

# MATERIAL SAFETY DATA SHEET



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

## CIS-1,3-DICHLOROPROPENE 200

Effective Date: 10/25/02  
Product Code: 16654  
MSDS: 007519

### 1. PRODUCT AND COMPANY IDENTIFICATION:

**PRODUCT:** CIS-1,3-Dichloropropene 200

#### COMPANY IDENTIFICATION:

Dow AgroSciences  
9330 Zionsville Road  
Indianapolis, IN 46268-1189

### 2. COMPOSITION/INFORMATION ON INGREDIENTS:

|                                      |                   |     |
|--------------------------------------|-------------------|-----|
| Cis-1,3-Dichloropropene              | CAS # 010061-01-5 | 99% |
| Other Ingredients, Total, Including: |                   | 1%  |
| 1,2-Dichloropropane                  | CAS # 000078-87-5 |     |

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. Colorless to straw-colored liquid with a sweet penetrating odor. May cause eye and skin irritation. May cause corneal injury. LD<sub>50</sub> for skin absorption is 794 mg/kg. Oral LD<sub>50</sub> is 85 mg/kg. Inhalation vapor LC<sub>50</sub> is 670 ppm (males) and 744 ppm (females) for 4 hours. Toxic to aquatic organisms.

**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 and/or slight corneal injury. Vapor may cause lacrimation (tears). Vapor may cause eye irritation experienced as mild discomfort and redness.

**SKIN:** Brief contact may cause moderate skin irritation with local redness. Prolonged or repeated exposure may cause skin irritation, even a burn. Prolonged or widespread skin contact may result in absorption of harmful amounts. The LD<sub>50</sub> for skin absorption in rats is 794 mg/kg. Has caused allergic skin reactions when tested in guinea pigs. However, skin sensitization has not been encountered among employees involved in the manufacture of this material.

**INGESTION:** Moderate toxicity if swallowed. The oral LD<sub>50</sub> for rats is 85 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause serious injury, even death. Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

**INHALATION:** Easily attainable vapor concentrations may cause serious adverse effects, even death. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. The vapor LC<sub>50</sub> for rats is 670 ppm (males) and 744 ppm (females) for 4 hours.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** See Regulations Section.

**CANCER INFORMATION:** For hazard communication purposes under OSHA Standard 29 CFR Part 1910.1200, this chemical is listed as a potential carcinogen by IARC. Has been shown to cause cancer in laboratory animals by the oral route. Inhalation exposure resulted in an increase in the normal occurrence of benign lung tumors in male mice.

**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:** In animal studies, did not interfere with reproduction.

### 4. FIRST AID:

**EYES:** Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

**SKIN:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Obtain medical attention without delay. Wash clothing before reuse. Destroy contaminated articles such as shoes.

**INGESTION:** Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

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**INHALATION:** Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**NOTE TO PHYSICIAN:** Because rapid absorption may occur through the lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. 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. Repeated excessive exposure may aggravate pre-existing lung, liver and kidney disease. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress.

### 5. FIRE FIGHTING MEASURES:

**FLASH POINT:** 83°F (28°C)  
**METHOD USED:** TCC

#### FLAMMABLE LIMITS

**LFL:** 5.3% @ 80°C  
**UFL:** 14.5% @ 80°C

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

**FIRE AND EXPLOSION HAZARDS:** Toxic, irritating vapors under fire conditions. Keep vapors away from possible ignition sources.

**FIRE-FIGHTING EQUIPMENT:** Use positive-pressure, self-contained breathing apparatus.

### 6. ACCIDENTAL RELEASE MEASURES:

**ACTION TO TAKE FOR SPILLS/LEAKS:** Do not breathe vapors. In case of spillage indoors have available a self-contained, positive-pressure breathing apparatus or a full face mask equipped with a fresh black canister meeting specifications of NIOSH/MSHA for organic vapors. Use latter for less than 1/2 hour or when odor penetrates mask whichever comes first. If it can be done safely, invert or reposition the leaking container so that the area with the leak is up and the flow is reduced. If possible, put the container into an overpak. Cover or confine the leakage with an absorbent material such as earth dirt, clay, sand, or other non-combustible absorbent material. Collect the spent absorbent material in a disposal drum. If the spill is on the ground, dig up enough of the soil to eliminate the contamination and place the soil in a disposal drum. Report large spills to Dow AgroSciences @ 800-992-5994.

### 7. HANDLING AND STORAGE:

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Do not get in eyes, on skin, or on clothing. Do not breathe vapors. Do not take internally. Read label before using. Store in original container.

### 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):

1,3-Dichloropropene: ACGIH TLV is 1 ppm, Skin, A3

A 'skin' notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures

**ENGINEERING CONTROLS:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Lethal concentrations may exist in areas with poor ventilation.

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### 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 a NIOSH approved self-contained breathing apparatus or positive pressure airline with auxiliary self-contained air supply. For emergency and other conditions where the exposure guideline may be exceeded, use a NIOSH approved positive-pressure self-contained breathing apparatus or positive pressure airline with auxiliary self-contained air supply. In confined or poorly ventilated areas, use a NIOSH approved self-contained breathing apparatus or positive pressure airline with auxiliary self-contained air supply.

