

## Material Safety Data Sheet



## Lontrel\* 360 Herbicide

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**In case of emergency Call CANUTEC at 613 996 6666**

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**1. Product Identification:****Product name:** Lontrel\* 360 Herbicide**Product use:** For post-emergence control of certain annual and perennial broad-leaved weeds in certain oilseeds, small grains, other field and row crops and shelter belts.**Product code number:** 45487**GMID numbers:** 160806, 251089**MSDS number:** DASCI-072**Effective date:** January 15, 2007**Supplier:**Dow AgroSciences Canada Inc.  
Suite 2100, 450 - 1st Street SW,  
Calgary, Alberta,  
Canada, T2P 5H1  
[www.dowagro.ca](http://www.dowagro.ca)**Date printed:** January 16, 2007

**This product is regulated under authority of the Pest Control Products Act**

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**2. Composition:**

Component	CAS Number	% (w/w)
Clopyralid (as monoethanolamine salt)	057754-85-5	40.9
Inert ingredients		59.1
Including:		
Isopropyl alcohol	000067-63-0	>1.0 <sup>1</sup>
Polyglycol 26-2	069029-39-6	

<sup>1</sup>as a percent of total formulation

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**3. Hazard Identification:****Emergency Overview:**

This product is a reddish-brown clear liquid with a sweet odor. Prolonged exposure may cause skin irritation. Eye contact may result in transient corneal injury.

**Special Health Precautions:** This product contains isopropanol. Health studies have shown that isopropanol poses certain human health risks, which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes of isopropanol contained in this product should be minimized.

**Potential Health Effects:**

**Eyes:** This product may cause very slight corneal injury. Vapors may irritate eyes.

**Skin contact:** Prolonged exposure may cause moderate skin irritation.

**Skin absorption:** A single prolonged exposure is not likely to result in this material being absorbed through the skin in harmful amounts.

**Ingestion:** No hazards are anticipated from swallowing small amounts incidental to normal handling operations.

**Inhalation:** Excessive vapor concentrations are attainable and could be hazardous on a single exposure. Excessive exposure (400 ppm) to isopropyl alcohol (isopropanol) may cause eye,

nose, and throat irritation. Incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest, and death may follow longer duration or higher levels of exposure to isopropanol. Observations in animals include middle ear lining damage upon exposure to vapors of isopropanol.

**4. First Aid Measures:**

**Consult a physician in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention at once.**

**Eyes:** Hold eyes open and rinse with a continuous gentle stream of clean water for 15 to 20 minutes. Remove contact lenses, if present, after the first five minutes. Then continue rinsing eyes. Get specialist medical attention.

**Skin:** Remove all contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Get medical attention if irritation persists.

**Ingestion:** Get medical attention at once. If conscious, have individual sip a glass of water if able to swallow. Do not induce vomiting unless

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instructed to do so by qualified medical personnel.

**Inhalation:** Remove individual to fresh air. If breathing is difficult, seek expert assistance and begin artificial respiration, preferably by mouth to mouth. If breathing difficulty continues, get expert medical attention.

Have the Material Safety Data Sheet, and if available, the product container or label with you when calling for medical assistance.

**Note to physician:** There is no specific antidote. Employ supportive care. Treatment should be based on the judgment of the physician in response to the reactions of the patient.

**5. Fire-fighting Measures:**

**Flash point:** 47°C (TCC)

**Flammable limits:** Not available

**Auto-ignition temperature:** Not available

**Extinguishing media:** Use water fog, alcohol resistant foam, CO<sub>2</sub>, dry chemical. Foam is preferred.

**Sensitivity to mechanical impact/static discharge:** Not available

**Unusual fire and explosion hazards:** Toxic, irritating fumes may be produced if product is involved in a fire. Contain fire-fighting water for future disposal.

**Fire-fighting equipment:** Wear positive-pressure self-contained breathing apparatus and full turnout gear.

**6. Accidental Release Measures:**

Eliminate all ignition sources. Ventilate the spill area. Avoid breathing the vapor.

