kg Rat oral. |
| Eye contact | Causes irritation due to physical abrasion by dust particles. |
| Skin contact | Non toxic may cause skin dryness and chapping. |
| Inhalation | Long term exposure to Bentonite dust in excess of the WEL limit may result in fibrosis of the lung tissue. The presence of respirable crystalline silica may lead to silicosis if the WEL is persistently exceeded over a long time. |

12. Ecological information

This is a natural mineral with no known ecological problems associated with bentonite.

13. Disposal Considerations

Dispose of in accordance with local and national regulations using an approved disposal contractor.

14. Transport Information

There are no specific transport precautions required, as product is classified as not dangerous, but product should be kept dry as becomes slippery when wet and avoid dust creation.

15. Regulatory Information

European Inventory of New and Existing Chemical Substances – All the components of this product are listed on the EINECS inventory.

EC Substance Classification – Directive 67/548/EEC

Labelling Classification, Xn

Risk and Safety Phrases R48/20 , S22

COSHH regulations E40/2005 updated October 2007 apply in the UK.

16. Other information

EU Classes and Risk Phrases for Reference (See sections 2 and 3)

Xn Harmful - substances which may cause health hazards less than toxic. It could refer to other types of risks e.g. to allergic reactions.

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

S22 Do not breathe dust.

Typical uses of this product are Civil engineering, Oil well drilling, Ceramics, Foundry applications, Land Fill barriers, Bore-hole sealing.

Ver. 6 mja 3-2009



SPECIFICATION

Bentonite Clay

| | Current value 10/2014 | Specification MAXI | |
|--------------------------------------|-----------------------|--------------------|---------------------------|
| Arsenic | 13,2 | 25 | ppm |
| Cadmium | 0,64 | 2 | ppm |
| Mercury | 0,4 | 1 | ppm |
| Lead | 9 | 30 | ppm |
| Fluorine | 80 | 4000 | ppm |
| Dioxines PCDD/F | 0,09 | 0,5 | ng WHO-PCDD/F-TEQ/ kg |
| Dioxines (PCDD/F + PCB type dioxine) | 0,12 | 0,75 | ng WHO-PCDD/F-PCB-TEQ/ kg |
| Sum of PCB | 3 | 10 | µg/kg |



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