SAFETY DATA SHEET
BENTONITE
REVISION 7, DATE 25 DEC 2021

1. IDENTIFICATION

Product Name	**Bentonite**
Other Names	Sodium Bentonite; Stockfeed Bentonite
Uses	Animal feed additive; Pet litter; Water storage sealant; Soil improver; Poultry litter amendment; Civil engineering; Electrical engineering; Clarifying agent.
Chemical Family	No Data Available
Chemical Formula	Unspecified
Chemical Name	Montmorillonite
Product Description	The substance is an inert natural clay containing only very low levels of respirable crystalline silica as supplied.

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	Not Scheduled

Globally Harmonised System

Hazard Classification	NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Signal Word	None

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Montmorillonite (dominant)	Unspecified	1318-93-0	95 - 99 %
Other	Unspecified	Unspecified	<3 %
Quartz (minor)	SiO2	14808-60-7	1 - 2 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then give a glass of water. Do not induce vomiting. Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Wash with plenty of non-abrasive soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention.
Advice to Doctor	Treat symptomatically.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	The product is non-combustible.
Extinguishing Media	If material is involved in a fire, use extinguishing media appropriate to surrounding fire conditions.
Fire and Explosion Hazard	The unpackaged product will become extremely slippery when wet! Care must be taken with emergency vehicles and personnel when moving across wet product.

Hazardous Products of Combustion	Fire or heat may produce irritating and/or toxic gases.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may cause pollution.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Do not touch or walk through spilled material - The unpackaged product will become extremely slippery when wet! Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers for disposal (see SECTION 13).
Containment	Stop leak if you can do it without risk. Prevent dust cloud. Cover powder spill with plastic sheet or tarp to minimize spreading.
Decontamination	Wash area down with excess water.
Environmental Precautionary Measures	Prevent entry into drains and waterways. *Product will swell upon contact with water and has the potential to block drains.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8). *Use a P2 (N95) dust mask when cleaning up product in powder form.

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation, Handle in accordance with good industrial hygiene and safety practice. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use - check regularly for spills. Keep away from other chemicals (to avoid absorption and taint) and incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No value assigned for this specific material by Safe Work Australia. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m3 (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m3; TWA = 3 mg/m3 (respirable dust). COMPONENT: Quartz (CAS No. 14808-60-7): - Safe Work Australia Exposure Standard (respirable dust): TWA = 0.05 mg/m3; Known to have carcinogenic potential for humans (Carc. 1A). - New Zealand Workplace Exposure Standard for Silica-crystalline (all forms): TWA = 0.05 mg/m3 (respirable dust); Confirmed carcinogen (6.7A).

Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. *Ensure ventilation is adequate to maintain airborne dust concentrations below the occupational exposure standards for respirable dust and respirable crystalline silica.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust mask/respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses. - Hand protection: Handle with gloves. Recommended: Impervious gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, Safety shoes.
Special Hazards Precaustions	While this product is not classified as Hazardous in its supplied state, care should be taken to adopt control measures where further processing of this product creates dust. If dust is created it may contain respirable silica (from quartz).
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Granules/powder
Odour	Odourless
Colour	Buff/off-white
pH	5 - 7
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	Forms colloidal suspension in water
Specific Gravity	No Data Available
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	1.12 tonne per cubic metre
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available

VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	The unpackaged product will become extremely slippery when wet! Care must be taken with emergency vehicles and personnel when moving across wet product.
Properties That May Initiate or Contribute to Fire Intensity	The product is non-combustible.
Reactions That Release Gases or Vapours	Fire may produce irritating and/or toxic gases.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	There are no foreseeable situations that would cause this product to undergo a dangerous chemical reaction.
Chemical Stability	This product is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Conditions to Avoid	Avoid generating dust.
Materials to Avoid	No information available.
Hazardous Decomposition Products	There are no foreseeable situations that would cause this product to generate hazardous decomposition products.
Hazardous Polymerisation	Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information

- Acute toxicity: Not considered to be toxic by ingestion and no adverse effects are likely. Non-skin absorbing but may adhere to cuts, skin abrasions.
- Skin corrosion/irritation: Not a skin irritant.
- Eye damage/irritation: Not an eye irritant, but excessive dust in eyes may cause discomfort.
- Respiratory/skin sensitisation: This product does not meet the classification as a respiratory sensitizer. This product does not meet the classification as a skin sensitizer.
- Germ cell mutagenicity: This product does not meet the classification criteria for germ cell mutagenicity.
- Carcinogenicity: Crystalline silica (e.g. quartz), when present as respirable dust, is a Category 1A carcinogen by the inhalation route. Crystalline quartz is a minor component of the product but is mostly not present in the respirable form.
- Reproductive toxicity: This product does not meet the classification criteria for reproductive toxicity.
- STOT (single exposure): Not known to occur.
- STOT (repeated exposure): Repeated or prolonged inhalation of crystalline silica (e.g. quartz), when present as respirable dust, can cause damage to lungs and lead to silicosis. Crystalline quartz is a minor component of the product but is mostly not present in the respirable form.
- Aspiration toxicity: This product does not meet the criteria for classification as an aspiration hazard.

