

SAFETY DATA SHEET



EutroSORB[®] G

SECTION 1. IDENTIFICATION

Product Name : EutroSORB[®] G
Product Use : Phosphorus Locking Technology

Recommended use of the chemical and restrictions on use

Relevant identified uses : Used to remove prescribed oxyanions in a variety of natural environments such as lakes, rivers, estuaries, dams, ornamental ponds and natural wetlands. Also in artificial environments including waste effluents such as sewage and industrial effluents and as a barrier within containment cells for leachable wastes.


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SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS

	Min	Max	
Flammability	0		
Toxicity	1		0 = Minimum
Body Contact	0		1 = Low
Reactivity	0		2 = Moderate
Chronic	0		3 = High
			4 = Extreme



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)



GHS Classification: Not Applicable

GHS Label Elements: Not Applicable

Signal Word: Not Applicable

Hazard statement(s): Not Applicable

Precautionary Statement(s)

Prevention

If medical advice is needed, have product container or label at hand.
Keep out of reach of children. Read label before use.

Response: Not Applicable

Storage: Not Applicable

Disposal: Not Applicable

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

See section below of composition of Mixtures

Name	CAS Number	% [weight]
Lanthanum-modified bentonite	302346-65-2	75-95%
Water	7732-18-5	5-25%

SECTION 4. FIRST AID MEASURES

Inhalation	Move person to a dust free area. If person is not breathing, call 911 or an ambulance immediately. Call poison control center or doctor for further treatment advice.
If on Skin or Clothing	Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
Eye Contact	Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Seek medical attention without delay; if pain persists or recurs seek medical attention.
Ingestion	If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head down position, if possible) to maintain open airway and prevent aspiration. Observe patient carefully. Never give liquid to a person showing signs of being sleepy or reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

There is no restriction on the type of extinguisher which may be used. Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility: Not known.

Special protective equipment and precautions for fire-fighters

Fire Fighting: Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use firefighting procedures suitable for surrounding area. **DO NOT** approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.

Fire/Explosion Hazard: Non-combustible. Not considered a significant fire risk, however containers may burn. May emit poisonous fumes. May emit corrosive fumes.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills: Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Control personal contact with substance, by using protective equipment. Use dry clean up procedures and avoid generating dust. Place in a suitable, labelled container for waste disposal.

Major Spills: Moderate Hazard.
CAUTION: Advise personnel in area. Alert Emergency Services and tell them location and nature of hazard. Control personal contact by wearing protective clothing. Prevent, by any means available, spillage from entering drains or water courses. Recover product wherever possible.
IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal.
IF WET: Vacuum/shovel up and place in labelled containers for disposal.
ALWAYS: Wash area down with large amounts of water and prevent runoff into drains. If contamination of drains or waterways occurs, advise Emergency Service.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. **DO NOT** enter confined spaces until atmosphere has been checked.

DO NOT allow material to contact humans, exposed food or food utensils. Avoid contact with incompatible materials. When handling, **DO NOT** eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice.

Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

Other Information: Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS.

For major quantities: Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams). Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.

Conditions for safe storage, including any incompatibilities



Suitable container: Polyethylene or polypropylene container. Check all containers are clearly labelled and free from leaks.

Storage Incompatibility: Avoid reaction with oxidizing agents. Protect from light.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits (OEL)

Ingredient Data: Not Available

Emergency Limits				
Ingredient	Material Name	TEEL-1	TEEL-2	TEEL-3
Lanthanum-modified Bentonite	EutroSORB® G	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
Ingredients determined not to be hazardous	Not Available	Not Available

Exposure Controls

Appropriate engineering controls:

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction. If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.

Such protection might consist of:

- (a) particle dust respirators, if necessary, combined with an absorption cartridge;
- (b) filter respirators with absorption cartridge or canister of the right type;
- (c) fresh-air hoods or masks.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant. See "Respiratory Protection" section below for additional information.

Type of Contaminant:	Air Speed:
Direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone or rapid air motion).	1-2.5 m/s (200-500 f/min.)
Grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min)

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favorable to capture.
- 2: Contaminants of low toxicity or of nuisance value only.
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion.

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Personal protection:



Eye and face protection:

- Safety glasses with side shields; or, as required.
- chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

Skin protection:

See Hand protection below.

Hands/feet protection:

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application. **The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.**

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: frequency and duration of contact, chemical resistance of glove material, glove thickness and dexterity

Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present: polychloroprene; nitrile rubber; butyl rubber; fluorocautchouc; polyvinyl chloride.

Gloves should be examined for wear and/ or degradation constantly.

Body protection: See other protection below.

Other protection:
 Overalls.
 P.V.C. apron.
 Barrier cream.
 Skin cleansing cream.
 Eye wash unit.

Thermal hazards: Not available.

Respiratory protection Particulate.

