



SAFETY DATA SHEET

DOW CHEMICAL CANADA ULC

Product name: UCARE™ Polymer JR-400

Issue Date: 10/14/2019

Print Date: 11/01/2022

DOW CHEMICAL CANADA ULC 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. IDENTIFICATION

Product name: UCARE™ Polymer JR-400

Recommended use of the chemical and restrictions on use

Identified uses: Conditioning polymer. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

COMPANY IDENTIFICATION

DOW CHEMICAL CANADA ULC
#2400, 215 - 2ND STREET S.W.
CALGARY AB T2P 1M4
CANADA

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact (transportation emergencies only): 1-800-424-9300

Local Emergency Contact (transportation emergencies only): 1-800-424-9300

24-Hour Emergency Contact: 1-989-636-4400

2. HAZARDS IDENTIFICATION

Hazard classification

This product is hazardous under the criteria of the Hazardous Products Regulation (HPR) as implemented under the Workplace Hazardous Materials Information System (WHMIS 2015).
Combustible dust - Category 1

Label elements

Signal word: **WARNING!**

Hazards

May form combustible dust concentrations in air.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration (w/w)
Cationic hydroxyethyl cellulose-High Charge Density	68610-92-4	>= 91.0 %
Water	7732-18-5	<= 5.6 %
Sodium acetate	127-09-3	<= 1.5 %
Sodium chloride	7647-14-5	<= 1.5 %
Isopropanol	67-63-0	<= 1.0 %

4. FIRST AID MEASURES

Description of first aid measures

General advice:

If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

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: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Water.. Dry chemical fire extinguishers.. Carbon dioxide fire extinguishers..

Unsuitable extinguishing media: No data available

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:.. Carbon monoxide.. Carbon dioxide..

Unusual Fire and Explosion Hazards: Do not permit dust to accumulate. When suspended in air dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated temperatures, spontaneous combustion may occur.. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge..

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry.. Soak thoroughly with water to cool and prevent re-ignition.. Cool surroundings with water to localize fire zone.. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires.. Dust explosion hazard may result from forceful application of fire extinguishing agents..

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).. If protective equipment is not available or not used, fight fire from a protected location or safe distance..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Spilled material may cause a slipping hazard. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. 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. Absorb with materials such as: Non-combustible material. Sand. Wash the spill site with water. Large spills: Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with eyes. Wash thoroughly after handling. No smoking, open flames or sources of ignition in handling and storage area. Good housekeeping and controlling of dusts are necessary for safe handling of product. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Keep away from heat, sparks and flame. Protect from heat. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a cool, dry place. Protect from atmospheric moisture. Avoid prolonged exposure to heat and air.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Consult local authorities for recommended exposure limits.

Component	Regulation	Type of listing	Value
Isopropanol	ACGIH	TWA	200 ppm
	Further information: CNS impair: Central Nervous System impairment; URT irr: Upper Respiratory Tract irritation; eye irr: Eye irritation; BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section); A4: Not classifiable as a human carcinogen		
	ACGIH	STEL	400 ppm
	Further information: CNS impair: Central Nervous System impairment; URT irr: Upper Respiratory Tract irritation; eye irr: Eye irritation; BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section); A4: Not classifiable as a human carcinogen		
	CA AB OEL	TWA	492 mg/m3 200 ppm
	CA AB OEL	STEL	984 mg/m3 400 ppm
	CA BC OEL	TWA	200 ppm
	CA BC OEL	STEL	400 ppm
	CA QC OEL	TWAEV	983 mg/m3 400 ppm
	CA QC OEL	STEV	1,230 mg/m3 500 ppm

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Isopropanol	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ACGIH BEI

Exposure controls

Engineering controls: 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.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

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: Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Neoprene. 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: 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, in dusty atmospheres, use an approved particulate respirator.

The following should be effective types of air-purifying respirators: Particulate filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Powder
Color	White to off-white
Odor	Amine.
Odor Threshold	No test data available
pH	5 - 7 <i>Literature</i>
Melting point/range	160 °C <i>Literature</i> Decomposes above
Freezing point	Not applicable
Boiling point (760 mmHg)	Not applicable
Flash point	closed cup No test data available
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	May form combustible dust concentrations in air.
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	No test data available
Water solubility	soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	320 °C <i>ASTM D1929</i>
Decomposition temperature	No test data available
Dynamic Viscosity	No test data available
Kinematic Viscosity	No test data available

Explosive properties	No data available
Oxidizing properties	No data available
Bulk density	395.7 kg/m ³ <i>Literature</i>
Molecular weight	200 - 800 kg/mol <i>Literature</i>

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

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Thermally stable at typical use temperatures. Hygroscopic

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Avoid temperatures above 200°C (392°F) Exposure to elevated temperatures can cause product to decompose. Avoid static discharge. Avoid moisture.

Incompatible materials: Avoid contact with oxidizing materials.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials..

11. TOXICOLOGICAL INFORMATION

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

Information on likely routes of exposure

Ingestion, Inhalation, Skin contact, Eye contact.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

For this family of materials:

LD50, Rat, > 10,000 mg/kg Estimated.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

For this family of materials: LD50, Rat, > 10,000 mg/kg Estimated.

Sodium acetate

LD50, Rat, > 3,500 mg/kg

Sodium chloride

Excessive exposure may cause: Nausea and/or vomiting. LD50, Rat, > 3,550 mg/kg

Isopropanol

May cause central nervous system depression. Signs and symptoms of excessive exposure may include: Facial flushing. Low blood pressure. Irregular heartbeats. May cause nausea and vomiting.

