



# Material Safety Data Sheet

The Dow Chemical Company

**Product Name:** VORACOR\* CK 481 Additive

**Issue Date:** 01/18/2012

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The Dow Chemical Company 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

VORACOR\* CK 481 Additive

### COMPANY IDENTIFICATION

The Dow Chemical Company  
2030 Willard H. Dow Center  
Midland, MI 48674  
United States

Customer Information Number:

800-258-2436

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

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:**

989-636-4400

**Local Emergency Contact:**

989-636-4400

## 2. Hazards Identification

### Emergency Overview

**Color:** Colorless to yellow

**Physical State:** Liquid.

**Odor:** Amine.

**Hazards of product:**

WARNING! Causes eye irritation. May cause skin irritation. May be harmful if swallowed. Isolate area. 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 severe corneal injury.

**Skin Contact:** Prolonged contact may cause moderate skin irritation with local redness.

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

**Inhalation:** At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous.

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**Ingestion:** Low 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 injury.

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

**Effects of Repeated Exposure:** Excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination, convulsions. Contains component(s) which have been reported to cause effects on the following organs in animals: Respiratory tract.

### 3. Composition Information

Component	CAS #	Amount
Polyether polyol	Trade secret	>= 30.0 - <= 60.0 %
Oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis-(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol	940912-28-7	>= 10.0 - <= 30.0 %
Benzyltrimethylamine	103-83-3	>= 5.0 - <= 10.0 %
Dipropylene glycol	25265-71-8	>= 5.0 - <= 10.0 %
Organic Phosphate	Trade Secret	> 1.0 %

### 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 effects occur, consult a physician.

**Skin Contact:** Wash skin with plenty of water.

**Eye Contact:** 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. Suitable emergency eye wash facility should be immediately available.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

#### 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

Cholinesterase inhibition has been noted in human exposure but is not of benefit in determining exposure and is not correlated with signs of exposure. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

### 5. Fire Fighting Measures

#### Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Extinguishing Media to Avoid:** Do not use direct water stream. May spread 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. Carbon monoxide. Carbon dioxide. Hydrogen halides.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

**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. Do not use direct water stream. May spread fire. 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. 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:** Isolate area. Refer to Section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard. 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. Absorb with materials such as: Dirt. Sand. Sawdust. Collect in suitable and properly labeled containers. Wash the spill site with water. See Section 13, Disposal Considerations, for additional information.

## 7. Handling and Storage

### Handling

**General Handling:** Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Avoid breathing vapor. Use with adequate ventilation. Keep container closed. This material is hygroscopic in nature. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Other Precautions:** Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

### Storage

Protect from atmospheric moisture. Store in a dry place. Avoid prolonged exposure to heat and air. Store in the following material(s): Carbon steel. Stainless steel. Polypropylene. Polyethylene-lined container. Teflon. Glass-lined container. Aluminum. Plasite 3066 lined container. Plasite 3070 lined container. 316 stainless steel. See Section 10 for more specific information.

**Storage Period:**

**Storage temperature:**

6 Months

19 - 40 °C

## 8. Exposure Controls / Personal Protection

### Exposure Limits

None established

### Personal Protection

**Eye/Face Protection:** Use chemical goggles.

**Skin Protection:** Wear clean, body-covering clothing.

**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 alcohol ("PVA"). 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.

**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 discomfort is experienced, 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:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands 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**

Colorless to yellow

**Odor**

Amine.