Try to avoid creating dust conditions.

Where protection from nuisance levels of dusts are desired, use type N95 (US) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US).

Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.

The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure – ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).

Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended. Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.

Use approved positive flow mask if significant quantities of dust becomes airborne.

Quartz CAS 14808-60-7	0.025 mg/m ³ TWA (respirable fraction)	Not established
Titanium dioxide CAS 13463-67-7	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
 OSHA = Occupational Safety and Health Administration
 TWA = Time Weighted Averages are based on 8h/day, 40h/week exposures

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Light brown granules; insoluble in water
Physical state	Divided solid
Odor	Not available
Odor threshold	Not available
pH (as supplied)	Not applicable
Melting point / freezing point (°C)	>1000

Initial boiling point and boiling range (°C)	Not applicable
Flash point (°C)	Not applicable
Evaporation rate	Not applicable
Flammability	Not applicable
Relative density (Water = 1)	1.1
Partition coefficient n-octanol / water	Not available
Auto-ignition temperature (°C)	Not applicable
Decomposition temperature	Not available
Viscosity (cSt)	Not available
Molecular weight (g/mol)	Not applicable
Taste	Not available
Explosive properties	Not available
Oxidising properties	Not available
Upper Explosive Limit (%)	Not applicable
Lower Explosive Limit (%)	Not applicable
Vapour pressure (kPa)	Not applicable
Solubility in water (g/l)	Immiscible
Vapour density (Air = 1)	Not available
Surface Tension (dyn/cm or mN/m)	Not applicable
Volatile Component (% vol)	Not applicable
Gas group	Not available
pH as a solution (1%)	7 – 7.5 (2%)
VOC g/L	Not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> • Unstable in the presence of incompatible materials. • Product is considered stable. • Hazardous polymerization will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects:

Inhaled	<ul style="list-style-type: none"> • Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. • If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.
Ingestion	<ul style="list-style-type: none"> • Accidental ingestion of the material may be damaging to the health of the individual. • Ingestion may result in nausea, abdominal irritation, pain and vomiting.
Skin Contact	<ul style="list-style-type: none"> • The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. • Open cuts, abraded or irritated skin should not be exposed to this material.

Eye

- Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
- Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn).

Chronic

- Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.
- Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
- Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung.

EutroSORB® G

Toxicity	Irritation
Dermal (Rabbit) LD50: None PDII/4hr ^[2]	Not available
Inhalation (Rat) LC50: >5000 mg/L/4h ^[2]	

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Acute Toxicity	Data available but does not fill the criteria for classification
Skin Irritation/Corrosion	Data not available to make classification
Serious Eye Damage/Irritation	Data not available to make classification
Respiratory or Skin Sensitization	Data not available to make classification
Mutagenicity	Data not available to make classification
Carcinogenicity	Data not available to make classification
Reproductivity	Data not available to make classification
STOT – Single Exposure	Data not available to make classification
STOT – Repeated Exposure	Data not available to make classification
Aspiration Hazard	Data not available to make classification

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<i>Legend</i>	<i>Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances – Ecotoxicological Information – Aquatic Toxicity 3. EPIWIN Suite V3.12 – Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database – Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) – Bioconcentration Data 7. METI (Japan) – Bioconcentration Data 8. Vendor Data</i>				

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Lanthanum-modified Bentonite	No data available for all ingredients	No data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
Lanthanum-modified Bentonite	No data available for all ingredients



Mobility in soil

Ingredient	Mobility
Lanthanum-modified Bentonite	No data available for all ingredients

SECTION 13. DISPOSAL CONSIDERATIONS

Product / Packaging Disposal Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf-life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.

- **DO NOT** allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorized landfill.
- Recycle containers if possible, or dispose of in an authorized landfill.

SECTION 14. TRANSPORT INFORMATION

Labels Required

- Marine Pollutant:** No
- Land transport (DOT):** NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
- Air transport (ICAO-IATA / DGR):** NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
- Sea transport (IMDG-Code / GGVSee):** NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

SECTION 15. REGULATORY INFORMATION

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

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)



SECTION 311/312 HAZARD CATEGORIES

Immediate (acute) health hazard NO
 Delayed (chronic) health hazard NO
 Fire Hazard NO
 Pressure Hazard NO
 Reactivity hazard NO

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4): None Reported

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	Y
China - IECSC	Y
Europe-EINEC/ELINCS/NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand – NZIoC	Y
Philippines - PICCS	Y
USA – TSCA	Y

Legend: Y = All ingredients are on the inventory
 N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16. OTHER INFORMATION

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC – TWA: Permissible Concentration-Time Weighted Average
- PC – STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit.
- IDLH: Immediately Dangerous to Life or Health Concentrations
- OSF: Odor Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odor Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index

Prepared by: SePRO Corporation
 Written Date: 02/28/2023

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user.



SDS

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All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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