

# MATERIAL SAFETY DATA SHEET

# TRIFLURALIN HF

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:** TRIFLURALIN HF  
**CHEMICAL NAME:** Trifluralin:  $\alpha, \alpha, \alpha$ -trifluoro-2, 6-dinitro-*N, N*-dipropyl-*p*-toluidine  
**CHEMICAL FAMILY:** Trifluorodinitrotoluidine Herbicide  
**EPA REG. NO.:** 34704-792  
**MSDS Number:** 000792-12-LPI      **MSDS Revisions:** Sections 3, 4, 8, 11      **Date of Issue:** 01/10/12      **Supersedes:** 03/04/09

## 2. HAZARDS IDENTIFICATION SUMMARY

**KEEP OUT OF REACH OF CHILDREN - CAUTION** – Causes moderate eye injury. Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Avoid contact with eyes, skin or clothing.

**NOTE TO PHYSICIAN:** TRIFLURALIN HF contains naphthalene, which has been determined to be a possible human carcinogen (Group 2B). Trifluralin is not anticipated to be a carcinogenic risk to humans. Pre-existing skin disorders may be aggravated by exposure.  
This product is a clear, orange liquid with aromatic odor.

## 3. COMPOSITION, INFORMATION ON INGREDIENTS

<u>Chemical Ingredients:</u>	<u>Percentage by Weight:</u>	<u>CAS No.</u>	<u>TLV (Units)</u>
Trifluralin	43.00	1582-09-8	none established
Inert Ingredients, including Naphthalene	57.00	91-20-3	10 mg/m <sup>3</sup>

## 4. FIRST AID MEASURES

**If swallowed:** Call a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

**If in eyes:** Hold eye open and rinse slowly and gently with water 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for 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.

**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.

Call a poison control center or doctor immediately 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):** >210°F / >98°C (PMCC)  
**FLAMMABLE LIMITS (LFL & UFL):** LFL: 1.8%; UFL: 11.8% (Based on the solvent)  
**EXTINGUISHING MEDIA:** Use medium appropriate to surrounding fire. Dry chemical, carbon dioxide, foam, water spray or fog.  
**HAZARDOUS COMBUSTION PRODUCTS:** May include but are not limited to oxides of carbon, oxides of nitrogen and fluorinated hydrocarbons.  
**SPECIAL FIRE FIGHTING PROCEDURES:** May emit toxic fumes. Wear self-contained breathing apparatus and full protective gear.  
**UNUSUAL FIRE AND EXPLOSION HAZARDS:** If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Do not allow water runoff to enter nearby streams, ponds or lakes. Keep containers cool with water spray to avoid possible explosion due to internal pressure buildup.

## 6. ACCIDENTAL RELEASE MEASURES

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

In case of leak or spill, contain by absorbing spilled liquid with clay or other absorbent material; scoop or sweep up material and place in a container for possible land application according to label use or for proper disposal. Wash the spill area with water containing a strong detergent. Check local, state and federal regulations for proper disposal.

**CAUTION:** Keep spills and cleaning runoff from flowing onto adjacent land, or into municipal sewers and open bodies of water.

**7. HANDLING AND STORAGE**

**HANDLING:** Wash hands after handling, and 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. See section 8 for PPE. Keep away from children.

**STORAGE:** Avoid freezing. Do not store below 40°F / 4.5°C. If frozen, poor weed control may result. Store in a safe manner. Store in original container only. Keep container tightly closed when not in use. Do not use or store near heat or open flame. Do not contaminate water, food or feed by storage or disposal.

**Personal Protective Equipment: Applicators and other handlers must wear:** long sleeved shirt and long pants, chemical resistant gloves such as barrier laminate or Viton® and shoes plus socks. Follow manufacturer's instructions for cleaning and maintaining PPE. If no 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.

**RESPIRATORY PROTECTION:** Not normally required, if vapors exceed acceptable levels, wear a NIOSH approved pesticide respirator with cartridges for pesticide vapors.

**EYE PROTECTION:** Chemical goggles or shielded safety glasses.

**SKIN PROTECTION:** Wear protective clothing: long-sleeved shirts and pants, hat, rubber boots with socks. Wear rubber or chemical-resistant gloves.