Soak up small spills with absorbent material such as HAZORB, or ZORBALL, peat moss, commercial sweeping compound or similar absorbent material; if these are not available use adsorbing agents such as kitty litter, sand, clay or topsoil. Store collected absorbed/adsorbed material in secure containers until safe disposal can be arranged. Avoid the use of water for cleanup, since spent water must be collected and may be treated as hazardous waste. Use hot water and heavy duty detergent to clean up any residual stains on hard surfaces. Small spills on topsoil should be

worked into the soil and allowed to degrade under natural conditions (see Section 13. Ecological Information – Degradation and Metabolism – Soil). Do not allow spilled material to contaminate water supplies. For large spills, dike and barricade the affected area and contact CANUTEC at 613 996 6666 and local authorities.

**7. Handling and Storage:**

**Handling:** 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 as soon as possible after task is completed. Contaminated clothing should be washed separately from domestic laundry and line-dried. Once used for contaminated clothing, the washing machine should be operated through a complete cycle with hot water and detergent only, prior to use for domestic laundry. **Storage:** 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 (47°C). Noxious fumes may be formed under fire conditions.

**8. Exposure Controls, Personal Protection and Exposure Limits:**

**Exposure limits:**

Clopyralid (acid): Dow AgroSciences Industrial Hygiene Guide is 10 mg/m<sup>3</sup>.

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

Polyglycol 26-2: Dow AgroSciences Industrial Hygiene Guide 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.

**Respiratory protection:** Atmospheric levels should be maintained below the exposure guidelines. 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-

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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 or supplied-air respirator.

**Protective clothing:** Use gloves impervious to this material when prolonged or frequently repeated contact could occur.

**Eyes:** Use safety glasses. If vapor exposure causes eye discomfort, use an approved full-face respirator.

**Other protection:** None specified

**9. Physical and Chemical Properties:**

**Boiling point:** 100°C

**Vapor pressure:** 23.5 mm Hg at 20°C

**Volatility:** 1.06 at 20°C

**pH:** 7.5 to 8.0

**Appearance:** Reddish-brown liquid

**Odor:** Sweet

**Coefficient of water/oil distribution:** Not available

**Specific gravity:** 1.161 at 20° C

**Evaporation rate:** Not available

**Solubility in water:** Miscible

**Freezing point:** Not available

**Odor threshold:** Not available

**Melting point:** Not applicable

**10. Stability and Reactivity:**

**Stability:** Store Lontrel 360 under cool, dry conditions. Avoid elevated temperatures and direct sunlight. This product is combustible. Do not use or store this product near heat, open flame, or other sources of ignition, especially if temperatures are near or at the flash point (47°C).

**Incompatibility:** 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:**

**Skin absorption:** Acute dermal LD50 (rabbit) is >5000 mg/kg.

**Ingestion:** Acute oral LD50 (rat) is >5000 mg/kg.

**Inhalation:** The maximum practically - attainable concentration of clopyralid in the tests (3.0 mg/L for four hours) produced no ill effects in test animals.

**Sensitization:** Not available

**Chronic effects:** In animals, effects have been reported on the liver and kidney. Observations in animals include lethargy. For isopropanol: kidney effects and/or tumors have been observed in male rat. These effects are believed to be species specific and unlikely to occur in humans.

**Cancer:** For the components tested, none caused cancer in laboratory animals.

**Birth defects:** Clopyralid caused birth defects in test animals, 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. Isopropyl alcohol at extremely high concentrations has been reported to cause birth defects and fetal toxicity in rats. At lower concentrations, there were no effects on the fetus.

**Reproductive effects:** For the components tested, in animal studies, this product has been shown not to interfere with reproduction.

**Mutagenicity:** For the components of this product tested, in-vitro and animal mutagenicity studies were negative.

**12. Ecological Information:****Bio-concentration potential:**

Bio-concentration potential for clopyralid is low (BCF is <100 or Log Pow is 3).

