

## SAFETY DATA SHEET

BOSTIK, INC.

**Product name:** CR-89

**Issue Date:** 11/12/2024

**Print Date:** 12/02/2024

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

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### 1. IDENTIFICATION

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**Product name:** CR-89

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

**Identified uses:** Packaging laminating adhesives

**COMPANY IDENTIFICATION**

BOSTIK, INC.

11320 W. WATERTOWN PLANK RD.

WAUWATOSA WI 53226-3434

UNITED STATES

**Customer Information Number:**

1-800-726-7845

msds@bostik.com

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 1-800-424-9300

**Local Emergency Contact:** 1-800-424-9300

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### 2. HAZARDS IDENTIFICATION

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**Hazard classification**

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Respiratory sensitisation - Category 1

Skin sensitisation - Category 1

Reproductive toxicity - Category 2

**Label elements**

**Hazard pictograms**



Signal word: **DANGER!**

**Hazards**

May cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Suspected of damaging fertility or the unborn child.

**Precautionary statements****Prevention**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Avoid breathing mist or vapours.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves, protective clothing, eye protection and/or face protection.

In case of inadequate ventilation wear respiratory protection.

**Response**

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

IF exposed or concerned: Get medical advice/ attention.

If skin irritation or rash occurs: Get medical advice/ attention.

Wash contaminated clothing before reuse.

**Storage**

Store locked up.

**Disposal**

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

**Other hazards**

No data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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**Chemical nature:** Polyol

This product is a mixture.

Component	CASRN	Concentration
Polypropylene glycol, diphenylmethane diisocyanate polymer	39420-98-9	>= 59.0 - <= 61.0 %
Polyol	Trade secret	>= 14.0 - <= 16.0 %
Polypropylene glycol	25322-69-4	>= 11.0 - <= 13.0 %
Trimethylolpropane	77-99-6	>= 1.0 - <= 3.0 %

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## 4. FIRST AID MEASURES

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### Description of first aid measures

#### General advice:

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

**Inhalation:** Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation or rash occurs. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

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

**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:

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of damaging fertility or the unborn child.

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

**Notes to physician:** May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Maintain adequate ventilation and oxygenation of the patient. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

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## 5. FIREFIGHTING MEASURES

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### Extinguishing media

**Suitable extinguishing media:** Alcohol-resistant foam. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Water spray.

**Unsuitable extinguishing media:** None known..

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

**Hazardous combustion products:** Carbon oxides. Nitrogen oxides (NO<sub>x</sub>).

**Unusual Fire and Explosion Hazards:** Exposure to combustion products may be a hazard to health..

**Advice for firefighters**

**Fire Fighting Procedures:** Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

**Special protective equipment for firefighters:** In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

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**6. ACCIDENTAL RELEASE MEASURES**

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**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Confined space entry procedures must be followed before entering the area. Follow safe handling advice and personal protective equipment recommendations.

**Environmental precautions:** Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

**Methods and materials for containment and cleaning up:** Soak up with inert absorbent material. Clean up remaining materials from spill with suitable absorbant. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. See sections: 7, 8, 11, 12 and 13.

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**7. HANDLING AND STORAGE**

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**Precautions for safe handling:** Do not get on skin or clothing. Avoid inhalation of vapour or mist. Avoid contact with eyes. Do not swallow. Keep container tightly closed. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied. Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

**Conditions for safe storage:** Keep in properly labelled containers. Store locked up. Keep tightly closed. Store in accordance with the particular national regulations.

Do not store with the following product types: Strong oxidizing agents.  
Unsuitable materials for containers: None known.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Control parameters

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

Component	Regulation	Type of listing	Value
Polyol	OSHA Z-1	TWA mist, respirable fraction	5 mg/m3
	OSHA Z-1	TWA mist, total dust	15 mg/m3
Polypropylene glycol	US WEEL	TWA aerosol	10 mg/m3
Trimethylolpropane	Dow IHG	TWA	10 mg/m3
	Dow IHG	STEL	20 mg/m3

### Exposure controls

**Engineering controls:** Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure.

### Individual protection measures

**Eye/face protection:** Use chemical goggles.

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** 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.