**Odor Threshold**

No test data available

**pH**

Not applicable

**Melting Point**

No test data available

**Freezing Point**

No test data available

**Boiling Point (760 mmHg)**

> 100 °C (> 212 °F) *Estimated.*

**Flash Point - Closed Cup**

> 100 °C (> 212 °F) *Estimated.*

**Evaporation Rate (Butyl Acetate = 1)**

No test data available

**Flammability (solid, gas)**

Not applicable to liquids

**Flammable Limits In Air**

**Lower:** No test data available

**Upper:** No test data available

**Vapor Pressure**

< 0.001 mmHg @ 25 °C *Estimated.*

**Vapor Density (air = 1)**

No test data available

**Specific Gravity (H<sub>2</sub>O = 1)**

1.04 25 °C/25 °C *ASTM D941*

**Solubility in water (by weight)**

No test data available

<b>Partition coefficient, n-octanol/water (log Pow)</b>	No data available for this product. See Section 12 for individual component data.
<b>Autoignition Temperature</b>	No test data available
<b>Decomposition Temperature</b>	No test data available
<b>Dynamic Viscosity</b>	233 cps @ 25 °C ASTM D4287
<b>Kinematic Viscosity</b>	No test data available
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	No

## 10. Stability and Reactivity

### Reactivity

No dangerous reaction known under conditions of normal use.

### Chemical stability

Stable under recommended storage conditions. See Storage, Section 7.

### Possibility of hazardous reactions

Polymerization will not occur by itself.

**Conditions to Avoid:** Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

**Incompatible Materials:** Avoid contact with oxidizing materials. Avoid contact with: Strong acids. Strong bases. Avoid contact with metals such as: Brass. Zinc. Copper. Avoid unintended contact with isocyanates. The reaction of polyols and isocyanates generates heat.

### 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 dioxide. Alcohols. Ethers. Hydrocarbons. Hydrogen halides. Ketones. Polymer fragments.

## 11. Toxicological Information

### Acute Toxicity

#### Ingestion

As product: Single dose oral LD50 has not been determined.  
Estimated. LD50, rat > 1,000 mg/kg

#### Dermal

As product: The dermal LD50 has not been determined.  
Estimated. LD50, rabbit > 2,000 mg/kg

#### Inhalation

As product: The LC50 has not been determined.

### Eye damage/eye irritation

May cause severe eye irritation. May cause severe corneal injury.

### Skin corrosion/irritation

Prolonged contact may cause moderate skin irritation with local redness.

### Sensitization

#### Skin

No relevant data found.

#### Respiratory

No relevant data found.

### Repeated Dose Toxicity

Excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination, convulsions. Contains component(s) which have been reported to cause effects on the following organs in animals: Respiratory tract.

**Chronic Toxicity and Carcinogenicity**

No relevant data found.

**Developmental Toxicity**

No relevant data found.

**Reproductive Toxicity**

No relevant data found.

**Genetic Toxicology**

In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity studies in animals were negative for component(s) tested.

**12. Ecological Information****Toxicity****Data for Component: Oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis-(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol**

Based on information for a similar material: Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

Based on information for a similar material: LC50, Cyprinodon variegatus (sheepshead minnow), static test, 96 h: 17 mg/l

**Aquatic Invertebrate Acute Toxicity**

Based on information for a similar material: LC50, saltwater mysid Mysidopsis bahia, static test, 96 h: 2.6 mg/l

**Aquatic Plant Toxicity**

Based on information for a similar material: EbC50, Skeletonema costatum, static test, biomass growth inhibition, 96 h: 0.63 mg/l

**Data for Component: Benzyl dimethylamine**

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). May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

**Fish Acute & Prolonged Toxicity**

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 h: 37.8 mg/l

**Aquatic Invertebrate Acute Toxicity**

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: > 100 mg/l

**Aquatic Plant Toxicity**

ErC50, Desmodesmus subspicatus (green algae), Growth rate inhibition, 72 h: 1.34 mg/l

**Toxicity to Micro-organisms**

EC50, DIN 38412; Pseudomonas putida, Growth inhibition, 17 h: 534 mg/l

**Aquatic Invertebrates Chronic Toxicity Value**

Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, NOEC: 0.789 mg/l, LOEC: 2.622 mg/l

**Data for Component: Dipropylene glycol**

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).

