

# MATERIAL SAFETY DATA SHEET



## CROSSBOW\* Weed & Brush Killer

General Phone: 1-800-258-3033  
Emergency Phone: 517-636-4400  
DowElanco • Indianapolis, IN 46268

EPA Reg. Number: 62719-260  
Effective Date: February 2, 1995  
Product Code: 1662  
MSDS Number: 1715  
Supersedes:

### 1. INGREDIENTS: (% w/w, unless otherwise noted)

2,4-Dichlorophenoxyacetic acid, butoxyethyl ester  
CAS# 001929-73-3 ..... 34.4%  
3,5,6-Trichloro-2-pyridinyloxyacetic acid, butoxyethyl  
ester ..... CAS# 064700-56-7 ..... 16.5%  
Other ingredients, including: ..... 49.1%  
Kerosene CAS# 008008-20-6  
Proprietary surfactants

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not "Hazardous" per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

### 2. PHYSICAL DATA:

**BOILING POINT:** >175°C (kerosene)  
**VAPOR PRESSURE:** 0.1mm @37.8°C (kerosene)  
**VAPOR DENSITY:** 4.7 (kerosene)  
**SOLUBILITY IN WATER:** Forms an emulsion  
**SPECIFIC GRAVITY:** 1.013 @ 20C/20°C  
**APPEARANCE:** Reddish brown liquid.  
**ODOR:** Sweet odor.

### 3. FIRE AND EXPLOSION HAZARD DATA:

**FLASH POINT:** 148°F, 64.4°C  
**METHOD USED:** Setaflash.  
**FLAMMABLE LIMITS:**  
LFL: Not determined.  
UFL: Not determined.  
**EXTINGUISHING MEDIA:** Water fog, foam, CO2, dry chemical.  
**FIRE & EXPLOSION HAZARDS:** Noxious fumes under fire conditions. Contain water from fire fighting to prevent entry to water supplies.  
**FIRE-FIGHTING EQUIPMENT:** Use positive pressure self-contained breathing apparatus and full protective clothing.

### 4. REACTIVITY DATA:

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

**INCOMPATIBILITY:** (SPECIFIC MATERIALS TO AVOID)  
Acid, base and oxidizing materials.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Noxious fumes, nitrogen oxide, hydrogen chloride and phosgene may result under fire conditions.

**HAZARDOUS POLYMERIZATION:** Will not occur.

### 5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

**ACTION TO TAKE FOR SPILLS/LEAKS:** Use appropriate safety equipment. Dike large spills. Absorb spills with inert dry material such as sand or sawdust. Do not use water for cleanup.

**DISPOSAL METHOD:** If 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.

### 6. HEALTH HAZARD DATA:

**EYE:** May cause moderate eye irritation. Corneal injury is unlikely.

**SKIN CONTACT:** Prolonged exposure may cause skin irritation. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals.

**SKIN ABSORPTION:** A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Repeated skin exposure may result in absorption of harmful amounts. The LD50 for skin absorption in rabbits is greater than 2000 mg/kg.

**INGESTION:** Single dose oral toxicity is low. The oral LD50 for male rats is 2589 mg/kg and for female rats is 2398 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury, swallowing amounts larger than that may cause injury. If aspirated (liquid enters the lung), may cause lung damage or even death due to chemical pneumonia.

**INHALATION:** Excessive exposure may cause irritation to upper respiratory tract. Signs and symptoms of excessive exposure may be central nervous system effects. The LC50 for male rats is approximately 5 mg/L and for female rats is greater than 5 mg/L.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** Excessive exposure may cause liver, kidney, blood, gastrointestinal, muscular and respiratory effects.

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**CANCER INFORMATION:** Triclopyr did not cause cancer in long-term animal studies. Various animal cancer tests have shown no reliably positive association between 2,4-D exposure and cancer. Epidemiology studies on 2,4-D use have been both positive and negative with the majority being negative.

**TERATOLOGY (BIRTH DEFECTS):** Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother.

**REPRODUCTIVE EFFECTS.** In animal studies, triclopyr has been shown not to interfere with reproduction. Excessive dietary levels of 2,4-D acid have caused decreased weight and survival in offspring in a rat reproduction study.

**MUTAGENICITY (EFFECTS ON GENETIC MATERIAL):** Results of In-Vitro ("Test-tube") mutagenicity tests and mutagenicity tests in animals have both been inconclusive.

### 7. FIRST AID:

**EYES:** Flush immediately with plenty of water. Get medical attention if irritation persists.

**SKIN:** Wash off in flowing water or shower. Get medical attention if irritation persists.

**INGESTION:** Do not induce vomiting. Call a physician or Poison Control Center.

**INHALATION:** Remove to fresh air if effects occur. Consult a physician.

**NOTE TO PHYSICIAN:** The decision of whether to induce vomiting or not should be made by an attending physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote.

Supportive care: Treatment based on judgment of the physician in response to reactions of the patient.

### 8. HANDLING PRECAUTIONS:

**EXPOSURE GUIDELINE(S):** 3,5,6-Trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester: the Dow Industrial Hygiene Guide is 2 mg/m<sup>3</sup> as the acid equivalent, skin. Kerosene: the Dow Industrial Hygiene Guide is 10 mg/m<sup>3</sup>. ACGIH TLV and OSHA PEL are 10 mg/m<sup>3</sup> for 2,4-D acid.

**VENTILATION:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator.

**SKIN PROTECTION:** For brief contact, no precautions other than clean body-covering clothing should be needed. Use impervious gloves when prolonged or frequently repeated contact could occur.

**EYE PROTECTION:** Use safety glasses. Where contact with this material is likely, chemical goggles are recommended because eye contact may cause discomfort even though it is unlikely to cause injury.

### 9. ADDITIONAL INFORMATION:

#### **SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:**

See label. Keep out of reach of children. Harmful if swallowed, inhaled, or absorbed through skin. Causes eye irritation. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. Wash thoroughly with soap and water after handling and before eating or smoking. Remove and wash contaminated clothing before reuse. Keep away from open flame.

**MSDS STATUS:** Revised Regulatory Information.

### REGULATORY INFORMATION:

(Not meant to be all-inclusive—selected regulations represented).

**NOTICE:** The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See MSD Sheet for health and safety information.

**SARA 313 INFORMATION:** This product contains the following substances subject to the reporting requirements

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of Section 313 of Title III of the Superfund Amendments and Re-Authorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
2,4-D butoxyethyl ester .....	001929-73-3 .....	34.4 %

**SARA HAZARD CATEGORY:** This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Re-Authorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

- An immediate health hazard.
- A delayed health hazard.
- A fire hazard.

**TOXIC SUBSTANCES CONTROL ACT (TSCA):** All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

**OSHA HAZARD COMMUNICATION STANDARD:** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**STATE RIGHT-TO-KNOW:** The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in Section 1 of the MSDS.

<u>Chemical Name</u>	<u>CAS Number</u>	<u>List</u>
2,4-D butoxyethyl ester .....	001929-73-3 .....	NJ3, PA1, PA3
Kerosene.....	008008-20-6 .....	NJ3, PA1

NJ3=New Jersey Workplace Hazardous Substance

(present at greater than or equal to 1.0%).

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

**NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)**

**RATINGS:**

<b>Category</b>	<b>Rating</b>
Health.....	1
Flammability .....	2
Reactivity .....	0

The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult DowElanco For Further Information.