**Respiratory protection:** Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

Physical state	liquid
Color	brown
Odor	No data available
Odor Threshold	No data available
pH	Not applicable, substance/mixture is non-soluble (in water)
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	>93.34 °C ( 200.01 °F) <i>closed cup</i>
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not Applicable
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid.
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	No data available
Water solubility	insoluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Dynamic Viscosity	500 - 1,500 mPa.s at 25 °C (77 °F) ( <i>Brookfield Viscosity</i> )
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available
Percent volatility	0 %

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

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** Not classified as a reactivity hazard.

**Chemical stability:** Stable under normal conditions.

**Possibility of hazardous reactions:** Can react with strong oxidizing agents. Vapours may form explosive mixture with air.

**Conditions to avoid:** None known.

**Incompatible materials:** Avoid contact with oxidizing materials.

**Hazardous decomposition products:**

Decomposition products can include and are not limited to: Isocyanates. Hydrogen isocyanate. Amines. Aldehydes. Alcohols. Ethers. Organic acids. Hydrogen Cyanide. Carbon oxides. Hydrocarbons. Ketones.

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## 11. TOXICOLOGICAL INFORMATION

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

**Information on likely routes of exposure**

Inhalation, Eye contact, Skin contact, Ingestion.

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

**Acute Toxicity Endpoints:**

Not classified based on available information.

**Acute oral toxicity**

**Information for the Product:**

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. Observations in animals include: Gastrointestinal irritation.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s):  
LD50, > 2,000 mg/kg Estimated.

**Information for components:**

**Polypropylene glycol, diphenylmethane diisocyanate polymer**

Typical for this family of materials. Observations in animals include: Gastrointestinal irritation. LD50, Rat, > 2,000 mg/kg Estimated. No deaths occurred at this concentration.

**Polyol**

May cause abdominal discomfort or diarrhea. May cause nausea and vomiting. The stimulant effects of this material are reportedly strong enough to induce uterine contractions in pregnant women. LD50, Guinea pig, > 50,000 mg/kg

**Polypropylene glycol**

Typical for this family of materials. In animals, high oral doses caused central nervous system effects and irregular heartbeats. LD50, Rat, >1,000 mg/kg Estimated.

**Trimethylolpropane**

LD50, Rat, 14,700 mg/kg

**Acute dermal toxicity****Information for the Product:**

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

As product: The dermal LD50 has not been determined.

Based on information for component(s):

LD50, > 2,000 mg/kg Estimated.

**Information for components:****Polypropylene glycol, diphenylmethane diisocyanate polymer**

Typical for this family of materials. LD50, Rabbit, > 9,400 mg/kg

**Polyol**

LD50, Rat, > 2,000 mg/kg

**Polypropylene glycol**

Typical for this family of materials. LD50, Rabbit, > 10,000 mg/kg

**Trimethylolpropane**

LD50, Rabbit, > 10,000 mg/kg

**Acute inhalation toxicity****Information for the Product:**

At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.

As product: The LC50 has not been determined.

**Information for components:****Polypropylene glycol, diphenylmethane diisocyanate polymer**

The LC50 has not been determined.

**Polyol**

The LC50 has not been determined.

**Polypropylene glycol**

The LC50 has not been determined.



**Trimethylolpropane**

LC50, Rat, 4 Hour, dust/mist, > 0.85 mg/l The LC50 value is greater than the Maximum Attainable Concentration. No deaths occurred at this concentration.

**Skin corrosion/irritation**

Not classified based on available information.

**Information for the Product:**

Based on information for component(s):  
Prolonged contact may cause skin irritation with local redness.  
Material may stick to skin causing irritation upon removal.  
May stain skin.

**Information for components:**

**Polypropylene glycol, diphenylmethane diisocyanate polymer**

Prolonged contact may cause skin irritation with local redness.  
Material may stick to skin causing irritation upon removal.  
May stain skin.

**Polyol**

Prolonged exposure not likely to cause significant skin irritation.

**Polypropylene glycol**

Essentially nonirritating to skin.

**Trimethylolpropane**

Brief contact is essentially nonirritating to skin.  
May cause more severe response if skin is damp.  
Prolonged or repeated exposure may cause defatting of the skin leading to drying or flaking of skin.

**Serious eye damage/eye irritation**

Not classified based on available information.