**Fish Acute & Prolonged Toxicity**

Based on information for a similar material: LC50, Pimephales promelas (fathead minnow), static test, 96 h: 46,500 mg/l

**Aquatic Invertebrate Acute Toxicity**

EC50, Daphnia magna (Water flea), static test, 48 h, mobility: > 100 mg/l

**Aquatic Plant Toxicity**

EC50, Desmodesmus subspicatus (green algae), static test, biomass growth inhibition, 72 h: > 100 mg/l

**Toxicity to Micro-organisms**

EC50; Bacteria, 16 h: > 5,000 mg/l

**Toxicity to Above Ground Organisms**LD50, *Colinus virginianus* (Bobwhite quail): > 2,000 mg/kg**Data for Component: Organic Phosphate**

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**LC50, *Lepomis macrochirus* (Bluegill sunfish), static test, 96 h: 84 mg/l**Aquatic Invertebrate Acute Toxicity**EC50, *Daphnia magna* (Water flea), 48 h, immobilization: 131 mg/l**Aquatic Plant Toxicity**ErC50, *Pseudokirchneriella subcapitata* (green algae), static test, Growth rate inhibition, 96 h: 82 mg/l**Toxicity to Micro-organisms**

EC50, OECD 209 Test; activated sludge, Respiration inhibition, 3 h: 784 mg/l

**Aquatic Invertebrates Chronic Toxicity Value***Daphnia magna* (Water flea), semi-static test, 21 d, number of offspring, NOEC: 32 mg/l**Data for Component: Polyether polyol**

For this family of materials: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 &gt;100 mg/L in the most sensitive species tested).

**Aquatic Invertebrates Chronic Toxicity Value***Daphnia magna* (Water flea), semi-static test, 21 d, mortality, NOEC: >= 10 mg/l, LOEC: > 10 mg/l**Data for Component: Polyether polyol**

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

**Fish Acute & Prolonged Toxicity**LC50, *Pimephales promelas* (fathead minnow), static test, 96 h: 6,250 mg/l**Aquatic Invertebrate Acute Toxicity**LC50, *Daphnia magna* (Water flea), static test, 48 h, survival: 176 mg/l**Persistence and Degradability****Data for Component: Oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis-(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol**

Most polyols are expected to degrade only slowly in the environment.

**Data for Component: Benzyl dimethylamine**

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. Material is ultimately biodegradable (reaches &gt; 70% biodegradation in OECD test(s) for inherent biodegradability).

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
0 - 2 %	28 d	OECD 301C Test	Not applicable
90 - 100 %	13 d	OECD 302B Test	Not applicable

**Indirect Photodegradation with OH Radicals**

Rate Constant	Atmospheric Half-life	Method
8.206E-11 cm <sup>3</sup> /s	0.130 d	Estimated.

**Theoretical Oxygen Demand:** 3.20 mg/mg**Data for Component: Dipropylene glycol**

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

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
84.4 %	28 d	OECD 301F Test	Not applicable
23.6 %	64 d	OECD 306 Test	Not applicable

**Theoretical Oxygen Demand:** 1.91 mg/mg

Data for Component: **Organic Phosphate**

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
14 %	28 d	OECD 301E Test	fail
95 %	64 d	OECD 302A Test	Not applicable

**Indirect Photodegradation with OH Radicals**

Rate Constant	Atmospheric Half-life	Method
4.47E-11 cm <sup>3</sup> /s	0.24 d	Estimated.

**Theoretical Oxygen Demand:** 1.17 mg/mg

Data for Component: **Polyether polyol**

For this family of materials: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. Material is ultimately biodegradable (reaches > 70% biodegradation in OECD test(s) for inherent biodegradability).

Data for Component: **Polyether polyol**

Biodegradation under aerobic static laboratory conditions is low (BOD<sub>20</sub> or BOD<sub>28</sub>/ThOD between 2.5 and 10%).

