

SAFETY DATA SHEET

ECOSORB® S-451

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations



Graver Technologies

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1	PRODUCT NAME:	ECOSORB® S-451
	CAS NUMBER:	Mixture
1.2	PRODUCT USE:	Removes color, taste, odor and turbidity from liquid food streams
1.3	SUPPLIER/MANUFACTURER'S NAME:	Graver Technologies LLC
	ADDRESS:	200 Lake Drive, Glasgow, Delaware 19702-3319 USA
	BUSINESS PHONE:	(302) 731-1700
	BUSINESS FAX:	(302) 731-1707
1.4	EMERGENCY PHONE:	800-249-1990
1.5	DATE OF PREPARATION:	May 4, 2025
	DATE OF LAST REVISION:	September 27, 2023

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is a moist black cake (solid) with no odor. Warning! Wet activated carbon removes oxygen from the air and can lower the concentration levels within confined spaces. Exposure can be irritating to eyes, respiratory system and skin. It is a non-flammable solid. Excessive airborne dust creates a dust explosion hazard. The Environmental effects of this product have not been investigated, however this product is not expected to have any adverse effects.

2.1 Classification of the mixture

This product does meet the definition of a hazardous substance or preparation as defined by 29 CFR 1910. 1200 and regulation (EU) No. 2020/878 and regulation (EC) No. 1272/2008.

Component(s) Contributing to Classification(s)

Resin, Anion Exchange

2.2 GHS Label elements, including precautionary statements

Pictogram(s):



Signal Word:

Warning!

GHS Hazard Classification(s):

Eye Irritation Category 2A

Hazard Statement(s):

H319: Causes eye irritation

Prevention Statement(s):

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response Statement(s):

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical advice/attention.

Storage Statement(s):

None applicable

Disposal Statement(s):

None applicable

2.3 Other Hazards

Endocrine Disruptor Information: This product does not contain chemicals on the Candidate List of substances of very high concern for Authorisation.

SAFETY DATA SHEET

ECOSORB® S-451

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

3.2 Mixtures

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	Index #	WT %	GHS CLASSIFICATION
Water	7732-18-5	231-791-2	Not Listed	57- 63%	NOT CLASSIFIED
Carbon, Activated	7440-44-0	231-153-3	Not Listed	20 - 30%	NOT CLASSIFIED
Resin, Anion Exchange	69011-15-0	684-849-8	Not Listed	10 – 15%	EYE IRRIT CAT 2A
Fiber, Cellulose	9004-34-6	232-674-9	Not Listed	2 - 5%	NOT CLASSIFIED
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

Additional Information: See SECTION 16 for full classification phrases.

SECTION 4 - FIRST-AID MEASURES

4.1 Description of first aid measures

Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take copy of label and SDS to health professional with contaminated individual.

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation persists.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

4.2 Most important symptoms and effects, both acute and delayed

Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. See section 11 for additional information.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None Known

4.3 Indication of immediate medical attention and special treatment needed

Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

5.1 Extinguishing media

As appropriate for surrounding fire. Use water, dry chemical, or CO2. Use water to cool fire-exposed containers.

5.2 Specific hazards arising from the chemical

Product is moist and dust-free. Clean up immediately or keep moist until cleanup can be initiated. Product is easily rewetted with a fine water mist. If product dries out and is allowed to become airborne, it may cause a dust explosion hazard when in high concentrations such as within confined spaces. Keep dust away from heat, sparks and flames.

Explosion Sensitivity to Mechanical Impact:

Not Sensitive.

Explosion Sensitivity to Static Discharge:

Sensitive (Air/Dust mixtures)

Minimum Ignition Energy (M.I.E.):

No Data at this time

5.3 Special firefighting Procedure

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

SAFETY DATA SHEET

ECOSORB® S-451

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Use appropriate respirator when ventilation is inadequate and use personal protective clothing as described in Section 8 of this safety data sheet. See section 11 for additional information on health hazards.

6.2 Environmental precautions

Do not let product enter drains, do not allow to sewers/surface or ground water. See Section 12, Ecological information.

6.3 Methods and material for containment and cleaning up

Avoid generating dust if product dries out - keep moist with water. Pick up released product with appropriate implements & return to original container if reusable, or dispose. Wet material may be slippery. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

7.1 Precautions for safe handling

Follow good handling and housekeeping practices. Avoid spills. Clean up spills while product is still moist to prevent dust and accumulations of dust, or generation of airborne dust. After handling, wash thoroughly with soap and water.

7.2 Conditions for safe storage, including any incompatibilities

Product can be rewet with a fine water mist to prevent dust. Static electricity can accumulate on dry material. Store in sealed containers in a clean, dry, well-ventilated area away from ignition sources, combustible materials and heat.

