

MATERIAL SAFETY DATA SHEET



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

GOALTENDER* HERBICIDE

Effective Date: 14-Sept-06
Product Code: 67105
MSDS: 007731

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: GoalTender* Herbicide

COMPANY IDENTIFICATION:

Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Yellow liquid. May cause eye irritation. Toxic to aquatic organisms.

EMERGENCY PHONE NUMBER: 800-992-5994

3. COMPOSITION/INFORMATION ON INGREDIENTS:

COMPONENT	CAS NUMBER	W/W%
Oxyfluorfen	042874-03-3	41.0
Propylene Glycol	000057-55-6	4.0 – 10.0
Balance		49.0 – 55.0

4. FIRST AID:

EYE: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, and 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: No emergency medical treatment necessary.

INHALATION: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, and then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIRE FIGHTING MEASURES:

FLASH POINT: Non-combustible

METHOD USED: Not applicable

FLAMMABILITY LIMITS

UFL: Not applicable

LFL: Not applicable

EXTINGUISHING MEDIA: When product is involved in a fire use carbon dioxide, dry chemical, or water spray.

FIRE & EXPLOSION HAZARDS: Pesticide particulates can become airborne. Combustion generates toxic fumes of the following: hydrogen chloride, hydrogen fluoride, and nitrogen oxides. Dried product can burn.

FIRE-FIGHTING EQUIPMENT: Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire. Contain run-off. Wear self-contained breathing apparatus (pressure-demand MSHA/NIOSH approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Contain spills immediately with inert materials (e.g. sand or earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal. Keep spills and cleaning runoff out of municipal sewers and open bodies of water. Report large spills to Dow AgroSciences at 800-992-5994. If exposed to material during cleanup operations, remove all contaminated clothing promptly. Wash all exposed skin areas with soap and water immediately after exposure. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Do not handle material near food, feed or drinking water.

STORAGE: Do not store this material near food, feed or drinking water. Store out of direct sunlight in a cool place. Keep container tightly closed when not in use.

OTHER: Triple rinse (or equivalent) and puncture empty container. Dispose empty container in a sanitary landfill as allowed by state and local authorities.

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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:

Oxyfluorfen: Dow AgroSciences Industrial Hygiene Guide is 0.2 mg/M³, TWA and 1.6 mg/M³, STEL.

Propylene glycol: AIHA WEEL is 10 mg/M³ for total vapor and aerosol.

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

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use safety glasses.

SKIN PROTECTION: Wear clean, body-covering clothing.

HAND PROTECTION: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Neoprene, Nitrile, Polyvinyl chloride (PVC or vinyl). Avoid gloves made of: Polyvinyl alcohol (PVA). **NOTICE:** The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

RESPIRATORY: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

COLOR: Yellow

STATE: Liquid

ODOR: None

pH: 6 to 8

VISCOSITY: 400 to 1000 CPS

SPECIFIC GRAVITY (WATER = 1): 1.17 to 1.19

VAPOR DENSITY (AIR = 1): <1 (water)

VAPOR PRESSURE: 17 mmHg @ 68°F (20°C) (water)

MELTING POINT: 32°F (0°C) (water)

BOILING POINT: 212°F (100°C) (water)

SOLUBILITY IN WATER: Dispersible

PERCENT VOLATILITY: 40.9 to 43.5% (water)

EVAPORATION RATE (BAc = 1): <1 (water)

10. STABILITY AND REACTIVITY:

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

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Avoid contact with the following: oxidizing agents, bromine and chromic acid.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may yield the following: hydrogen chloride and hydrogen fluoride.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

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

EYE: Based largely or completely on information for a similar material. May cause slight temporary eye irritation. Corneal injury is unlikely.

SKIN: Based largely or completely on information for a similar material. Brief contact is essentially non-irritating to skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rabbits is >5000 mg/kg.

INGESTION: Based largely or completely on information for a similar material. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. The oral LD₅₀ for rats is >5000 mg/kg.

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INHALATION: Based largely or completely on information for a similar material. At room temperature, exposure to vapor is minimal due to low volatility. With good ventilation, single exposure is not expected to cause adverse effects. If material is heated or areas are poorly ventilated, vapor/mist may accumulate and cause respiratory irritation and symptoms such as headache and nausea. The aerosol LC_{50} for rats is >0.39 mg/L for 4 hours. This is the highest attainable concentration. The aerosol LC_{50} for oxyfluorfen in rats is >5.4 mg/L for 4 hours.

SYSTEMIC (OTHER TARGET ORGAN EFFECTS):

Oxyfluorfen, in animals, effects have been reported on the following organs: blood, kidney, liver, spleen, and adrenal glands. In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

CANCER INFORMATION: Oxyfluorfen has caused cancer in laboratory animals. Propylene glycol did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Oxyfluorfen and propylene glycol did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals only at doses toxic to the mother.

REPRODUCTIVE EFFECTS: For oxyfluorfen, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. For propylene glycol, in animal studies, did not interfere with reproduction or fertility.

MUTAGENICITY: For oxyfluorfen and propylene glycol, in-vitro and animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:

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

Based largely or completely on information for propylene glycol.

Bioconcentration potential is low (BCF <100 or Log Pow <3).

Potential for mobility in soil is very high (Koc is between 0 and 50).

DEGRADATION & PERSISTENCE:

Based largely or completely on information for oxyfluorfen.

Biodegradation under aerobic laboratory conditions is below detectable limits (BOD_{20} or BOD_{28} is $<2.5\%$).

Based largely or completely on information for propylene glycol.

Material is readily biodegradable. Passes OECD test for ready biodegradability.

ECOTOXICOLOGY:

Based largely or completely on information for oxyfluorfen.

Material is very highly toxic to aquatic organisms on an acute basis (LC_{50} or EC_{50} is <0.1 mg/L in the most sensitive species tested).

Material is practically non-toxic to birds on an acute basis (LD_{50} is >2000 mg/kg).

Material is practically non-toxic to birds on a dietary basis (LC_{50} is >5000 ppm).

Based largely or completely on information for propylene glycol.

Material is practically non-toxic to aquatic organisms on an acute basis (LC_{50} or EC_{50} is >100 mg/L in the most sensitive species tested).

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION:

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

For all package sizes by all modes of transportation:
This material is not regulated for transport.

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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: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
Oxyfluorfen	042874-03-3	41%

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:

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: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
Oxyfluorfen	042874-03-3	NJ2
Propylene Glycol	000057-55-6	PA1

NJ2=New Jersey Environmental Hazardous Substance (present at > or = to 1.0%).

PA1=Pennsylvania Hazardous Substance (present at > or = to 1.0%).

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:

Health	1
Flammability	0
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: 2, 3, 4, 8, 11
Reference: DR-0390-2098
Replaces MSDS Dated: 7-28-04
Document Code: D03-204-003
Replaces Document Code: D03-204-002

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