LD50, Rat, 5,840 mg/kg OECD 401 or equivalent

Acute dermal toxicity

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

For this family of materials:

LD50, Rat, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

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

For this family of materials: LD50, Rat, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

Sodium acetate

LD50, Rabbit, > 10,000 mg/kg

Sodium chloride

LD50, Rabbit, 10,000 mg/kg

Isopropanol

LD50, Rabbit, 12,900 mg/kg

Acute inhalation toxicity

No adverse effects are anticipated from single exposure to dust.

As product:

The LC50 has not been determined.,

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

No adverse effects are anticipated from single exposure to dust.

As product: The LC50 has not been determined.,

Sodium acetate

LC50, Rat, 1 Hour, dust/mist, > 30 mg/l No deaths occurred at this concentration.

Sodium chloride

Dust may cause irritation to upper respiratory tract (nose and throat).

LC50, Rat, 1 Hour, dust/mist, > 42 mg/l

Isopropanol

LC50, Rat, female, 8 Hour, vapour, 19000 ppm

Skin corrosion/irritation

Based on product testing:

Prolonged contact may cause slight skin irritation with local redness.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

Prolonged contact may cause slight skin irritation with local redness.

Sodium acetate

Prolonged exposure not likely to cause significant skin irritation.

Sodium chloride

Brief contact is essentially nonirritating to skin.

Prolonged contact may cause slight skin irritation with local redness.

May cause more severe response if skin is abraded (scratched or cut).

Isopropanol

Prolonged exposure not likely to cause significant skin irritation.

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

Based on product testing:

May cause slight eye irritation.

Corneal injury is unlikely.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

May cause slight eye irritation.

Corneal injury is unlikely.

Sodium acetate

May cause slight eye irritation.

Corneal injury is unlikely.

Sodium chloride

May cause eye irritation.

May cause slight temporary corneal injury.

Dust may irritate eyes.

Isopropanol

May cause pain disproportionate to the level of irritation to eye tissues.

May cause moderate eye irritation.

May cause moderate corneal injury.

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

Vapor may cause lacrimation (tears).

Sensitization

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Sodium acetate

A similar material did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Sodium chloride

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No signs of respiratory sensitization have been reported.

Isopropanol

Did not demonstrate the potential for contact allergy in mice.
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.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

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

Sodium acetate

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

Sodium chloride

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

Isopropanol

May cause drowsiness or dizziness.
Route of Exposure: Ingestion
Target Organs: Central nervous system

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

Based on physical properties, not likely to be an aspiration hazard.

Sodium acetate

Based on physical properties, not likely to be an aspiration hazard.

Sodium chloride

Based on physical properties, not likely to be an aspiration hazard.

Isopropanol

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

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the minor component(s):

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

Liver.

Kidney.

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

Observations in animals include:

Lethargy.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

For the minor component(s):

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

Liver.

Kidney.

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

Observations in animals include:

Lethargy.

Sodium acetate

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Sodium chloride

Medical experience with sodium chloride has shown a strong association between elevated blood pressure and prolonged dietary overuse. Related effects could occur in the kidneys.

Isopropanol

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

Kidney.

Liver.

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

Observations in animals include:

Lethargy.

Carcinogenicity

No relevant data found.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

No relevant data found.

Sodium acetate

No relevant data found.

Sodium chloride

No relevant data found.

Isopropanol

Did not cause cancer in laboratory animals.

Teratogenicity

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

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

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

Sodium acetate

For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Sodium chloride

No relevant data found.

Isopropanol

Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Reproductive toxicity

No relevant data found.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

No relevant data found.

Sodium acetate

In animal studies, a similar material has been shown not to interfere with reproduction.

Sodium chloride

No relevant data found.

Isopropanol

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Mutagenicity

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Information for components:

Cationic hydroxyethyl cellulose-High Charge Density

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Sodium acetate

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Sodium chloride

In vitro genetic toxicity studies were predominantly negative.

Isopropanol

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

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

Toxicity

Acute toxicity to fish

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).

LC50, Pimephales promelas (fathead minnow), static test, 96 Hour, 2.4 - 3.7 mg/l

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), static test, 48 Hour, 34 - 48 mg/l

Toxicity to bacteria

EC50, activated sludge, 3 Hour, Respiration rates., > 1,000 mg/l

EC50, Bacteria, 16 Hour, 2,500 mg/l

Persistence and degradability

Biodegradability: Biodegradation under aerobic static laboratory conditions is low (BOD20 or BOD28/ThOD between 2.5 and 10%).

Chemical Oxygen Demand: 1.27 mg/mg Estimated.

Biological oxygen demand (BOD)

Incubation Time	BOD
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5 d	5.000 %
10 d	5.000 %
20 d	5.000 %

Bioaccumulative potential

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Mobility in soil

No data available.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. Landfill.

14. TRANSPORT INFORMATION

TDG

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Cationic hydroxyethyl cellulose)
UN number	UN 3077
Class	9
Packing group	III
Marine pollutant	Cationic hydroxyethyl cellulose

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Cationic hydroxyethyl cellulose)
UN number	UN 3077
Class	9
Packing group	III
Marine pollutant	Cationic hydroxyethyl cellulose
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.(Cationic hydroxyethyl cellulose)
UN number	UN 3077
Class	9
Packing group	III

Further information:

NOT REGULATED PER TDG EXEMPTION 1.45.1 FOR ROAD OR RAIL

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.

15. REGULATORY INFORMATION

Canadian Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. OTHER INFORMATION

Revision

Identification Number: 165680 / A208 / Issue Date: 10/14/2019 / Version: 10.0

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)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
CA AB OEL	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	Canada. British Columbia OEL
CA QC OEL	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
STEL	short-term exposure limit
STEV	Short-term exposure value
TWA	8-hour time weighted average
TWAEV	Time-weighted average exposure value

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the

German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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 CHEMICAL CANADA ULC 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.

CA