

MATERIAL SAFETY DATA SHEET



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

TORDON* 22K HERBICIDE

Effective Date: 5/29/02
Product Code: 87116
MSDS: 000380

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Tordon* 22K Herbicide

COMPANY IDENTIFICATION:

Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. COMPOSITION/INFORMATION ON INGREDIENTS:

Picloram: 4-Amino-3,5,6-trichloropicolinic Acid, Potassium salt	CAS # 002545-60-0	24.4%
Inert Ingredients, Total, Including: Polyglycol	CAS # 069029-39-6	75.6%

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. Dark brown liquid. May cause severe eye irritation. LD₅₀ for skin absorption in rabbits is >5000 mg/kg. Oral LD₅₀ for skin absorption in rabbits is >5000 mg/kg. Inhalation LC₅₀ for rats for 4 hours is >8.11 mg/L. Material is slightly toxic to aquatic organisms and practically non-toxic to birds.

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 severe eye irritation. Corneal injury is unlikely. Effects likely to heal readily.

SKIN: Prolonged or repeated exposure may cause skin irritation, even a burn. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rabbits is >5000 mg/kg. Has caused allergic skin reactions when tested in guinea pigs. Did not cause allergic skin reactions when tested in humans.

INGESTION: Very low toxicity if swallowed. The oral LD₅₀ for male and female rats is >5000 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

INHALATION: No adverse effects are anticipated from single exposure to vapor. The LC₅₀ for rats for 4 hours is >8.11 mg/L.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: In animals, effects have been reported on the following organ: liver.

CANCER INFORMATION: Did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely. Even exposures having an adverse effect on the mother should have no effect on the fetus.

REPRODUCTIVE EFFECTS: Picloram acid did not interfere with reproduction in laboratory animal studies.

4. FIRST AID:

EYES: Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice.

SKIN: 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.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

INHALATION: Move person to fresh air; if effects occur, consult a physician.

NOTE TO PHYSICIAN: 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.

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5. FIRE FIGHTING MEASURES:

FLASH POINT: None observed up to 214°F
METHOD USED: TCC

FLAMMABLE LIMITS

LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: Alcohol foam, CO₂, dry chemical.

FIRE & EXPLOSION HAZARDS: No auto-ignition temperature when tested to 1022°F (550°C). Toxic, irritating vapors may be produced if product is involved in fire.

FIRE-FIGHTING EQUIPMENT: Wear positive-pressure, self-contained breathing apparatus and full protective clothing. Do not allow water from fire-fighting to enter water supplies.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Absorb small spills in and inert material, such as dry sand. In case of large spills, dike area to contain product and report 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. Causes substantial but temporary eye injury. Harmful if inhaled or absorbed through skin. Do not get in eyes or on clothing. Avoid breathing spray mist. Avoid skin contact. 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 the potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINE(S): Picloram: ACGIH TLV is 10 mg/M³, A4. OSHA PEL is 5 mg/M³ respirable. PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.
Polyglycol: Dow AgroSciences Industrial Hygiene Guide is 2 mg/M³.

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

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guidelines. 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 PROTECTION: Use chemical goggles.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

BOILING POINT: 212°F (100°C)
VAPOR PRESSURE: Approximately 23 mmHg @ 20°C
VAPOR DENSITY: Not applicable
SOLUBILITY IN WATER: Miscible
SPECIFIC GRAVITY: 1.160 (68/68°F, 20°C)
APPEARANCE: Dark brown liquid
ODOR: Not available

10. STABILITY AND REACTIVITY:

STABILITY: (CONDITIONS TO AVOID) Stable under normal storage conditions.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) None under normal use conditions. Under abnormal conditions avoid oxidizing materials and strong acids. Consult manufacturer for specific cases.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride and nitrogen oxides may be produced if product is involved in fire.

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HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

MUTAGENICITY: The preponderance of data shows picloram to be non-mutagenic in 'in vitro' (test tube) tests and in animal test systems.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: Based largely or completely on information for picloram. Bioconcentration potential is low (BCF <100 or Log Pow <3).

DEGRADATION & PERSISTENCE: Based largely or completely on information for picloram. Biodegradation under aerobic laboratory conditions is below detectable limits (<2.5%).

ECOTOXICOLOGY: Material is slightly toxic to aquatic organisms on an acute basis (LC₅₀/EC₅₀ between 10 and 100 mg/L in most sensitive species).
Acute LC₅₀ for rainbow trout (*Oncorhynchus mykiss*) is 26 mg/L.
Acute LC₅₀ for zebra fish (*Brachydanio rerio*) is 35.5 mg/L.
Acute LC₅₀ for sheepshead minnow (*Cyprinodon variegatus*) is >131 mg/L.
Acute EC₅₀ for shell deposition inhibition in eastern oyster (*Crassostrea virginica*) is 18-32 mg/L.
Acute LC₅₀ for pink shrimp (*Penaeus duorarum*) is 125 mg/L.
Material is practically non-toxic to birds on a dietary basis (LC₅₀ >5000 ppm)
Growth inhibition EC₅₀ in duckweed (*Lemna sp.*) is 196.2 mg/L.
Growth inhibition EC₅₀ for marine diatom (*Skeletonema costatum*) is 14mg/L.
Growth inhibition EC₅₀ for blue-green alga (*Anabaena flos-aquae*) is 590 mg/L.
Growth inhibition EC₅₀ for diatom (*Navicula sp.*) is 3.9 mg/L.

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Do not contaminate food, feed, or water by storage or disposal. Wastes are toxic. Improper disposal or excess waste, spray mixture, or rinsate is a violation of federal law. If wastes resulting from the use of this product cannot be disposed of according to label instructions, dispose of these wastes at an approved facility. Contact your state pesticide or environmental control agency, or the hazardous waste representative at the nearest EPA regional office for guidance.

14. TRANSPORT INFORMATION:

U.S. DOT

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.

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

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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.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Category	Rating
Health	2
Flammability	1
Reactivity	1

16. OTHER INFORMATION:

MSDS STATUS: Revised Sections: 3, 4, 8 & 15
Reference: DR-0119-8636
Replaces MSDS Dated: 9/14/01
Document Code: D03-111-004
Replaces Document Code: D03-111-003

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