

Product Name: CORDON* Soil Fumigant**Issue Date:** 09/14/2012**Print Date:** 14 Sep 2012

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.

1. Product and Company Identification**Product Name**

CORDON* Soil Fumigant

COMPANY IDENTIFICATION

Dow AgroSciences LLC
A Subsidiary of The Dow Chemical Company
9330 Zionsville Road
Indianapolis, IN 46268-1189
United States

Customer Information Number:

800-992-5994

SDSQuestion@dow.com**EMERGENCY TELEPHONE NUMBER****24-Hour Emergency Contact:**

800-992-5994

Local Emergency Contact:

352-323-3500

2. Hazards Identification**Emergency Overview****Color:** Yellow**Physical State:** Liquid.**Odor:** No odor information provided**Hazards of product:**

DANGER! Flammable liquid and vapor. Causes skin burns. Causes eye irritation. May cause allergic skin reaction. Harmful if swallowed. Aspiration hazard. Can enter lungs and cause damage to body systems. Vapor explosion hazard. Vapors may travel a long distance; ignition and/or flash back may occur. Evacuate area. Keep upwind of spill. Stay out of low areas. Warn public of downwind explosion hazard. Eliminate ignition sources. Toxic fumes may be released in fire situations. Suspect cancer hazard. May cause cancer. Highly toxic to fish and/or other aquatic organisms.

OSHA Hazard Communication Standard

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

Potential Health Effects

Eye Contact: May cause severe eye irritation. May cause moderate corneal injury. Vapor may cause lacrimation (tears). Vapor may cause eye irritation experienced as mild discomfort and redness.

Skin Contact: Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

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

Skin Sensitization: As product: Has caused allergic skin reactions when tested in guinea pigs.

Inhalation: No adverse effects are anticipated from single exposure to vapor. Based on the available data, respiratory irritation was not observed.

Ingestion: Moderate toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause serious injury, even death.

Aspiration hazard: Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

Effects of Repeated Exposure: For the active ingredient(s): In animals, effects have been reported on the following organs: Bladder. Liver. Lung. Gastrointestinal tract. Respiratory tract. Nasal tissue. Blood-forming organs (Bone marrow & Spleen). For the minor component(s): In animals, effects have been reported on the following organs: Blood. Kidney. Liver. Respiratory tract.

Cancer Information: For the active ingredient(s): 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. For the minor component(s): Has caused cancer in laboratory animals. However, the relevance of this to humans is unknown.

Birth Defects/Developmental Effects: For the minor component(s): Has caused birth defects in lab animals only at doses producing severe toxicity in the mother. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Reproductive Effects: For the minor component(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

3. Composition Information

Component	CAS #	Amount
1,3-Dichloropropene	542-75-6	70.7 %
Solvent naphtha (petroleum), light aromatic	64742-95-6	>= 4.1 - <= 8.3 %
Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	>= 1.4 - <= 4.1 %
1,2,4-Trimethylbenzene	95-63-6	>= 1.2 - <= 2.5 %
Cumene	98-82-8	>= 0.1 - <= 0.3 %
Balance	Not available	>= 14.1 - <= 22.5 %

4. First-aid measures

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.

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. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be immediately available.

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 immediately available.

Ingestion: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

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), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

If burn is present, treat as any thermal burn, after decontamination. 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. 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

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function. Water fog, applied gently may be used as a blanket for fire extinguishment.

Extinguishing Media to Avoid: Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Hydrocarbons. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Electrically ground and bond all equipment. Flammable mixtures of this product are readily ignited even by static discharge. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Flammable mixtures may exist within the vapor space of containers at room temperature. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9. Dense smoke is produced when product burns.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Water may not be effective in extinguishing fire. 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. Do not use direct water stream. May spread fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. 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.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Evacuate area. Refer to Section 7, Handling, for additional precautionary measures. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. 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. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. 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. Spills or discharge to natural waterways is likely to kill aquatic organisms.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Ground and bond all containers and handling equipment. 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.

