

MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

Effective Date: 2/11/02
Product Code: 41753
MSDS: 004778

PATHFINDER* II HERBICIDE

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Pathfinder* II Herbicide

COMPANY IDENTIFICATION:

Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. COMPOSITION/INFORMATION ON INGREDIENTS:

Triclopyr: ((3,5,6-trichloro-2-pyridinyl)oxy)acetic acid, butoxyethyl ester CAS# 064700-56-7 13.6%
Inert Ingredients, Total, Including: Proprietary Solvent 86.4%

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.

3. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Hazardous Chemical. Yellow to amber liquid. May cause eye and skin irritation. LD₅₀ for skin absorption in rabbits is >2000 mg/kg. Oral LD₅₀ for rats is 2389 mg/kg (males) and 1000 mg/kg (females). LC₅₀ for rats is >5.0 mg/L for 4 hours. Toxic to aquatic organisms.

EMERGENCY PHONE NUMBER: 800-992-5994

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYE: May cause slight temporary eye irritation. Corneal injury is unlikely. Vapor may cause eye irritation experienced as mild discomfort and redness.

SKIN: Prolonged contact may cause skin irritation with local redness. Repeated exposure may cause irritation, even a burn. Repeated contact may cause drying or flaking of the skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rabbits is >2000 mg/kg. Did not cause allergic skin reactions when tested in guinea pigs.

INGESTION: Low toxicity if swallowed. The oral LD₅₀ for rats was 2389 mg/kg (males) and 1000 mg/kg (females). Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

INHALATION: The LC₅₀ for rats is >5.0 mg/L for 4 hours. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause central nervous system effects. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: For triclopyr butoxy ether ester, in animals, effects have been reported on the following organs: blood, kidney and liver.

CANCER INFORMATION: Triclopyr butoxyethyl ester did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): For triclopyr butoxyethyl ester, 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: For triclopyr butoxyethyl ester, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

4. FIRST AID:

EYES: Flush eyes thoroughly with water for several minutes. Remove contact lenses after initial 1-2 minutes and continue flushing for several additional minutes.

SKIN: Wash skin with plenty of water.

INGESTION: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

INHALATION: Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

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NOTE TO PHYSICIAN: The decision of whether to induce vomiting or not should be made by a 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. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES:

FLASH POINT: 350°F, 177°C

METHOD USED: SFCC

FLAMMABLE LIMITS

LFL: Not determined

UFL: Not determined

EXTINGUISHING MEDIA: Water fog, foam.

FIRE & EXPLOSION HAZARDS: May emit toxic, irritating vapors if involved in a fire.

FIRE-FIGHTING EQUIPMENT: Use positive pressure self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Dike large spills. Keep out of streams and domestic water supplies. Absorb small spills in inert material such as dry sand. Eliminate all ignition sources. Report large spills to Dow AgroSciences at 800-992-5994.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep out of reach of children. Harmful if swallowed, inhaled, or absorbed through skin. Avoid contact with skin, eyes, and clothing. Avoid breathing vapor or spray mist. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Store in the original container with the lid tightly closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where a potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINE(S):

3,5,6-trichloro-2-pyridinyloxyacetic acid, Dowanol EB ester: Dow AgroSciences Industrial Hygiene Guide is 2 mg/M3 as acid equivalent, Skin.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guideline.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

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

SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use chemically protective clothing resistant to this material. Selection of specific items such as faceshield, gloves, boots, apron or full-body suit will depend on operation.

EYE/FACE PROTECTION: Use safety glasses. If exposure causes eye discomfort, use a NIOSH approved full-face respirator.

APPLICATORS AND ALL OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment recommendations.

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9. PHYSICAL AND CHEMICAL PROPERTIES:

BOILING POINT: 425°F (218.5°C) @ 20mmHg
VAPOR PRESSURE: Not determined
VAPOR DENSITY: Not determined
SOLUBILITY IN WATER: Insoluble
SPECIFIC GRAVITY: 0.920 at 20°C (68°F)
APPEARANCE: Yellow to amber liquid
ODOR: Minimal
FREEZING POINT: -10°C, 13°F

10. STABILITY AND REACTIVITY:

STABILITY: (CONDITIONS TO AVOID) Stable under normal storage and handling conditions. Product will burn; keep away from heat and open flame.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Acids, bases, and strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, nitrogen oxides, hydrogen chloride, and phosgene may be formed if product is involved in fire.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

MUTAGENICITY: For triclopyr butoxyethyl ester, in-vitro and animal mutagenicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL DATA

MOVEMENT & PARTITIONING:

Based largely or completely on information for triclopyr butoxyethyl ester.
Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

DEGRADATION & PERSISTENCE:

Based largely or completely on information for triclopyr butoxyethyl ester.
Based on the stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
The photolysis half-life in water is 6.6 days.

ECOTOXICOLOGY:

Based largely or completely on information for triclopyr butoxyethyl ester.
Material is highly toxic to aquatic organisms on an acute basis (LC₅₀/EC₅₀ between 0.1 and 1 mg/L in most sensitive species.)

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Product, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to applicable federal, state, or local procedures.

14. TRANSPORT INFORMATION:

U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

This material is not regulated for transportation.

15. REGULATORY INFORMATION:

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.

U.S. REGULATIONS

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

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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 Reauthorization 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

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

STATE RIGHT-TO-KNOW: This product is not known to contain any substances subject to the disclosure requirements of

New Jersey
Pennsylvania

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Category	Rating
Health	1
Flammability	1
Reactivity	0

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): To the best of our knowledge, this product contains no chemical subject to reporting under CERCLA.

16. OTHER INFORMATION:

MSDS STATUS: Revised Sections: 3, 4, 7, 8, & 14
Reference: DR-0298-9448
Replaces MSDS dated: 12/9/99
Document Code: D03-104-003
Replaces Document Code: D03-104-002

The Information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult Dow AgroSciences for Further Information.