7.3 Specific end uses

See section 1.2.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

8.1. Control parameters

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA
Resin, Anion Exchange	069011-18-3	10 mg/m ³ Dust	15 mg/m ³ Total Dust
Carbon, Activated	7440-44-0	10 mg/m ³ Dust	15 mg/m ³ Total Dust
Fiber, Cellulose	9004-34-6	10 mg/m ³ Dust	15 mg/m ³ Total Dust
Water	7732-18-5	Not Listed	Not Listed

8.2 Exposure Controls

Currently, International exposure limits are established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below. Use local exhaust ventilation to control airborne dust. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable.

If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses are required. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use protective gloves as appropriate to minimize skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SAFETY DATA SHEET

ECOSORB® S-451

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

PHYSICAL STATE:	Solid (Moist cake)
APPEARANCE & ODOR:	Black moist cake with no odor.
ODOR THRESHOLD (PPM):	Not Available
pH:	Not Applicable
MELTING / FREEZING POINT (C°):	Not Applicable
BOILING POINT (C°):	Not Applicable
FLASH POINT:	Non-Flammable
FLAMMABILITY (solid, gas):	Not Applicable
FLAMMABLE LIMITS (in air by volume, %):	Not Applicable
VAPOR PRESSURE (mmHg):	Not Applicable
VAPOR DENSITY (AIR=1):	Not Applicable
RELATIVE DENSITY	Not Available
SOLUBILITY IN WATER (%)	Not Applicable
PARTITION COEFFICIENT: N-OCTANOL/WATER:	Not Applicable
AUTOIGNITION TEMPERATURE:	Not Applicable
DECOMPOSITION TEMPERATURE:	Not Applicable
VISCOSITY:	Not Applicable
EXPLOSIVE PROPERTIES:	Not Applicable
OXIDISING PROPERTIES:	Not Applicable

9.2.1 INFORMATION WITH REGARD TO PHYSICAL HAZARD CLASSES

EXPLOSIVES:	Not Available
AEROSOLS:	Not Available
OXIDISING GASES:	Not Available
GASES UNDER PRESSURE:	Not Available
FLAMMABLE LIQUIDS:	Not Available
FLAMMABLE SOLIDS:	Not Available
SELF-REACTIVE SUBSTANCES AND MIXTURES:	Not Available
PYROPHORIC LIQUIDS:	Not Available
PYROPHORIC SOLIDS:	Not Available
SELF-HEATING SUBSTANCES AND MIXTURES:	Not Available
SUBSTANCES AND MIXTURES, WHICH EMIT FLAMMABLE GASES IN CONTACT WITH WATER:	Not Available
OXIDISING LIQUID:	Not Available
OXIDISING SOLID:	Not Available
ORGANIC PEROXIDES:	Not Available
CORROSIVE TO METALS:	Not Available
DESENSITISED EXPLOSIVES:	Not Available
GASES UNDER PRESSURE:	Not Available

9.2.2 OTHER SAFETY CHARACTERISTICS

MECHANICAL SENSITIVITY:	Not Available
SELF-ACCELERATING POLYMERISATION TEMPERATURE:	Not Available
FORMATION OF EXPLOSIBLE DUST/AIR MIXTURES:	Not Available
ACID/ALKALINE RESERVE:	Not Available
EVAPORATION RATE:	Not Available
MISCIBILITY:	Not Available
CONDUCTIVITY:	Not Available
CORROSIVENESS:	Not Available
GAS GROUP:	Not Available
REDOX POTENTIAL:	Not Available
RADICAL FORMATION POTENTIAL:	Not Available
PHOTOCATALYTIC PROPERTIES:	Not Available
PACKING DENSITY:	Not Applicable
SPECIFIC GRAVITY 4°C: (Water = 1)	Not Applicable
VOC:	Not Applicable

SAFETY DATA SHEET

ECOSORB® S-451

SECTION 10 - STABILITY and REACTIVITY

10.1 Reactivity: See section 10.5.

10.2 Chemical Stability: Product is stable

10.3 Possibility of Hazardous Reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid: Contact with incompatible materials and dust generation.

10.5 Incompatible materials: Avoid contact with strong oxidizing agents such as ozone, chlorine, permanganate, sulfuric acid and nitric acid.

10.6 Hazardous Decomposition Products: Thermal decomposition (burning) may produce chlorinated hydrocarbons, aromatic compounds, hydrocarbons, hydrogen chloride, organic amines.

SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

TOXICITY DATA: There is no available data for the product, only for the ingredients

CAS# 7440-44-0 LC50, Inhalation - Rat >64,400 mg/m³

CAS# 7440-44-0 LD50, Oral - Rat >10,000 mg/kg

CAS# 9004-34-6 LD50, Oral - Rat >5,000 mg/m³

11.1.2 Mixtures

Acute toxicity	Based on available data, the classification criteria are not met
Skin corrosion / irritation	Based on available data, the classification criteria are not met
Serious eye damage / irritation	Eye Irritation Category 2A
Respiratory or skin sensitization	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met
Carcinogenicity	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met

Other Information

POTENTIAL HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE: Exposure can be irritating to eyes, respiratory system and skin.