7. Handling and Storage

Handling

General Handling: Keep out of reach of children. Keep away from heat, sparks and flame. Do not get on skin or clothing. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. Never use air pressure for transferring product. No smoking, open flames or sources of ignition in handling and storage area. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. 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. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed. Do not store in: Zinc. Aluminum. Aluminum alloys. Store in original container. Store in a dry place. Do not store near food, foodstuffs, drugs or potable water supplies.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
1,3-Dichloropropene	ACGIH	TWA	1 ppm SKIN
1,2,4-Trimethylbenzene	ACGIH	TWA	25 ppm
Cumene	ACGIH	TWA	50 ppm

OSHA Table PEL 245 mg/m3 50 ppm SKIN
Z-1

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.

A "skin" notation following the inhalation 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 should be considered.

Personal Protection

Eye/Face Protection: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Ethyl vinyl alcohol laminate ("EVAL"). Viton. Examples of acceptable glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). 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 Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Appearance	
Physical State	Liquid.
Color	Yellow
Odor	No odor information provided
Odor Threshold	No test data available
pH	3.76 <i>pH Electrode</i>
Melting Point	Not applicable
Freezing Point	No test data available
Boiling Point (760 mmHg)	No test data available.
Flash Point - Closed Cup	31 °C (88 °F) <i>Closed Cup</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammable Limits In Air	Lower: No test data available Upper: No test data available
Vapor Pressure	No test data available
Vapor Density (air = 1)	No test data available
Specific Gravity (H₂O = 1)	No test data available

Solubility in water (by weight)	No test data available
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Autoignition Temperature	No test data available
Decomposition Temperature	No test data available
Dynamic Viscosity	5.46 mPa.s @ 20 °C 3.75 mPa.s @ 40 °C
Explosive properties	no data available
Oxidizing properties	no data available
Liquid Density	1.16 g/ml @ 20 °C <i>Digital density meter</i>

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Unstable at elevated temperatures.

Possibility of hazardous reactions

Polymerization will not occur.

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose.

Generation of gas during decomposition can cause pressure in closed systems. Avoid static discharge.

Incompatible Materials: Avoid contact with: Amines. Oxidizers. Strong bases. Avoid contact with metals such as: Zinc. Cadmium. Magnesium. Magnesium alloys. Aluminum. Aluminum alloys.

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: Carbon monoxide. Carbon dioxide.

Hydrogen chloride. Nitrogen oxides. Phosgene. Toxic gases are released during decomposition.

11. Toxicological Information

Acute Toxicity

Ingestion

As product: Estimated. LD50, 320 mg/kg

Dermal

As product: LD50, rat > 2,000 mg/kg

No deaths occurred at this concentration.

Inhalation

As product: LC50, 4 h, Vapor, rat, male and female > 2.24 mg/l

No deaths occurred at this concentration.

Eye damage/eye irritation

May cause severe eye irritation. May cause moderate corneal injury. Vapor may cause lacrimation (tears). Vapor may cause eye irritation experienced as mild discomfort and redness.

Skin corrosion/irritation

Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

Sensitization

Skin

As product: Has caused allergic skin reactions when tested in guinea pigs.

Respiratory

No relevant data found.

Repeated Dose Toxicity

For the active ingredient(s): In animals, effects have been reported on the following organs: Bladder. Liver. Lung. Gastrointestinal tract. Respiratory tract. Nasal tissue. Blood-forming organs (Bone marrow & Spleen). For the minor component(s): In animals, effects have been reported on the following organs: Blood. Kidney. Liver. Respiratory tract.

Chronic Toxicity and Carcinogenicity

For the active ingredient(s): 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. For the minor component(s): Has caused cancer in laboratory animals. However, the relevance of this to humans is unknown.

Carcinogenicity Classifications:

Component	List	Classification
1,3-Dichloropropene	ACGIH	Confirmed animal carcinogen with unknown relevance to humans.; Group A3
	NTP	Anticipated carcinogen.
	IARC	Possibly carcinogenic to humans.; 2B
Cumene	IARC	Possibly carcinogenic to humans.; 2B

Developmental Toxicity

For the minor component(s): Has caused birth defects in lab animals only at doses producing severe toxicity in the mother. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. For the active ingredient(s): Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Reproductive Toxicity

For the minor component(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. In animal studies, active ingredient did not interfere with reproduction.

Genetic Toxicology

For the active ingredient(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

12. Ecological Information

Toxicity

Data for Component: 1,3-Dichloropropene

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species). Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm). Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).

