SAFETY DATA SHEET

DREXEL LUM-BOR™ INSECTICIDE/FUNGICIDE

Section 1: Material Identification

Product Name: Drexel LUM-BOR™ Insecticide/Fungicide

EPA Reg No.: 19713-286

CAS NO: 12280-03-4

Formula: $Na_2B_8O_{13}\cdot 4H_2O$

Company: Drexel Chemical Company
1700 Channel Avenue
Memphis, TN 38106

Synonyms: Disodium Octaborate Tetrahydrate

Identifiers:

EINECS: 234-541-0
RTECS: VZ2275000
DOT label: Non-Regulated

Emergency Telephone Number:

CHEMTREC	Drexel Chemical Co.
Tel: 1-800-424-9300	901-774-4370

This product is an EPA FIFRA registered pesticide. Some of the classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see **Section 15. REGULATORY INFORMATION** for explanation.

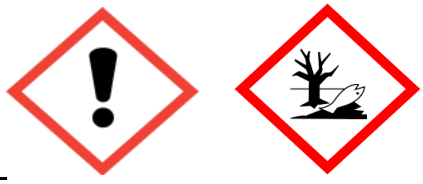
Section 2: Hazard Identification

(As defined by the OSHA Hazard Communication Standard, 29)

GHS Classification	Acute inhalation	Category 4
	Eye irritation	Category 2B
	Aquatic acute toxicity	Category 3

GHS label elements

Signal Word Warning



Hazard statements Harmful if inhaled
Causes eye irritation
Moderately toxic to aquatic life

Precautionary statements

Prevention Avoid breathing dust or vapors. Use only outdoors or in well-ventilated area.
Wash exposed skin thoroughly after handling.
Wear eye protection/face protection.
Prevent from entering into ditches, sewers, waterways and/or groundwater.
See Section 12, Ecological Information.

Response **If inhaled:** Remove person to fresh air and keep comfortable for breathing. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
If in eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

Storage Store in a cool, dry, well ventilated and secure area designated specifically for pesticides and away from heat sources. Keep in original containers and keep containers closed when not in use. Do not store in excessive heat. Do not store near children, food, foodstuffs, drugs or potable water supplies.

Disposal If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities.

Section 3: Composition Information

Components	% By Wt.	OSHA PEL:	ACGIH TLV:
Active Ingredient:			
Disodium Octaborate Tetrahydrate	98.0%	N/Av	5 mg/m^3
Inert Ingredients:	2.0%	N/A	N/A

Section 4: First-Aid Measures

Eye Contact: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes for at least 10 minutes. Obtain medical attention without delay, preferably from an ophthalmologist

If Swallowed: Call a poison control center or doctor immediately for treatment advice for ingestion of more than one teaspoon. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or

doctor. Do not give anything by mouth to an unconscious person. Have product label with you when calling a poison control center or doctor.

Skin Contact: Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Destroy contaminated leather items such as shoes, belts, and watchbands.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice if nose or throat irritation are observed.

Note to Physician: Observation only is required for adult ingestion of less than 6 grams of boron oxide. For ingestion in excess of 6 grams, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or patients with renal failure. Boron analyses of urine or blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment.

Section 5: Fire Fighting Measures

Fire Hazards: Boron is a flame retardant, fire hazard will involve surrounding materials.

Flammability classification (OSHA 29 CFR 1910.1200): Non-Combustible
Flash point: N/A
Lower flammable limit (% by volume): N/Av
Upper flammable limit (% by volume): N/Av

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Evacuate the area and fight the fire from upwind at a safe distance to avoid hazardous vapors or decomposition products. Dike and collect fire-extinguishing water to prevent environmental damage and excessive waste runoff.

Firefighting media: Use media suitable for surrounding fires including dry foam, dry chemical, carbon dioxide, or water fog when fighting fires involving this product. Do not use water jet, as this may spread burning material. Minimize the use of water to avoid environmental contamination. Contain all runoff.

Special Protective Equipment for Firefighters:
Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Use full face shield and operate in positive pressure mode. Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Hazardous Combustion Products: None from product.

(NFPA):	Health:	Flammability:	Reactivity:
	2	1	0

Section 6: Accidental Release Measures

Steps to be taken if Material is Released or Spilled:

- Avoid dust formation. Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Drexel Chemical Co. for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

Personal Precautions:

- Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to Section 7, Handling,

for additional precautionary measures. Ventilate area of spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Section 7: Handling and Storage

KEEP OUT OF REACH OF CHILDREN

Handling: **General Handling:** Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Do not swallow. Avoid breathing dust. Use with adequate ventilation. Wear long-sleeved shirt, long pants and shoes with socks when handling. Keep away from heat, sparks and flame. See Section 8, Exposure Controls and Personal Protection.