**Aquatic toxicity:**

Clopyralid is practically non-toxic to fish and crustaceans on an acute basis (96-hour LC50 or EC50 is >100 mg/L in the most sensitive species tested)

Clopyralid is practically non-toxic to aquatic invertebrates on an acute basis (48-hour LC50 or EC50 is between 10 and 100 mg/L in the most sensitive species tested).

Clopyralid is moderately toxic to aquatic plants and/or algae on an acute basis (96-hour LC50 or EC50 is between 1 and 10 mg/L in the most sensitive species tested.)

**Avian Toxicity:**

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Clopyralid is slightly toxic to birds on an acute basis (Acute LD50 is between 501 and 2000 mg/kg in the most sensitive species tested)

**Bee toxicity:**

Clopyralid is practically non-toxic to bees. (LD50 >100 µg/bee contact and oral)

**Degradation and Metabolism:**

**In soil** In soil, microbial degradation occurs; slow degradation occurs in sterile soil. The major product is CO<sub>2</sub>; only traces of one other metabolite have been recorded. Aerobic soil degradation depends on initial concentration (the half-life ranges from 7 days at 0.0025 ppm to 435 days at 2.5 ppm, sandy loam), soil temperature and soil moisture. The half-life (British guidelines) is 14 to 56 days; the half-life (USA guidelines) is 2 to 94 days. Although data indicate potential for leaching, field dissipation and lysimeter studies demonstrate fairly rapid degradation and limited downward movement. Field dissipation half-life was 8 to 66 days (19 sites), with downward movement confined to 18 inches. In lysimeter studies, the centre of mass movement ranged from 6 to 18 inches after 12 months, and cumulative (2 years) leachate concentrations were 0.002 to 0.14 ppb (0.11 to 0.6% of applied material).

**In plants:** Clopyralid is not metabolized in plants.

**In animals:** In rat, following oral administration of clopyralid, there is rapid and almost complete elimination in the urine.

**13. Disposal Considerations:**

**Unused unwanted product:** Contact Dow AgroSciences or your provincial regulatory agency for disposal information.

**Container disposal:** Refer to the product label for instructions regarding cleaning and disposal of empty pesticide containers. If these instructions are missing or not understood, contact Dow AgroSciences at 800 667 3852 or your provincial regulatory agency for direction.

**14. Transport Information:**

This product is classified by regulations under authority of the Transportation of Dangerous Goods Act for bulk shipment as follows:  
**FLAMMABLE LIQUIDS, N.O.S. (Isopropyl alcohol) Class 3/UN1993/PGIII.** For containers less than 450 L this product is classified as "**Not Regulated**". (TDG part 1.33)

**15. Regulatory Information:**

**Pest Control Products Act registration number:** 23545

**For information phone:** 800 667 3852

**Master reference:** 2805

**MSDS status:** Revised sections:

- 2. Composition
- 4. First Aid Measures
- 6. Accidental Release Measures
- 10. Stability and Reactivity
- 12. Ecological Information

**Replaces MSDS dated:** January 21, 2005

**16. Other Information**

**National Fire Code classification:** Class II

**NFPA rating:** Health: 2; Flammability: 2; Reactivity: 1.

**Notice:** The information contained in this Material Safety Data Sheet ("MSDS") is current as of the effective date shown in Section 1 of this MSDS and may be subject to amendment by Dow AgroSciences Canada Inc. ("DASC") at any time. DASC accepts no liability whatsoever which results in any way from the use of MSDS that are not published by DASC, or have been amended without DASC express written authorization. Users of this MSDS must satisfy themselves that they have the most recent and authorized version of this MSDS and shall bear all responsibility and liability with respect thereto. Any conflict or inconsistencies as to the contents of this MSDS shall be resolved in favor of DASC by the most recent version of the MSDS published by DASC.