INHALATION: Avoid use in confined spaces. Wet activated carbon can absorb and remove oxygen from the air causing a severe inhalation hazard to workers. Inhalation of dusts may cause nose, throat and respiratory tract irritation.

EYE: May cause mechanical irritation with pain and redness.

SKIN: May cause irritation. Prolonged skin contact may produce drying and redness.

INGESTION: Product is considered practically non-toxic if swallowed.

CHRONIC: None Known

SUSPECTED CANCER AGENT: None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

SENSITIZATION OF PRODUCT: This product is not considered a sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

11.2 INFORMATION ON OTHER HAZARD CLASSES WHICH RELATES TO ENDOCRINE DISRUPTING PROPERTIES:

No specific data available for this product

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

12.1 Toxicity

No data available for this product.

12.2 Persistence and degradability

No specific data available on this product.

12.3 Bioaccumulative potential

SAFETY DATA SHEET

ECOSORB® S-451

No specific data available on this product.

12.4 Mobility in soil

No specific data available on this product.

12.5 Results of PBT and vPvB assessment

No specific data available on this product.

12.6 Endocrine Disrupting Properties:

No specific data available on this product.

12.7 Other adverse effects

No specific data available on this product.

12.8 Water endangerment class

Not believed to be water endangering in accordance with EU Guideline 91/155-EWG. At present there are no ecotoxicological assessments for this product.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Non-Regulated Material

HAZARD CLASS NUMBER and DESCRIPTION: Not Applicable

UN IDENTIFICATION NUMBER: Not Applicable

PACKING GROUP: Not Applicable.

DOT LABEL(S) REQUIRED: Not Applicable

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): Not Applicable

MARINE POLLUTANT: None of the ingredients are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS:

This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is not classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is not classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

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

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows: None

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health: Yes Chronic Health: No Fire: No Reactivity: No

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ):

CERCLA Reportable Quantity (RQ), None.

CLEAN WATER ACT:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

SAFETY DATA SHEET

ECOSORB® S-451

STATE REGULATIONS: None.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): None of the ingredients are on the California Proposition 65 lists.

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product complies with WHMIS 2015 Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No 1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS or Exempt.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed or Exempt
Australian Inventory of Chemical Substances (AICS):	Listed or Exempt
Korean Existing Chemicals List (ECL):	Listed or Exempt
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed or Exempt
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed or Exempt
Swiss Giftlist List of Toxic Substances:	Listed or Exempt
U.S. TSCA:	Listed

15.2 Chemical safety assessment

A chemical safety assessment for this product has not been performed.

SECTION 16 - OTHER INFORMATION

HMIS Rating (Scale 0-4)

Health hazard: 1
Flammability: 0
Physical Hazard: 0

NFPA Rating (Scale 0-4)

Health hazard: 1
Flammability: 0
Physical Hazard: 0

Caution: HMIS and NFPA ratings are based on a 0-4 rating scale

0= Minimal Hazard

1= Slight

2= Moderate

3= High

4= Extreme

Abbreviations and acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
CFR	Code of Federal Regulations
DOT	Federal Department of Transportation
GHS	The Globally Harmonized System of Classification and Labelling of Chemicals
HMIS	Hazardous Material Identification System
HCS	Hazard Communication Standard
IARC	International Agency for Research on Cancer
IATA	The International Air Transport Association
ICAO	The International Civil Aviation Organization

SAFETY DATA SHEET

ECOSORB® S-451

IMDG	<i>International Maritime Dangerous Goods</i>
IMO	<i>International Maritime Organization</i>
LD50/LC50	<i>Lethal Concentration/Dose, 50 percent</i>
NFPA	<i>National Fire Protection Association</i>
NIOSH	<i>National Institute for Occupational Safety and Health</i>
NTP	<i>National Toxicology Program</i>
OSHA	<i>Occupational Safety and Health</i>
PEL	<i>OSHA Permissible Exposure Limit</i>
SARA	<i>Superfund Amendments and Reauthorization Act</i>
TLV	<i>ACGIH Threshold Limit Value</i>
TWA	<i>Time-Weighted Average</i>
Eye Irrit	<i>Eye Irritation</i>

PREPARED BY: Chris Eigbrett

MSDS to GHS Compliance

Disclaimer: Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for her/his particular purpose(s).

Revision History:

March 1 2017

- Document creation.

April 16 2017

- Updated CAS for Resin, Anion Exchange.

September 29, 2020

- Formula Update

October 27, 2020

- Formula Update

September 27, 2023

- Updated to comply with 2020/878. Updates to Section 2, 9, 11, 12, 16.

May 4, 2025

- SDS Review / Update

END OF SDS