Fish Acute & Prolonged Toxicity

LC50, Cyprinodon variegatus (sheepshead minnow), 96 h: 0.87 mg/l

LC50, rainbow trout (*Oncorhynchus mykiss*), 96 h: 2.78 mg/l

LC50, *Lepomis macrochirus* (Bluegill sunfish), 96 h: 3.7 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, *Daphnia magna* (Water flea), static test, 48 h: 3.58 mg/l

EC50, eastern oyster (*Crassostrea virginica*), 48 h: 0.64 mg/l

Aquatic Plant Toxicity

EbC50, *Pseudokirchneriella subcapitata* (green algae), 72 h: 14.9 mg/l

EC50, diatom *Navicula* sp., 120 h: 2.35 mg/l

EC50, *Lemna gibba*, 14 d: 14.56 mg/l

Fish Chronic Toxicity Value (ChV)

Pimephales promelas (fathead minnow), flow-through test, 33 d, survival, NOEC:0.117 mg/l

Aquatic Invertebrates Chronic Toxicity Value

water flea *Daphnia magna*, NOEC: 0.0701 mg/l

Toxicity to Above Ground Organisms

oral LD50, *Colinus virginianus* (Bobwhite quail): 139.8 mg/kg bodyweight.

dietary LC50, *Colinus virginianus* (Bobwhite quail): > 10.000 mg/kg diet.

dietary LC50, *Anas platyrhynchos* (Mallard duck): > 6243 mg/kg diet.

contact LD50, *Apis mellifera* (bees): > 6.6 micrograms/bee

Toxicity to Soil Dwelling Organisms

LC50, Eisenia fetida (earthworms), 14 d: 55.6 mg/kg

Data for Component: Solvent naphtha (petroleum), light aromatic

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg). Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

Fish Acute & Prolonged Toxicity

LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 h: 9.22 mg/l

Toxicity to Above Ground Organisms

dietary LC50, Colinus virginianus (Bobwhite quail): > 6500 mg/kg diet.

oral LD50, Colinus virginianus (Bobwhite quail): > 2150 mg/kg bodyweight.

Data for Component: Benzenesulfonic acid, dodecyl-, calcium salt

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, Cyprinus carpio (Carp), 96 h: 2.8 - 4.2 mg/l

LC50, Oryzias latipes (Orange-red killifish), 48 h: 3.0 - 5.3 mg/l

Data for Component: 1,2,4-Trimethylbenzene

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 h: 7.7 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), 48 h: 3.6 mg/l

Data for Component: Cumene

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 h: 2.7 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 4.0 mg/l

Aquatic Plant Toxicity

EbC50, Pseudokirchneriella subcapitata (green algae), static test, biomass growth inhibition, 72 h: 2.6 mg/l

Aquatic Invertebrates Chronic Toxicity Value

Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, NOEC: 0.35 mg/l, LOEC: 0.66 mg/l

Toxicity to Above Ground Organisms

oral LD50, redwing blackbird (Agelaius phoeniceus): > 98 mg/kg

Persistence and Degradability**Data for Component: 1,3-Dichloropropene**

Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Stability in Water (1/2-life):

2.3 - 4.75 d

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
4.9 %	28 d	OECD 301D Test	fail

Theoretical Oxygen Demand: 1.281 mg/mg**Data for Component: Solvent naphtha (petroleum), light aromatic**

For the major component(s): Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%). For some component(s): Biodegradation under aerobic static laboratory conditions is low (BOD20 or BOD28/ThOD between 2.5 and 10%).

Data for Component: Benzenesulfonic acid, dodecyl-, calcium salt

No relevant data found.

OECD Biodegradation Tests: For similar material(s):

Biodegradation	Exposure Time	Method	10 Day Window
95 %	28 d	OECD 301E Test	pass

Data for Component: 1,2,4-Trimethylbenzene

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
4 - 18 %	28 d	OECD 301C Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.670E-11 cm ³ /s	0.641 d	Estimated.

