

# MATERIAL SAFETY DATA SHEET



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

## LONTREL\* TURF AND ORNAMENTAL HERBICIDE

Effective Date: 25-Jul-07  
Product Code: 69440  
MSDS: 002805

### 1. PRODUCT AND COMPANY IDENTIFICATION:

**PRODUCT:** Lontrel\* Turf and Ornamental Herbicide

#### COMPANY IDENTIFICATION:

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

### 2. HAZARDOUS IDENTIFICATIONS:

#### EMERGENCY OVERVIEW

Red to brown liquid with a sweet odor. May cause eye and skin irritation.

**EMERGENCY PHONE NUMBER:** 800-992-5994

### 3. COMPOSITION/INFORMATION ON INGREDIENTS:

Component Name	CAS Number	W/W%
Clopyralid MEA Salt	57754-85-5	40.9
Isopropanol	67-63-0	5.0
Ethylene oxide, propylene oxide and di-sec-butylphenol polymer	69029-39-6	1.0
Balance		53.1

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

### 5. FIRE FIGHTING MEASURES:

**FLASH POINT:** 117°F (47.2C)

**METHOD USED:** TCC

#### FLAMMABLE LIMITS

LFL: Not determined

UFL: Not determined

**EXTINGUISHING MEDIA:** Water fog, alcohol resistant foam, CO<sub>2</sub>, dry chemical, or foam preferred.

**FIRE & EXPLOSION HAZARDS:** Toxic, irritating fumes may be produced if product is involved in a fire. Contain water from fire-fighting to prevent entry into surface or ground water.

**FIRE-FIGHTING EQUIPMENT:** Under fire conditions use a positive-pressure self-contained breathing apparatus and protective clothing.

### 6. ACCIDENTAL RELEASE MEASURES:

**ACTION TO TAKE FOR SPILLS/LEAKS:** Absorb small spills with inert material such as sawdust or sand. Place in suitable container for disposal. Report large spills to Dow AgroSciences on 800-992-5994.

### 7. HANDLING AND STORAGE:

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Keep out of reach of children and animals. Do not swallow. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Remove and wash contaminated clothing. Store in original container with the lid tightly closed. This product is combustible. Do not use or store this product near a heat source, open flame or other sources of ignition, particularly if storage temperatures are near the flash point (117°F, 47.2C). Noxious fumes may be formed under fire conditions.

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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 GUIDELINES:

Clopyralid: Dow AgroSciences Industrial Hygiene Guideline is 10 mg/M<sup>3</sup>.

Isopropanol: ACGIH TLV and OSHA PEL are 400 ppm TWA, 500 ppm STEL.

Ethylene oxide, propylene oxide and di-sec-butylphenol polymer: Dow AgroSciences Industrial Hygiene Guideline is 2 mg/M<sup>3</sup>.

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

#### RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved positive-pressure supplied-air respirator. The following should be effective types of air-purifying respirators: organic vapor cartridge.

**SKIN PROTECTION:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur.

**EYE PROTECTION:** Use safety glasses. If exposure causes eye discomfort, use a full-face respirator.

**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 (100C)  
**VAPOR PRESSURE:** 23.5 mmHg @ 20C  
**VAPOR DENSITY:** 1.06 @ 20C  
**SOLUBILITY IN WATER:** Miscible  
**SPECIFIC GRAVITY:** 1.161 @ 68°F, 20C  
**APPEARANCE:** Red to brown liquid  
**ODOR:** Sweet  
**pH:** 7.5-8.0

### 10. STABILITY AND REACTIVITY:

**STABILITY: (CONDITIONS TO AVOID)** Store under cool, dry conditions. Avoid elevated temperatures and direct sunlight. Combustible. Do not use or store near heat, open flame, or other sources of ignition, especially if temperatures are near or at the flash point.

**INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID)** Avoid acid, oxidizing material, halogenated organics, brass, copper, zinc, and aluminum.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Hydrogen chloride, nitrogen oxides under fire conditions, chlorinated pyridine.

**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:** May cause very slight temporary corneal injury. Vapor may cause irritation experienced as mild discomfort and redness.

