

MATERIAL SAFETY DATA SHEET

CROSSBOW* L HERBICIDE

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: 1-800-992-5994
U.S. Coast Guard National Response Center: 1-800-424-8802

PRODUCT NAME: CROSSBOW* L HERBICIDE
CHEMICAL NAME: 2,4-Dichlorophenoxyacetic acid, butoxyethyl ester; 3,5,6-Trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester
CHEMICAL FAMILY: Chlorinated Phenoxy-Systemic Herbicide
EPA REG. NO.: 62719-260-34704
MSDS Number: 62719260-09-LPI **MSDS Revisions:** Sections 2, 4, 7, 8, 13 **Date of Issue:** 08/28/09 **Supersedes:** 06/26/08

2. HAZARDS IDENTIFICATION SUMMARY

KEEP OUT OF REACH OF CHILDREN - CAUTION – Harmful if swallowed. Causes moderate eye irritation. Prolonged or frequently repeated skin contact may cause allergic skin reaction in some individuals. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

This product is a reddish brown liquid with sweet odor.

3. COMPOSITION, INFORMATION ON INGREDIENTS

<u>Chemical Ingredients:</u>	<u>Percentage by Weight:</u>	<u>CAS No.</u>	<u>TLV (Units)</u>
2,4-D butoxyethyl ester ¹	34.40	1929-73-3	none established
Triclopyr butoxyethyl ester ²	16.50	64700-56-7	none established
Inert Ingredients, including Kerosene	49.10	8008-20-6	200 mg/m ³ (Skin)

4. FIRST AID MEASURES

If swallowed: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a Poison Control Center or doctor. Do not give any liquid to the person. 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.
NOTE TO PHYSICIAN: This product may pose and aspiration pneumonia hazard. Contains petroleum distillates.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: **1-800-992-5994**. 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): 148°F / 64°C (Seta flash)
FLAMMABLE LIMITS (LFL & UFL): LFL: Not established; UFL: Not established
EXTINGUISHING MEDIA: Water fog, foam, CO₂, dry chemical.
HAZARDOUS COMBUSTION PRODUCTS: Noxious fumes under fire conditions.
SPECIAL FIRE FIGHTING PROCEDURES: May emit noxious fumes. Wear self-contained breathing apparatus and full protective gear.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustible. 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. Dike area in case of large spills. Do not use water for cleanup. 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. Keep away from children.

STORAGE: Store in original container only. Store above 10°F/-12°C or agitate before use. Do not store near heat or open flame. Do not contaminate water, food, or feed by storage or disposal.

Personal Protective Equipment (PPE): All mixers, loaders, applicators, flaggers, and other handlers must wear: long sleeved shirt and long pants, shoes plus socks, chemical-resistant gloves made of any waterproof material such as barrier laminate, nitrile rubber, neoprene rubber, and Viton®, protective eyewear, chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate. 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. After each day of use, clothing or PPE must not be reused until it has been cleaned.

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. Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)]

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.

	OSHA PEL 8 hr TWA	ACGIH TLV-TWA
Kerosene	not listed	200 mg/m ³ (Skin) (P) ^x
2,4-D Acid	10 mg/m ³	10 mg/m ³

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Reddish brown liquid with sweet odor. **SOLUBILITY:** Emulsifies

SPECIFIC GRAVITY (Water = 1): 1.013 g/ml **BULK DENSITY:** 8.45 lbs/gal. **pH:** Not established

VAPOR PRESSURE: (Kerosene): 0.1 mm Hg @ 100°F/37.8°C **BOILING POINT:** (Kerosene): >347°F/>175°C

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 **CONDITIONS TO AVOID:** Avoid temperatures above or near flash point.

INCOMPATIBILITY: Acids, bases, and oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Noxious fumes may be formed in a fire situation.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD₅₀ (rat): 1000-2589 mg/kg **Acute Dermal LD₅₀ (rabbit):** >5000 mg/kg

Eye Irritation (rabbit): Causes moderate eye irritation **Skin Irritation (rabbit):** May cause moderate irritation

Inhalation LC₅₀ (rat): 5 mg/L (male); >5 mg/L (female) (4 HR). **Skin Sensitization (guinea pig):** Not established

Carcinogenic Potential: 2,4-D Acid has been determined to be a possible human carcinogen (Group 2B) by IARC; not classifiable as a human carcinogen by ACGIH; Kerosene is a confirmed animal carcinogen with unknown relevance to humans by ACGIH.

12. ECOLOGICAL INFORMATION

This product is toxic to fish and aquatic organisms. Drift or runoff may adversely affect fish and non-target plants. 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 contaminate water when cleaning equipment or disposing of equipment wash waters.

Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent Contamination of groundwater supplies. Triclopyr has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow may result in groundwater contamination.

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 the label instructions, contact your State Pesticide or Environmental Control Agency, or the hazardous waste representative at the nearest EPA Regional Office for guidance. **Containers 5 gallons or less: Container Reuse:** Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **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. **Refillable Containers larger than 5 gallons: Container Reuse:** Refillable container. 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. container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. **Non-refillable containers larger than 5 gallons: Container Reuse:** Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **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. Do not contaminate water, food, or feed by storage or disposal.

14. TRANSPORT INFORMATION

DOT Shipping Description: LESS THAN 55 GALLONS: NOT REGULATED BY USDOT

DOT Shipping Description: 55 GALLONS AND ABOVE: RQ ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D ACID), 9, UN3082, 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

NFPA & HMIS Hazard Ratings:		NFPA		HMIS
1	Health	0	Least	1 Health
2	Flammability	1	Slight	2 Flammability
0	Instability	2	Moderate	0 Reactivity
		3	High	G PPE
		4	Severe	

SARA Hazard Notification/Reporting

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

Reportable Quantity (RQ) under U.S. CERCLA: 2,4-D butoxyethyl ester (CAS: 1929-73-3) 100 lbs.

SARA, Title III, Section 313: 2,4-D butoxyethyl ester (CAS: 1929-73-3) 34.4%

RCRA Waste Code: Not listed

CA Proposition 65: Not listed

16. OTHER INFORMATION

MSDS STATUS: Sections 2, 4, 7, 8, 13 revised

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental/ Regulatory Services

¹2,4-D Acid equivalent: 23.7%; ²lb/gal. ²Triclopyr acid equivalent: 11.9%; 1 lb/gal. *Crossbow is a trademark of Dow AgroSciences, LLC

^X(P): Avoid prolonged and repeated skin contact which can lead to diesel fuels dermal irritation and may be associated with an increased risk of skin cancer.

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