**Information for the Product:**

Based on information for component(s):  
May cause eye irritation.  
May cause slight temporary corneal injury.

**Information for components:**

**Polypropylene glycol, diphenylmethane diisocyanate polymer**

May cause eye irritation.  
May cause slight temporary corneal injury.

**Polyol**

May cause slight temporary eye irritation.

**Polypropylene glycol**

May cause slight temporary eye irritation.  
Corneal injury is unlikely.  
Vapor or mist may cause eye irritation.

**Trimethylolpropane**

May cause pain disproportionate to the level of irritation to eye tissues.  
May cause slight temporary eye irritation.  
Corneal injury is unlikely.

**Sensitization****For skin sensitization:**

May cause an allergic skin reaction.

**For respiratory sensitization:**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Information for the Product:**

Skin contact may cause an allergic skin reaction.  
Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

May cause allergic respiratory reaction.  
MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.  
Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Information for components:****Polypropylene glycol, diphenylmethane diisocyanate polymer**

Skin contact may cause an allergic skin reaction.

May cause allergic respiratory reaction.

**Polyol**

For skin sensitization:  
No relevant data found.

For respiratory sensitization:  
No relevant data found.

**Polypropylene glycol**

For this family of materials:  
Did not cause allergic skin reactions when tested in humans.  
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:  
No relevant data found.

**Trimethylolpropane**

Did not cause allergic skin reactions when tested in humans.  
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:  
No relevant data found.

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

Not classified based on available information.

#### Information for the Product:

Product test data not available.

#### Information for components:

##### Polypropylene glycol, diphenylmethane diisocyanate polymer

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

##### Polyol

Available data are inadequate to determine single exposure specific target organ toxicity.

##### Polypropylene glycol

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

##### Trimethylolpropane

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

### Aspiration Hazard

Not classified based on available information.

#### Information for the Product:

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

#### Information for components:

##### Polypropylene glycol, diphenylmethane diisocyanate polymer

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

##### Polyol

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

##### Polypropylene glycol

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

##### Trimethylolpropane

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

**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)

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:****Polypropylene glycol, diphenylmethane diisocyanate polymer**

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

**Polyol**

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

**Polypropylene glycol**

For this family of materials:

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

**Trimethylolpropane**

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

Liver.

Spleen.

Kidney.

Blood.

**Carcinogenicity**

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:****Polypropylene glycol, diphenylmethane diisocyanate polymer**

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**Polyol**

Available data are inadequate to evaluate carcinogenicity.

**Polypropylene glycol**

No relevant data found.

**Trimethylolpropane**

No relevant data found.

**Teratogenicity**

Suspected of damaging fertility or the unborn child.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Polypropylene glycol, diphenylmethane diisocyanate polymer**

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

**Polyol**

No relevant data found.

**Polypropylene glycol**

No relevant data found.

**Trimethylolpropane**

Has caused birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Reproductive toxicity**

Suspected of damaging fertility or the unborn child.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Polypropylene glycol, diphenylmethane diisocyanate polymer**

No relevant data found.

**Polyol**

In animal studies, did not interfere with reproduction.

**Polypropylene glycol**

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

**Trimethylolpropane**

In animal studies, has been shown to interfere with reproduction.

**Mutagenicity**

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Polypropylene glycol, diphenylmethane diisocyanate polymer**

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

**Polyol**

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

**Polypropylene glycol**

For this family of materials: In vitro genetic toxicity studies were negative.

**Trimethylolpropane**

In vitro genetic toxicity studies were negative.

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## 12. ECOLOGICAL INFORMATION

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

**Toxicity****Polypropylene glycol, diphenylmethane diisocyanate polymer****Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.