Theoretical Oxygen Demand: 3.19 mg/mgData for Component: Cumene

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

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
86 %	28 d	OECD 301D Test	pass

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
6.90E-12 cm ³ /s	1.55 d	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
40.000 %	62.000 %	70.000 %	

Theoretical Oxygen Demand: 3.20 mg/mg**Bioaccumulative potential**Data for Component: 1,3-Dichloropropene**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).**Partition coefficient, n-octanol/water (log Pow):** 1.82 - 2.1 MeasuredData for Component: Solvent naphtha (petroleum), light aromatic**Bioaccumulation:** For the major component(s): Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). For the minor component(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3).Data for Component: Benzenesulfonic acid, dodecyl-, calcium salt**Bioaccumulation:** No relevant data found.Data for Component: 1,2,4-Trimethylbenzene**Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).**Partition coefficient, n-octanol/water (log Pow):** 3.63 Measured**Bioconcentration Factor (BCF):** 33 - 275; Cyprinus carpio (Carp); MeasuredData for Component: Cumene**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).**Partition coefficient, n-octanol/water (log Pow):** 3.4 - 3.7 Measured**Bioconcentration Factor (BCF):** 35.5; Fish; Measured**Mobility in soil**Data for Component: 1,3-Dichloropropene**Mobility in soil:** Potential for mobility in soil is very high (Koc between 0 and 50).**Partition coefficient, soil organic carbon/water (Koc):** 44.7 Measured**Henry's Law Constant (H):** 1.01E+02 - 1.70E+02 Pa*m³/mole.

Data for Component: Solvent naphtha (petroleum), light aromatic

Mobility in soil: For the major component(s):, Potential for mobility in soil is low (Koc between 500 and 2000).

Data for Component: Benzenesulfonic acid, dodecyl-, calcium salt

Mobility in soil: No relevant data found.

Data for Component: 1,2,4-Trimethylbenzene

Mobility in soil: Potential for mobility in soil is low (Koc between 500 and 2000).

Partition coefficient, soil organic carbon/water (Koc): 720 Estimated.

Henry's Law Constant (H): 6.16E-03 atm*m3/mole; 25 °C Measured

Data for Component: Cumene

Mobility in soil: Potential for mobility in soil is low (Koc between 500 and 2000).

Partition coefficient, soil organic carbon/water (Koc): 800 - 2,800 Estimated.

Henry's Law Constant (H): 1.15E-02 atm*m3/mole; 25 °C Measured

Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
98.38 %	0.33 %	< 0.01 %	1.26 %	0.03 %

13. Disposal Considerations

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.

14. Transport Information

DOT Non-Bulk

Proper Shipping Name: DICHLOROPROPENES

Hazard Class: 3 **ID Number:** UN2047 **Packing Group:** PG III

DOT Bulk

Proper Shipping Name: DICHLOROPROPENES

Hazard Class: 3 **ID Number:** UN2047 **Packing Group:** PG III

IMDG

Proper Shipping Name: DICHLOROPROPENES

Hazard Class: 3 **ID Number:** UN2047 **Packing Group:** PG III

EMS Number: F-E,S-D

Marine pollutant.: Yes

ICAO/IATA

Proper Shipping Name: DICHLOROPROPENES

Hazard Class: 3 **ID Number:** UN2047 **Packing Group:** PG III

Cargo Packing Instruction: 366

Passenger Packing Instruction: 355

Additional Information

Reportable quantity: 141 lb – 1,3-DICHLOROPROPENE, 24,242 lb – CALCIUM DODECYLBENZENESULFONATE

MARINE POLLUTANT (1,3-DICHLOROPROPENES)

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

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

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	Yes
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

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

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
1,3-Dichloropropene	542-75-6	70.7%
1,2,4-Trimethylbenzene	95-63-6	>= 1.2 - <= 2.5 %

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.

Component	CAS #	Amount
1,3-Dichloropropene	542-75-6	70.7%
1,2,4-Trimethylbenzene	95-63-6	>= 1.2 - <= 2.5 %
Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	>= 1.4 - <= 4.1 %

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.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

This product contains the following substances which are subject to CERCLA Section 103 reporting requirements and which are listed in 40 CFR 302.4.

Component	CAS #	Amount
1,3-Dichloropropene	542-75-6	70.7%
Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	>= 1.4 - <= 4.1 %

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

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Toxic Substances Control Act (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

16. Other Information**Hazard Rating System**

NFPA	Health	Fire	Reactivity
	3	3	0

Revision

Identification Number: 1037702 / 1016 / Issue Date 09/14/2012 / Version: 2.0

DAS Code: GF-2250

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

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

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.