**SKIN PROTECTION:** Use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, gloves, boots, apron, or full-body suit will depend on operation. Safety shower should be located in the immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items, which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

**EYE/FACE PROTECTION:** Use chemical goggles. 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:** Approximately 220°F (104°C)  
**VAPOR PRESSURE:** 28 mmHg @ 20°C  
**VAPOR DENSITY:** Not applicable  
**SOLUBILITY IN WATER:** Approximately 0.1%  
**SPECIFIC GRAVITY:** 1.211 @ 20°C  
**APPEARANCE:** Colorless to straw-colored liquid  
**ODOR:** Sweet, penetrating odor

### 10. STABILITY AND REACTIVITY:

**STABILITY:** (CONDITIONS TO AVOID) May form explosive mixtures with air when confined. Avoid contact with equipment containing aluminum, magnesium, zinc, cadmium, or their alloys.

**INCOMPATIBILITY:** (SPECIFIC MATERIALS TO AVOID)  
Corrosive to some metals. Do not use containers or equipment containing aluminum, magnesium, zinc, cadmium, or their alloys. Avoid strong bases.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Toxic, irritating vapors under fire conditions.

**HAZARDOUS POLYMERIZATION:** Not known to occur.

### 11. TOXICOLOGICAL INFORMATION:

**MUTAGENICITY:** In-vitro mutagenicity studies were negative in some cases and positive in other cases. Animal mutagenicity studies were negative.

### 12. ECOLOGICAL INFORMATION:

#### ENVIRONMENTAL FATE:

#### MOVEMENT & PARTITIONING:

Log octanol/water partition coefficient (Log Pow) is estimated using a structural fragment method to be 1.603. Potential for mobility in soil is very high (Koc is between 0 and 50).

#### DEGRADATION & PERSISTENCE:

Degradation is expected in the atmospheric environment. Degradation is expected in the soil environment. Inhibitory concentration (IC<sub>50</sub>) in OECD Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is 279 mg/L.

#### ECOTOXICOLOGY:

Material is highly toxic to aquatic organisms on an acute basis (LC<sub>50</sub> or EC<sub>50</sub> is <0.1 mg/L in the most sensitive species tested).  
Acute LC<sub>50</sub> in sheepshead minnow (*Cyprinodon variegatus*) is 0.068 mg/L.  
Acute LC<sub>50</sub> in rainbow trout (*Oncorhynchus mykiss*) is 1.6 mg/L.  
Acute immobilization EC<sub>50</sub> in water flea (*Daphnia magna*) is 1.4 mg/L.  
Growth inhibition EC<sub>50</sub> in green alga (*Selenastrum capricornutum*) is 3.1 mg/L.

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### 13. DISPOSAL CONSIDERATIONS:

**DISPOSAL METHOD:** Dispose of washings, contaminated materials, used absorbents, and other waste material as directed by local, state and federal regulations. Improper disposal of excess wastes is a violation of federal law. If excess wastes cannot be disposed of according to label instructions, 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. DEPARTMENT OF TRANSPORTATION INFORMATION:

#### FOR BULK CONTAINERS SHIPPED BY LAND OR VESSEL:

DICHLOROPROPENE/3/UN2047/PGII/RQ  
(1,3-DICHLOROPROPENE)

### 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  
A fire hazard

**CALIFORNIA PROPOSITION 65:** The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains a chemical(s) known to the State of California to cause cancer. During processing of our product, exposure may exceed the levels deemed to represent significant risk as defined by the emergency guidelines in 22 California Code of Regulations, Division 2, Chapter 3, Article 7.

**WARNING:** This product contains a chemical known to the State of California to cause cancer. The chemical is 1,2-Dichloropropane.

#### CONSENT ORDER FOR PMN (UNITED STATES)

In the United States, this material was reviewed by the Environmental Protection agency under PMN 88-608. There was no resulting consent order. However, the EPA is concerned that, based on an analogous chemical structure, this PMN material may cause oncogenicity, mutagenicity, neurotoxicity, and developmental toxicity and may present an unreasonable risk to unprotected workers. The EPA strongly recommends that, to mitigate inhalation exposure, workers should wear a NIOSH approved respirator and, to mitigate dermal exposure, should wear adequate protective clothing which covers any exposed parts of the body, impervious gloves, and chemical safety goggles or equivalent.

**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                   |
|---------------------|-------------|------------------------|
| 1,2-Dichloropropane | 000078-87-5 | NJ1 NJ2 NJ3<br>PA1 PA3 |

NJ1=New Jersey Special Health Hazard Substance (present at greater than or equal to 0.1%).  
NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).  
NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).  
PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).  
PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

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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.

### NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

|              |   |
|--------------|---|
| Health       | 4 |
| Flammability | 3 |
| Reactivity   | 0 |

**COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND):** This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA, which may require reporting of releases:

| Chemical Name | CAS# | RQ | % in Product |
|---------------|------|----|--------------|
|---------------|------|----|--------------|

|                     |             |      |      |
|---------------------|-------------|------|------|
| 1,2-Dichloropropane | 000078-87-5 | 1000 | 0.2% |
|---------------------|-------------|------|------|

### 16. OTHER INFORMATION:

**MSDS STATUS:** New  
Reference: DR-0019-3180

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