

MATERIAL SAFETY DATA SHEET

ENSIGN 82.5% TURF & ORNAMENTAL FUNGICIDE

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

FORMULATED FOR:

LOVELAND PRODUCTS, INC.
P.O. Box 1286 • Greeley, CO 80632-1286

24-Hour Emergency Phone: 1-800-424-9300
Medical Emergencies: 1-866-944-8565
U.S. Coast Guard National Response Center: 1-800-424-8802

PRODUCT NAME: ENSIGN 82.5% TURF & ORNAMENTAL FUNGICIDE
CHEMICAL NAME: Chlorothalonil: Tetrachloroisophthalonitrile
CHEMICAL FAMILY: Chlorinated Benzonitrile Fungicide
EPA REG. NO.: 34704-965
MSDS Number: 000965-11-LPI

MSDS Revisions: Sections 1 and 4

Date of Issue: 01/19/11

Supersedes: 03/26/08

2. HAZARDS IDENTIFICATION SUMMARY

KEEP OUT OF REACH OF CHILDREN – DANGER - PELIGRO – Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle (If you do not understand the label, find someone to explain it to you in detail.) Corrosive. Causes irreversible eye damage. May be fatal if inhaled. Causes skin irritation. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This product is a brown water dispersible granule with slight odor. Primary routes of entry are skin contact, eye contact, and inhalation.

NOTES TO PHYSICIAN: Possible mucosal damage may contraindicate the use of gastric lavage; chemical absorbents are recommended to reduce absorption of product. Persons suffering with temporary allergic skin reactions may respond to treatment with oral antihistamines and topical or oral steroids. If in eyes, the upper and lower lids should be retracted and irrigated, and any particulate matter should be carefully removed from the conjunctival fornix. Irrigation should be continued until the conjunctival sac is neutral on pH testing with universal indicator paper. Fluorescein staining is required to reveal the extent of corneal or conjunctival epithelial loss. Topical antibiotic ointments are indicated when corneal epithelial damage is identified. Use of steroid eye drops is not advocated unless expressly requested by an Ophthalmologist.

3. COMPOSITION, INFORMATION ON INGREDIENTS

<u>Chemical Ingredients:</u>	<u>Percentage by Weight:</u>	<u>CAS No.</u>	<u>TLV (Units)</u>
Chlorothalonil	82.50	1897-45-6	not listed
Other Ingredients	10.00		

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Rinse eye only with water. Do not put eye drops, drugs, or ointments in eyes unless specifically recommended by a medical doctor or a poison control center. Call a poison control center or doctor for treatment advice.

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 on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565. Have the product label or container with you when calling a poison control center or doctor, or going for treatment.

5. FIRE FIGHTING MEASURES

FLASH POINT (°F/Test Method): Does not flash.
FLAMMABLE LIMITS (LFL & UFL): Not applicable.
EXTINGUISHING MEDIA: CO₂, foam, dry chemical or water.
HAZARDOUS COMBUSTION PRODUCTS: May thermally decompose under fire conditions emitting irritating and possibly toxic gases and vapors generated by thermal decomposition or combustion.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus with full protective clothing. Evacuate area and fight fire from a safe distance. Minimize the amount of water used for firefighting. Equipment should be completely decontaminated after use.
UNUSUAL FIRE AND EXPLOSION HAZARDS: If water is used to fight fire or cool containers, contain runoff, using dikes to prevent contamination of water supplies. Avoid using heavy water streams.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Small spill or leak: Avoid bodily contact. Confine spill by diking with suitable absorbent material. Pick up absorbed spill and place in a suitable container for proper disposal in accordance with all Federal, State and Local regulations.

Large spill or leak: Follow basic procedure as outlined in small spill or leak steps above. To clean and neutralize spill area, tools and equipment, scrub with a solution of water and detergent. Absorb any excess liquid and add to the drums of waste collected. Repeat if necessary. Dispose in accordance with Federal, State and Local regulations.

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

7. HANDLING AND STORAGE

HANDLING: Do not breathe dusts, vapors or spray mist. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE: Store in a dry place. Do not contaminate water, food or feed by storage or disposal.