**SKIN:** Prolonged contact may cause moderate skin irritation with local redness. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD<sub>50</sub> for skin absorption in rabbits is >5,000 mg/kg.

**INGESTION:** Very low toxicity if swallowed. The oral LD<sub>50</sub> for rats is >5,000 mg/kg. Harmful effects not anticipated from swallowing small amounts.

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**INHALATION:** Vapor concentrations are attainable which could be hazardous on single exposure. The aerosol LC<sub>50</sub> for rats is >3.0 mg/L for 4 hours. Excessive exposure (400 ppm) to isopropanol may cause eye, nose and throat irritation. Incoordination, confusion, hypertension, hypothermia, circulatory collapse, respiratory arrest and death may occur following longer duration of higher levels. Observations in animals include middle ear lining damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** In animals, effects have been reported on the following organs: liver and kidney. Observations in animals include lethargy. For isopropanol: kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

**CANCER INFORMATION:** The components tested did not cause cancer in laboratory animals.

**TERATOLOGY (BIRTH DEFECTS):** Clopyralid caused birth defects in laboratory animal studies, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure. Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**REPRODUCTIVE EFFECTS:** For the components tested, in animal studies, did not interfere with reproduction.

**MUTAGENICITY:** For the components tested, in-vitro and animal genetic toxicity studies were negative.

### 12. ECOLOGICAL INFORMATION:

#### ENVIRONMENTAL FATE:

#### MOVEMENT & PARTITIONING:

Based largely or completely on information for clopyralid. Bioconcentration potential is low (BCF <100 or Log Pow <3). Potential for mobility in soil is very high (Koc between 0 and 50).

#### DEGRADATION & PERSISTENCE:

Based largely or completely on information for clopyralid. Biodegradation under aerobic laboratory conditions is below detectable limits (BOD<sub>20</sub> or BOD<sub>28</sub>/ThOD is <2.5%).

#### ECOTOXICOLOGY:

Based largely or completely on information for clopyralid. Material is practically non-toxic to aquatic organisms on an acute bases (LC<sub>50</sub>/EC<sub>50</sub> >100 mg/L in 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 INFORMATION:

**DOT Non-Bulk:** Not Regulated

#### DOT Bulk:

**ID Number:** NA1993

**Proper Shipping Name:** Combustible Liquid, N.O.S.

**Technical Name:** Contains Isopropanol

**Hazard Class:** Combustible Liquid

**Packing Group:** PG III

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### IMDG

**ID Number:** UN1993  
**Proper Shipping Name:** Flammable Liquid, N.O.S.  
**Technical Name:** Contains Isopropanol  
**Hazard Class:** 3  
**Packing Group:** PG III  
**EMS Number:** F-E,S-E

### ICAO/IATA:

**ID Number:** UN1993  
**Proper Shipping Name:** Flammable Liquid, N.O.S.  
**Technical Name:** Contains Isopropanol  
**Hazard Class:** 3  
**Packing Group:** PG III  
**Cargo Packing Instruction:** 310  
**Passenger Packing Instruction:** 309

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

### 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:

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>CONCENTRATION</u>
Isopropanol	67-63-0	5.0%

**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:** 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.

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>LIST</u>
Isopropanol	67-63-0	NJ1 NJ2 NJ3 PA1 PA3

NJ1=New Jersey Special Health Hazard Substance (present at > or = to 0.1%).  
NJ2=New Jersey Environmental Hazardous Substance (present at > or = to 1.0%).  
NJ3=New Jersey Workplace Hazardous Substance (present at > or = to 1.0%).  
PA1=Pennsylvania Hazardous Substance (present at > or = to 1.0%).  
PA3=Pennsylvania Environmental 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	2
Flammability	2
Reactivity	1

**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.

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### 16. OTHER INFORMATION:

**MSDS STATUS:** Revised Sections: 2,3,4,6,8,11,12,13,14  
Reference: DR-0135-0385  
Replaces MSDS Dated: 2/14/03  
Document Code: D03-071-005  
Replaces Document Code: D03-071-004

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

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