**Polyol****Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.

**Acute toxicity to aquatic invertebrates**

Based on data from similar materials

EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

Based on data from similar materials

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, 100 mg/l, OECD Test Guideline 201

Based on data from similar materials

EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 100 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**

Based on data from similar materials

EC10, Pseudomonas putida, 30 min, 67,000 mg/l

**Polypropylene glycol****Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis

(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 Hour, 1,700 mg/l, OECD Test Guideline 203 or Equivalent

**Trimethylolpropane****Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).  
LC50, Leuciscus idus (Golden orfe), static test, 48 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 48 Hour, 13,000 mg/l

**Acute toxicity to algae/aquatic plants**

EC50, Pseudokirchneriella subcapitata (green algae), Biomass, > 1,000 mg/l

**Toxicity to bacteria**

activated sludge, Respiration inhibition of activated sludge, 3 Hour, Growth inhibition, > 1,000 mg/l

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), 21 d, > 1,000 mg/l

**Persistence and degradability****Polypropylene glycol, diphenylmethane diisocyanate polymer**

**Biodegradability:** Expected to degrade slowly in the environment.

**Polyol**

**Biodegradability:** For the major component(s): Biodegradation may occur under aerobic conditions (in the presence of oxygen).

**Polypropylene glycol**

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

10-day Window: Pass

**Biodegradation:** 89 %

**Exposure time:** 28 d

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

10-day Window: Not applicable

**Biodegradation:** 57 %

**Exposure time:** 64 d

**Method:** OECD Test Guideline 306 or Equivalent

**Trimethylolpropane**

**Biodegradability:** Material has inherent, ultimate biodegradability according to OECD test (s) guidelines (reaches > 60 or 70% biodegradation in OECD test(s)).

10-day Window: Fail

**Biodegradation:** 6 %

**Exposure time:** 28 d

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

10-day Window: Not applicable

**Biodegradation:** 100 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 302B or Equivalent

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

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)  
**Sensitization:** OH radicals  
**Atmospheric half-life:** 0.775 d  
**Method:** Estimated.

### Bioaccumulative potential

#### Polypropylene glycol, diphenylmethane diisocyanate polymer

**Bioaccumulation:** In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

#### Polyol

**Bioaccumulation:** No data available for this product. For the major component(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

#### Polypropylene glycol

**Bioaccumulation:** For this family of materials: No bioconcentration is expected because of the relatively high water solubility.

#### Trimethylolpropane

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

**Partition coefficient: n-octanol/water(log Pow):** -1.48 Measured

**Bioconcentration factor (BCF):** 6.3 - 16.2 Cyprinus carpio (Carp) Measured

### Mobility in soil

#### Polypropylene glycol, diphenylmethane diisocyanate polymer

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

#### Polyol

For the major component(s):

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

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.

#### Polypropylene glycol

No relevant data found.

#### Trimethylolpropane

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.

**Partition coefficient (Koc):** 1 Estimated.

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## 13. DISPOSAL CONSIDERATIONS

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**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. Waste characterizations and compliance with applicable laws are the responsibility of the waste generator. FOR UNUSED AND UNCONTAMINATED PRODUCT, always send to a licensed disposer per applicable regulations. Consult the local waste disposal expert for the



appropriate waste disposal method. Recover or recycle, if possible. Otherwise, send it to a licensed disposer.

**Contaminated packaging:** Empty containers retain product residues. Follow label warnings even after container is emptied. Improper disposal or reuse of this container may be dangerous and illegal. Refer to applicable federal, state and local regulations.

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## 14. TRANSPORT INFORMATION

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### DOT

Not regulated for transport

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

	Not regulated for transport
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

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

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## 15. REGULATORY INFORMATION

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

Respiratory or skin sensitisation  
Reproductive toxicity

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

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Pennsylvania Right To Know

The following chemicals are listed because of the additional requirements of Pennsylvania law:

**Components**

Polypropylene glycol, diphenylmethane diisocyanate polymer  
 Polyol  
 Polypropylene glycol  
 Polyglycol  
 Trimethylolpropane  
 Methylenediphenyl diisocyanate, glycerol propoxylated,  
 copolymer

**CASRN**

39420-98-9  
 Trade secret  
 25322-69-4  
 Trade secret  
 77-99-6  
 68877-65-6

**California Prop. 65**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**United States TSCA Inventory (TSCA)**

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

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**16. OTHER INFORMATION**


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**Hazard Rating System****HMIS**

Health	Flammability	Physical Hazard
2*	1	1

\* = Chronic Effects (See Hazards Identification)

**Revision**

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

**Legend**

Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	Short term exposure limit
TWA	Time weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

**Full text of other abbreviations**

AIIC - Australian Inventory of Industrial Chemicals; 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; TECI - Thailand Existing Chemicals 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.

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