Personal Protective Equipment (PPE): Mixers, loaders applicators and all other handlers must wear: Coveralls over short-sleeved shirt and short pants, chemical resistant gloves made of any water-proof material - Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or Viton®), chemical resistant footwear plus socks, protective eyewear, chemical resistant headgear for overhead exposure, chemical resistant apron when cleaning equipment, mixing, or loading and NIOSH approved dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with N, R, P, or HE filter. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. DO NOT reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets with requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS. Control airborne concentrations below the exposure guidelines. Local exhaust may be necessary when used in a confined area. Eye wash facility and safety shower should be available.

RESPIRATORY PROTECTION: Wear a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any N, R, P, or HE prefilter.

EYE PROTECTION: Chemical goggles or shielded safety glasses.

SKIN PROTECTION: Wear protective clothing: coveralls over short-sleeved shirts and short pants, shoes plus socks. Wear waterproof gloves.

	OSHA PEL 8 hr TWA	ACGIH TLV-TWA
Nuisance particulates	15 mg/m ³ (total dust)	not listed
Crystalline Silica, Quartz	10 mg/m ³ (%SiO ₂ +2)	0.05 mg/m ³ (respirable fraction)

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Brown water dispersible granules with slight odor	SOLUBILITY: Disperses
SPECIFIC GRAVITY (Water = 1): 0.74 g/cm ³	pH: 8-10
VAPOR PRESSURE: 5.72 x 10 ⁻⁷ torr (based on technical data)	BOILING POINT: >662°F / >350°C (based on technical data)
PERCENT VOLATILE (by volume): Not established	EVAPORATION RATE: Not established

Note: These physical data are typical values based on material tested but may vary from sample to sample.
Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

STABILITY: Stable

INCOMPATIBILITY: Not known.

HAZARDOUS DECOMPOSITION PRODUCTS: May thermally decompose under fire conditions emitting irritating and possibly toxic gases and vapors generated by thermal decomposition or combustion

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD₅₀ (male rat): >5,000 mg/kg	Acute Dermal LD₅₀ (rabbit): >2000 mg/kg
Eye Irritation (rabbit): Severe eye irritant (Category 1)	Skin Irritation (rabbit): Not established
Inhalation LC₅₀ (rat): Not established	Skin Sensitization (guinea pig): Skin sensitizer
Carcinogenic Potential: None listed in OSHA, NTP, ACGIH or IARC.	

12. ECOLOGICAL INFORMATION

This product is toxic to aquatic invertebrates and wildlife. DO NOT apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. DO NOT contaminate water when disposing of equipment wash water or rinsate. This chemical is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. This chemical can contaminate surface water through spray drift. Under some conditions, it may also have a high potential for runoff into surface water for several days to weeks after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlying extremely shallow ground water, areas with infield canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlying tile drainage systems that drain to surface water.

13. DISPOSAL CONSIDERATIONS

Do not reuse empty container. **Non-refillable container:** Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at www.acrecycle.org. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **For packages up to 5 gallons: Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. **For packages greater than 5 gallons and less than 56 gallons: Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. **For packages greater than 56 gallons:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. **For refillable containers:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

14. TRANSPORT INFORMATION

DOT Shipping Description: NOT REGULATED BY USDOT FOR SURFACE TRANSPORTATION

U.S. Surface Freight Classification: INSECTICIDES OR FUNGICIDES, INSECT OR ANIMAL REPELLENTS; NOI; OTHER THAN POISON (NMFC 102120; CLASS: 60)

Consult appropriate ICAO/IATA and IMDG regulations for shipment requirements in the Air and Maritime shipping modes.

15. REGULATORY INFORMATION**NFPA & HMIS Hazard Ratings:****NFPA**

3	Health	0	Least
1	Flammability	1	Slight
0	Instability	2	Moderate
		3	High
		4	Severe

HMIS

3	Health
1	Flammability
0	Reactivity
H	PPE

SARA Hazard Notification/Reporting

SARA Title III Hazard Category:	Immediate	<u>Y</u>	Fire	<u>N</u>	Sudden Release of Pressure	<u>N</u>
	Delayed	<u>Y</u>	Reactive	<u>N</u>		

Reportable Quantity (RQ) under U.S. CERCLA: Not listed

SARA, Title III, Section 313: Chlorothalonil (CAS: 1897-45-6) 86.5%

RCRA Waste Code: Not listed

CA Proposition 65: WARNING: This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

16. OTHER INFORMATION

MSDS STATUS: Sections 1 and 4 revised

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental/ Regulatory Services

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