Acute

Ingestion

Acute toxicity (Oral):
- Acute toxicity estimate (ATE): >2,000 mg/kg bw. [Supplier's SDS].

Other

Acute toxicity (Dermal):
- Acute toxicity estimate (ATE): 2,000 mg/kg bw. [Supplier's SDS].

Inhalation	Acute toxicity (Inhalation): - Acute toxicity estimate (ATE): >5.0 mg/L [Supplier's SDS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	This product does not meet the classification criteria for acute aquatic toxicity and nor does it meet the classification criteria for chronic aquatic toxicity.
Persistence/Degradability	The product is a naturally occurring clay which is known to be a common component of healthy soils.
Mobility	No information available.
Environmental Fate	If released into natural waterways this product may have the effect of increasing turbidity and remaining suspended in the water for long periods, with possible adverse effects on aquatic life.
Bioaccumulation Potential	This product is known to have a low bioaccumulative potential.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations.
Special Precautions for Land Fill	Dispose unused product into local landfill. Packaging may be recycled.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

Proper Shipping Name	Bentonite
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)
ADR Code

Proper Shipping Name	Bentonite
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available

Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	Bentonite
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)
US DOT

Proper Shipping Name	Bentonite
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport
IMDG Code

Proper Shipping Name	Bentonite
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport
IATA DGR

Proper Shipping Name	Bentonite
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available

Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	Not Hazardous

National/Regional Inventories

Australia (AIIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes	BENTOM1000, BENTOM2000, BENTON1000, BENTON1001, BENTON1002, BENTON1003, BENTON1335, BENTON1500, BENTON1600, BENTON2000, BENTON2100, BENTON2112, BENTON2300, BENTON2400, BENTON3000, BENTON3012, BENTON4000, BENTON4001, BENTON4100, BENTON4105, BENTON4150, BENTON4200, BENTON4300, BENTON4325, BENTON4400, BENTON4401, BENTON4500, BENTON4501, BENTON4505, BENTON4525, BENTON4550, BENTON4600, BENTON4700, BENTON4712, BENTON5500, SOBENT1000, SOBENT4500, SOBENT5000, SOBENT7500, SOBENT7501, SOBENT7600, SOBENT7601, SOBENT7700, SOBENT7701
Revision	7
Revision Date	25 Dec 2021
Key/Legend	< Less Than > Greater Than **AICS** Australian Inventory of Chemical Substances **atm** Atmosphere **CAS** Chemical Abstracts Service (Registry Number) **cm^2** Square Centimetres **CO2** Carbon Dioxide **COD** Chemical Oxygen Demand **deg C (°C)** Degrees Celcius **EPA (New Zealand)** Environmental Protection Authority of New Zealand **deg F (°F)** Degrees Farenheit **g** Grams **g/cm^3** Grams per Cubic Centimetre **g/l** Grams per Litre **HSNO** Hazardous Substance and New Organism **IDLH** Immediately Dangerous to Life and Health **immiscible** Liquids are insoluable in each other. **inHg** Inch of Mercury **inH2O** Inch of Water **K** Kelvin **kg** Kilogram **kg/m^3** Kilograms per Cubic Metre **lb** Pound **LC50** LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. **LD50** LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. **ltr** or **L** Litre **m^3** Cubic Metre **mbar** Millibar **mg** Milligram **mg/24H** Milligrams per 24 Hours **mg/kg** Milligrams per Kilogram **mg/m^3** Milligrams per Cubic Metre **Misc** or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present. **mm** Millimetre **mmH2O** Millimetres of Water **mPa.s** Millipascals per Second **N/A** Not Applicable **NIOSH** National Institute for Occupational Safety and Health **NOHSC** National Occupational Heath and Safety Commission **OECD** Organisation for Economic Co-operation and Development **Oz** Ounce **PEL** Permissible Exposure Limit **Pa** Pascal **ppb** Parts per Billion **ppm** Parts per Million **ppm/2h** Parts per Million per 2 Hours **ppm/6h** Parts per Million per 6 Hours **psi** Pounds per Square Inch

R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight