

# SAFETY DATA SHEET

## DOW AGROSCIENCES LLC

**Product name:** LONTREL™ Turf and Ornamental Herbicide

**Issue Date:** 05/22/2015

**Print Date:** 05/22/2015

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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## 1. IDENTIFICATION

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**Product name:** LONTREL™ Turf and Ornamental Herbicide

**Recommended use of the chemical and restrictions on use**

**Identified uses:** End use herbicide product

### COMPANY IDENTIFICATION

DOW AGROSCIENCES LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS IN 46268-1053  
UNITED STATES

**Customer Information Number:**

800-992-5994

[info@dow.com](mailto:info@dow.com)

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 800-992-5994

**Local Emergency Contact:** 352-323-3500

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## 2. HAZARDS IDENTIFICATION

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### Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Flammable liquids - Category 3

### Label elements

**Hazard pictograms**



Signal word: **WARNING!**

**Hazards**

Flammable liquid and vapour.

**Precautionary statements****Prevention**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ ventilating/ lighting/ equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wear protective gloves/ eye protection/ face protection.

**Response**

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage**

Store in a well-ventilated place. Keep cool.

**Disposal**

Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

no data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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**Chemical nature:** Mixture

This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Clopyralid monoethanolamine salt	57754-85-5	40.9%
isopropanol	67-63-0	5.0%
Balance	Not available	54.1%

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**4. FIRST AID MEASURES**

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**Description of first aid measures**

**General advice:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, 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. If breathing is difficult, oxygen should be administered by qualified personnel.

**Skin contact:** 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. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** 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. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** No emergency medical treatment necessary.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Hemodialysis may be of benefit if substantial amounts have been ingested and the patient is showing signs of intoxication. Consider hemodialysis for patients with persistent hypotension or coma unresponsive to standard therapy (isopropanol levels >400 - 500 mg/dl). (Goldfrank 1998, King et al, 1970). 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. Repeated excessive exposure may aggravate preexisting lung disease.

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## **5. FIREFIGHTING MEASURES**

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**Suitable extinguishing media:** To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

**Unsuitable extinguishing media:** no data available

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn. Container may rupture from gas generation in a fire situation.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. To extinguish combustible residues of this product use water fog, carbon

dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

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## **6. ACCIDENTAL RELEASE MEASURES**

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**Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

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## **7. HANDLING AND STORAGE**

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**Precautions for safe handling:** Keep away from heat, sparks and flame. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Electrically ground and bond all equipment. Keep out of reach of children. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Do not swallow. Use with adequate ventilation. Keep container closed. Wash thoroughly after handling. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. No smoking, open flames or sources of ignition in handling and storage area. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
isopropanol	ACGIH	TWA	200 ppm
	ACGIH	STEL	400 ppm
	OSHA Z-1	TWA	980 mg/m3 400 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

### Exposure controls

**Engineering controls:** Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

**Eye/face protection:** Use safety glasses (with side shields). If exposure causes eye discomfort, use a full-face respirator.

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). 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.

**Other protection:** Wear clean, body-covering clothing.

**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 exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Appearance

<b>Physical state</b>	Liquid.
<b>Color</b>	Red to brown
<b>Odor</b>	Sweet
<b>Odor Threshold</b>	No test data available

<b>pH</b>	7.5 - 8.0
<b>Melting point/range</b>	Not applicable
<b>Freezing point</b>	No test data available
<b>Boiling point (760 mmHg)</b>	100 °C ( 212 °F)
<b>Flash point</b>	<b>closed cup</b> 47.2 °C ( 117.0 °F) <i>Closed Cup</i>
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No test data available
<b>Flammability (solid, gas)</b>	no data available
<b>Lower explosion limit</b>	No test data available
<b>Upper explosion limit</b>	No test data available
<b>Vapor Pressure</b>	23.5 mmHg at 20 °C (68 °F)
<b>Relative Vapor Density (air = 1)</b>	1.06 at 20 °C (68 °F)
<b>Relative Density (water = 1)</b>	1.161
<b>Water solubility</b>	Miscible with water
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Auto-ignition temperature</b>	No test data available
<b>Decomposition temperature</b>	No test data available
<b>Dynamic Viscosity</b>	7 cP
<b>Kinematic Viscosity</b>	No test data available
<b>Explosive properties</b>	no data available
<b>Oxidizing properties</b>	no data available
<b>Liquid Density</b>	1.161 g/cm <sup>3</sup> at 20 °C (68 °F) <i>Calculated.</i>
<b>Molecular weight</b>	no data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** no data available

**Chemical stability:** Unstable at elevated temperatures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid. Avoid direct sunlight.

**Incompatible materials:** Avoid contact with: Acids. Halogenated organics. Oxidizers. Avoid contact with metals such as: Aluminum. Zinc. Brass. Copper.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Chlorinated pyridine. Hydrogen chloride. Nitrogen oxides.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*

### **Acute toxicity**

#### **Acute oral toxicity**

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. Observations in animals include: Lethargy.

As product:

LD50, Rat, male and female, > 5,000 mg/kg

#### **Acute dermal toxicity**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:

LD50, Rabbit, > 5,000 mg/kg

#### **Acute inhalation toxicity**

No adverse effects are anticipated from single exposure to mist. Mist may cause irritation of upper respiratory tract (nose and throat) and lungs. Excessive exposure (400 ppm) to isopropanol may cause eye, nose and throat irritation. Incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest and death may follow a longer duration or 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

As product:

LC50, Rat, male and female, 4 Hour, Aerosol, > 3.0 mg/l

Maximum attainable concentration.

No deaths occurred at this concentration.

### **Skin corrosion/irritation**

Prolonged contact may cause slight skin irritation with local redness.

### **Serious eye damage/eye irritation**

May cause mild eye discomfort.

May cause eye irritation.

May cause slight temporary corneal injury.

Vapor may cause eye irritation experienced as mild discomfort and redness.

### **Sensitization**

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

### **Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

### **Specific Target Organ Systemic Toxicity (Repeated Exposure)**

For the active ingredient(s):

Based on available data, repeated exposures are not expected to cause significant adverse effects except at very high aerosol concentrations. Repeated excessive aerosol exposures may cause respiratory tract irritation and even death.

Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

For the minor component(s):

In animals, effects have been reported on the following organs:

Liver.

Kidney.

Observations in animals include:

Lethargy.

### **Carcinogenicity**

Similar formulations did not cause cancer in laboratory animals.

### **Teratogenicity**

For similar active ingredient(s). 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. For the minor component(s): Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

### **Reproductive toxicity**

In animal studies, active ingredient did not interfere with reproduction.

### **Mutagenicity**

For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

### **Aspiration Hazard**

Based on available information, aspiration hazard could not be determined.

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## **12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

### **Toxicity**

#### **Clopyralid monoethanolamine salt**

##### **Acute toxicity to fish**

For similar active ingredient(s).

Clopyralid.

LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, > 99.9 mg/l, OECD Test Guideline 203 or Equivalent

##### **Acute toxicity to aquatic invertebrates**

For similar active ingredient(s).

Clopyralid.

EC50, Daphnia magna (Water flea), static test, 48 Hour, > 99.0 mg/l, OECD Test Guideline 202 or Equivalent



**Toxicity to Above Ground Organisms**

For similar active ingredient(s).

Clopyralid.

Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).

Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

For similar active ingredient(s).

Clopyralid.

oral LD50, Anas platyrhynchos (Mallard duck), 14 d, 1465 - 2000mg/kg bodyweight.

For similar active ingredient(s).

Clopyralid.

dietary LC50, Colinus virginianus (Bobwhite quail), 8 d, > 5000mg/kg diet.

For similar active ingredient(s).

Clopyralid.

contact LD50, Apis mellifera (bees), 48 d, > 100micrograms/bee

For similar active ingredient(s).

Clopyralid.

oral LD50, Apis mellifera (bees), 48 d, > 98.1micrograms/bee

**isopropanol**

**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 9,640 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

LC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

NOEC, alga Scenedesmus sp., static test, 7 d, Growth inhibition (cell density reduction), 1,800 mg/l

ErC50, alga Scenedesmus sp., static test, 72 Hour, Growth rate inhibition, > 1,000 mg/l

**Toxicity to bacteria**

EC50, activated sludge, > 1,000 mg/l

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, 30 mg/l

**Balance**

**Acute toxicity to fish**

No relevant data found.

**Persistence and degradability**

**Clopyralid monoethanolamine salt**

**Biodegradability:** For similar active ingredient(s). Clopyralid. Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

**isopropanol**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

**Biodegradation:** 95 %

**Exposure time:** 21 d

**Method:** OECD Test Guideline 301E or Equivalent

10-day Window: Pass

**Biodegradation:** 53 %

**Exposure time:** 5 d

**Method:** Other guidelines

**Theoretical Oxygen Demand:** 2.40 mg/mg Estimated.

**Chemical Oxygen Demand:** 2.09 mg/mg Estimated.

**Biological oxygen demand (BOD)**

Incubation Time	BOD
5 d	20 - 72 %
20 d	78 - 86 %

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitizer:** OH radicals

**Atmospheric half-life:** 1.472 d

**Method:** Estimated.

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Bioaccumulation:** No data available.

**Mobility in soil**

**Clopyralid monoethanolamine salt**

For similar active ingredient(s).

Clopyralid.

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

**isopropanol**

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

**Partition coefficient(Koc):** 1.1 Estimated.

**Balance**

No relevant data found.

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## 13. DISPOSAL CONSIDERATIONS

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**Disposal methods:** 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.

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## 14. TRANSPORT INFORMATION

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### DOT

<b>Proper shipping name</b>	Combustible liquid, n.o.s.(Isopropanol)
<b>UN number</b>	NA 1993
<b>Class</b>	CBL
<b>Packing group</b>	III

### Classification for SEA transport (IMO-IMDG):

<b>Proper shipping name</b>	FLAMMABLE LIQUID, N.O.S.(Isopropanol)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	III
<b>Marine pollutant</b>	No
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

### Classification for AIR transport (IATA/ICAO):

<b>Proper shipping name</b>	Flammable liquid, n.o.s.(Isopropanol)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. 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.

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## 15. REGULATORY INFORMATION

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### OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

Fire Hazard  
Acute Health Hazard  
Chronic Health Hazard

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**

**Components**

**CASRN**

isopropanol

67-63-0

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:**

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

**Components**

**CASRN**

isopropanol

67-63-0

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**United States TSCA Inventory (TSCA)**

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

**Federal Insecticide, Fungicide and Rodenticide Act**

EPA Registration Number: 62719-305

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**CAUTION**

Causes moderate eye irritation  
Harmful if inhaled or absorbed through skin

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**16. OTHER INFORMATION**

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**Hazard Rating System**

**NFPA**

Health	Fire	Reactivity
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**Revision**

Identification Number: 101199361 / A211 / Issue Date: 05/22/2015 / Version: 6.0

DAS Code: XRM-3972

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided 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 between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.