Storage: Store in a cool, dry, ventilated and secure area designated specifically for pesticides and away from heat sources. Keep in original containers and keep containers closed when not in use. Do not store in excessive heat. Do not store near children, food, foodstuffs, drugs or potable water supplies.

Section 8: Exposure Controls/ Personal Protection

Exposure Limits: TLV Sodium Octaborate Tetrahydrate 5 mg/m^3

Personal Protection:

Eye/Face Protection: Wear safety glasses with side shields or chemical splash goggles to prevent dust from entering the eyes. If using a full face shield, always use safety glasses or goggles along with the face shield to ensure adequate protection of the eyes.

Skin Protection: Use long-sleeved shirt, long pants, shoes and socks. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: If environment is excessively dusty, use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile/butadiene rubber (“nitrile” or “NBR”) or Polyvinyl chloride (“PVC” or “vinyl”).

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. When handling in enclosed areas, when large quantities of dusts are generated or prolonged exposure is possible in excess of the TLV, use a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls:

Ventilation: When handling this product proper ventilation is required to maintain exposure below the TLV. Ventilate all transport vehicles prior to unloading. Facilities storing or utilizing this material should be equipped with and eyewash facility and safety shower.

Section 9: Physical and Chemical Properties

Physical State:	Powder
Color:	White
Odor:	Odorless
Flash Point:	N/A
Vapor Pressure (mmHg):	Negligible @ 20°C
Boiling Point:	N/A
Vapor Density (air = 1):	N/A
Bulk Density (H_2O = 1):	N/Av
Freezing Point:	N/A
Solubility in water (wt. %):	Soluble
pH:	Neutral
Viscosity:	N/A
% Volatiles:	N/A

Section 10: Stability and Reactivity

Stability/Instability:	Stable under normal conditions.
Conditions to Avoid:	Keep this product away from moisture.
Incompatible Materials:	Avoid contact with strong reducing agents such as metal hydrides or alkali metals.
Hazardous Polymerization:	Will not occur.
Thermal Decomposition:	Decomposition products can include but are not limited to: Boranes, hydrogen, boron oxides.

Section 11: Toxicological Information

Data presented for Disodium Octaborate Tetrahydrate:

Acute Toxicity

Ingestion:

- Oral LD50, (rat): 2550 mg/kg

Dermal:

- Dermal LD50, (rabbit): >2,000 mg/kg

Inhalation:

- LC50, (rat): > 2.0 mg/L

Eye Irritation (rabbit):

- Mildly irritating.

Skin Irritation (rabbit):

- Non-irritant.

Sensitization Skin (Guinea Pig):

- Non-sensitizer.

Chronic Toxicity:

- No increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust.

Carcinogenicity

- Not likely to be carcinogenic in humans.

Teratogenicity, mutagenicity, and other reproductive effects: None known at normal exposure.

Section 12: Ecological Information

Boron (B) is the element in disodium octaborate tetrahydrate (LUM-BOR) which is used by convention to report borate product ecological effects. It occurs naturally in seawater at an average concentration of 5 mg B/L and generally occurs in freshwater at concentrations up to 1 mg B/L. In dilute aqueous solutions the predominant species present is dissociated boric acid. To convert disodium octaborate tetrahydrate into equivalent boron (B) content, multiply by 0.2096.

ENVIRONMENTAL FATE:

Boron is naturally occurring and ubiquitous in the environment. LUM-BOR decomposes in the environment to natural borate. In aqueous solution disodium octaborate tetrahydrate is converted substantially into undissociated boric acid. LUM-BOR is soluble in water and is leachable through normal soil.

Aquatic Toxicity:

- Rainbow Trout: 24 day LC50: (88 mg B/L)
- Daphnia magna: 24 hour EC50: (242 mg B/L)
- Green algae: 96 hour EC10: (24 mg B/L)

Section 13: Disposal Considerations

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Section 14: Transport Information

DOT: Non-Regulated-See 49 CFR 173.132 (b) (3) & 1712.1-1 Appendix A
IMDG: Non-Regulated

ICAO/IATA: Non-Regulated

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material

Section 15: Regulatory Information

OSHA Hazard Communication Standard:

- **This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.**
- **EPA FIFRA INFORMATION**
  This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemical. The hazard information required on the pesticide label is listed out below. The pesticide label also includes other important information, including directions for use.
- **EPA/CERCLA Reportable Quantity**: None Known

SARA/TITLE III:

- **Sec 302: Extremely Hazardous Substance Notification**: This material is not known to contain any Extremely Hazardous Substances.
- **Sec. 311/312. Hazard Categories:** Acute health hazard
  Chronic health hazard
- **Section 313 Toxic Chemical(s):** This material is not known to contain any Toxic Chemical constituents**.**
- **RCA Waste Code: Not applicable**

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

- This product is not listed.

Toxic Substances Control Act (TSCA):

- All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

Section 16: Other Information

Drexel Chemical Company recommends that each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown below. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.

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