	<b>OSHA PEL 8 hr TWA</b>	<b>ACGIH TLV-TWA</b>
Naphthalene	50 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> (Skin)

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>APPEARANCE AND ODOR:</b> Clear, orange liquid with aromatic odor.	<b>SOLUBILITY:</b> Emulsifies
<b>SPECIFIC GRAVITY (Water = 1):</b> 1.12 g/ml	<b>pH:</b> 5.0 (50% solution)
<b>VAPOR PRESSURE:</b> <1 mm Hg @ 68°F / 20°C	<b>BULK DENSITY:</b> 9.35 lbs/gal.
<b>PERCENT VOLATILE (by volume):</b> Not established	<b>BOILING POINT:</b> (solvent) 450 - 527°F (232 - 275°C)
<b>Note:</b> 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.	<b>EVAPORATION RATE:</b> Not established

**10. STABILITY AND REACTIVITY**

**STABILITY:** Unstable at elevated temperatures. **CONDITIONS TO AVOID:** Excessive heat and avoid freezing.

**INCOMPATIBILITY:** Strong oxidizers.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Can include but are not limited to oxides of nitrogen and carbon, fluorinated hydrocarbons, and hydrogen fluoride. Toxic flammable gases can be released during decomposition.

**HAZARDOUS POLYMERIZATION:** Will not occur.

**11. TOXICOLOGICAL INFORMATION**

<b>Acute Oral LD<sub>50</sub> (male rat):</b> > 5,000 mg/kg	<b>Acute Dermal LD<sub>50</sub> (rabbit):</b> >2,000 mg/kg
<b>Eye Irritation (rabbit):</b> Causes moderate eye injury	<b>Skin Irritation (rabbit):</b> Causes slight irritation
<b>Inhalation LC<sub>50</sub> (male rat):</b> >7.74 mg/L (4 HR).	<b>Skin Sensitization (guinea pig):</b> Sensitizer
<b>Carcinogenic Potential:</b> Naphthalene has been determined to be a Possible Human Carcinogen (Group 2B) by IARC; Confirmed Animal Carcinogen with Unknown Relevance to Humans by ACGIH (A3); Reasonably Anticipated to Be a Human Carcinogen (NTP-R) by NTP; and Cannot Be Determined (EPA-CBD) by US EPA.	

**12. ECOLOGICAL INFORMATION**

This pesticide is extremely toxic to freshwater marine and estuarine fish and aquatic invertebrates including shrimp and oyster. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply in a manner that will directly expose canals, lakes streams, ponds, marshes or estuaries to aerial drift. Do not contaminate water when disposing of equipment wash water. Do not apply when weather conditions favor drift from target area.

**13. DISPOSAL CONSIDERATIONS**

**PESTICIDE DISPOSAL**—Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. **CONTAINER HANDLING:** 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](http://www.acrecycle.org). If not recycled, then puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke. 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 or 50 lbs: 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. Turn the container over onto its other 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 square bottom caged totes greater than 55 gals.: Triple rinse or 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. Fill the container about 1/4 full with water, rinsing down all sides inside the container thoroughly. Recirculate water with the pump for 2 minutes. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this 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. Do not contaminate water, food or feed by storage or disposal.

**14. TRANSPORT INFORMATION**

**DOT Shipping Description:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, UN3082, III (TRIFLURALIN) ERG GUIDE 171  
**U.S. Surface Freight Classification:** COMPOUND, TREE OR WEED KILLING, NOI (NMFC 50320, SUB 2: CLASS 60)  
**Consult appropriate ICAO/IATA and IMDG regulations for shipment requirements in the Air and Maritime shipping modes.**

**15. REGULATORY INFORMATION**

<b>NFPA &amp; HMIS Hazard Ratings:</b>	<b>NFPA</b>		<b>HMIS</b>
	2 Health	0 Least	2 Health
	1 Flammability	1 Slight	1 Flammability
	0 Instability	2 Moderate	0 Reactivity
		3 High	1 PPE
		4 Severe	

**SARA Hazard Notification/Reporting**

<b>SARA Title III Hazard Category:</b>	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:** Trifluralin (CAS: 1582-09-8) 10 lbs.

**SARA, Title III, Section 313:** Trifluralin (CAS: 1582-09-8) 43.0% [TRI Threshold 100 lbs.]; Naphthalene (CAS: 91-20-3) 7.0%

**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 3, 4, 8, and 11 revised

**PREPARED BY:** Registrations and Regulatory Affairs

**REVIEWED BY:** Environmental/ Regulatory Services

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