**Biological oxygen demand (BOD):**

BOD 5	BOD 10	BOD 20	BOD 28
	4 %	4 %	4 %

**Chemical Oxygen Demand:** 2.22 mg/mg

**Theoretical Oxygen Demand:** 2.14 mg/mg

**Bioaccumulative potential**Data for Component: **Oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis-(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** 0.2 Measured

Data for Component: **Benzyl dimethylamine**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** 1.98 Measured

**Bioconcentration Factor (BCF):** <= 22; Cyprinus carpio (Carp); Measured

Data for Component: **Dipropylene glycol**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** -0.46 Shake flask (OECD 107 Test)

**Bioconcentration Factor (BCF):** 0.3 - 4.6; Cyprinus carpio (Carp); Measured

Data for Component: **Organic Phosphate**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** 2.59 Measured

**Bioconcentration Factor (BCF):** 0.8 - 4.6; Cyprinus carpio (Carp); Measured

Data for Component: **Polyether polyol**

**Bioaccumulation:** No bioconcentration is expected because of the relatively high water solubility.

Data for Component: **Polyether polyol**

**Bioaccumulation:** No bioconcentration is expected because of the relatively high water solubility.

**Mobility in soil**Data for Component: **Oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis-(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol**

**Mobility in soil:** Expected to be relatively immobile in soil (Koc > 5000).

Data for Component: **Benzyl dimethylamine**

**Mobility in soil:** Potential for mobility in soil is slight (Koc between 2000 and 5000).

**Partition coefficient, soil organic carbon/water (Koc):** 630 Estimated.

**Henry's Law Constant (H):** 2.95E-06 atm\*m<sup>3</sup>/mole; 25 °C Estimated.



Data for Component: **Dipropylene glycol**

**Mobility in soil:** Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process., Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient, soil organic carbon/water (Koc):** 0.76 Estimated.

**Henry's Law Constant (H):** 5.63E-09 atm\*m3/mole; 25 °C Estimated.

Data for Component: **Organic Phosphate**

**Mobility in soil:** Potential for mobility in soil is slight (Koc between 2000 and 5000).

**Partition coefficient, soil organic carbon/water (Koc):** 1,300 Estimated.

**Henry's Law Constant (H):** < 1.35E-05 atm\*m3/mole; 25 °C Estimated.

Data for Component: **Polyether polyol**

**Mobility in soil:** No data available.

Data for Component: **Polyether polyol**

**Mobility in soil:** No data available.

### 13. Disposal Considerations

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. For additional information, refer to: Handling & Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section 10 Regulatory Information, MSDS Section 15

### 14. Transport Information

**DOT Non-Bulk**

NOT REGULATED

**DOT Bulk**

NOT REGULATED

**IMDG****Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.**Technical Name:** oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis-(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol**Hazard Class:** 9 **ID Number:** UN3082 **Packing Group:** PG III**EMS Number:** F-A,S-F**Marine pollutant.:** Yes**ICAO/IATA****Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.**Technical Name:** oxirane, 2-methyl-, polymer with oxirane, ether with 2,6-bis[[bis-(2-hydroxyethyl)amino]methyl]-4-branched nonylphenol**Hazard Class:** 9 **ID Number:** UN3082 **Packing Group:** PG III**Cargo Packing Instruction:** 964**Passenger Packing Instruction:** 964**Additional Information**

MARINE POLLUTANT

*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	No
Fire Hazard	No
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

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

Component	CAS #	Amount
Dipropylene glycol	25265-71-8	>= 5.0 - <= 10.0 %

### 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.

### 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.

Component	CAS #	Amount
Bischloroisopropyl Ether	108-60-1	< 100.0 PPM

### US. Toxic Substances Control Act

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

### CEPA - 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

### Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact.

### Recommended Uses and Restrictions

**Identified uses**

Component(s) for the manufacture of urethane polymers. 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.

**Revision**

Identification Number: 1058652 / 1001 / Issue Date 01/18/2012 / Version: 1.0

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.

*The Dow Chemical Company 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.*