



## EMSEAL Joint Systems, Ltd.

25 Bridle Lane, Westborough, MA 01581 USA

[www.emseal.com](http://www.emseal.com)

Preparation Date March 15, 2015

Revision Date March 14, 2019

# Safety Data Sheet Submerseal Foam

## 1. Identification of the Substance / Preparation

<b>Product identifier</b>	<b>Submerseal</b>
<b>Other identifier or names</b>	Submerseal System
<b>UN ID number</b>	None
<b>Manufacturer Address</b>	EMSEAL LLC 111 Royal Group Crescent Woodbury, Ontario L4H 1X9 Canada
<b>Company Phone</b>	(508) 836-0280 M-F 9am - 5pm
<b>Emergency Phone</b>	CHEMTREC (800) 424-9300 (24 Hours)

## 2. Hazardous Identification

<b>Hazardous Classification</b>	This product is not classified as hazardous when used as intended.
<b>Signal Word</b>	None
<b>Pictograms</b>	None
<b>Emergency Overview:</b>	No emergency requirements.

## 3. Composition / Information on Ingredients

**EMSEAL Submerseal is composed of polyurethane foam impregnated with a proprietary solid acrylic polymer bonded to a fully cured silicone sealant. It is classified as Non-Hazardous.**

**NOTE: Silicone facing is fully cured. The composition of the silicone in its liquid state is comprised of the following:**

<b>Chemical Name</b>	<b>CAS #</b>	<b>% by Weight</b>	<b>GHS Classification Hazard Statements</b>
Methyltrimethoxysilane	1185-55-3	3.0 - 7.0	SELF CLASSIFICATION Classification: Not Applicable
Water and other components. Each of the other components are proprietary.			SELF CLASSIFICATION Classification: Not Applicable



## 4. First Aid Measures

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- 4.1 EYES:** Flush with water for at least 15 minutes, and call physician if problems persist.
- 4.2 SKIN:** Product may leave a sticky residue, and mild irritation if prolonged exposure. Scrub with soapy water until adhesive is removed.
- 4.3 INGESTION:** Do not eat – call physician if ingested.

## 5. Fire-fighting Measures

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- 5.2 FLAMMABILITY:** Slight. Material can support an open flame or smoldering ignition. The foam can melt while burning which can contribute fire to spread.
- 5.2 FLASH POINT:** Unknown.
- 5.3 AUTO-IGNITION TEMPERATURE:** Unknown.
- 5.4 EXTINGUISHING MEDIA:** Large volumes of water, or ABC chemical may be appropriate for initial control or small volumes of impregnated foam.
- 5.5 HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon di/mon oxides will be formed as well as other noxious and toxic fumes upon combustion – do not breath combustion products.

## 6. Accidental Release Measures

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If material is unusable pick up pieces and dispose of in accordance with local regulations; material and all components are non-toxic and normal landfill will most often be acceptable.

## 7. Handling and Storage

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Store in original packaging below 35°C. There are no special handling instructions.

## 8. Exposure Controls / Personal Protection

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- 8.1 RESPIRATORY PROTECTION:** Not required
- 8.2 EYE PROTECTION:** Not required
- 8.3 SKIN PROTECTION:** Gloves of any material are suitable if desired, but not required. No other protection is required.

## 9. Physical and Chemical Properties

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- 9.1 APPEARANCE:** Dark grey / charcoal colored foam and white silicone with product identifying packaging.
- 9.2 ODOR:** Slight characteristic odor.
- 9.3 PERCENT SOLIDS BY WEIGHT:** 100%
- 9.4 PHYSICAL STATE:** Solid
- 9.5 PERCENT VOLATILE:** <1% wt/wt
- 9.6 DENSITY:** 0.4g/cm<sup>3</sup>
- 9.7 DECOMPOSITION:** > 300°C
- 9.8 SOLUBILITY IN WATER:** None



## 10. Stability and Reactivity

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Stable under normal conditions – avoid temperatures in excess of 300°C, strong acids and bases, and open flame.

## 11. Toxicological Information

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Unknown.

## 12. Ecological Information

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Unknown

## 13. Disposal Considerations

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No known hazard. Dispose of in accordance with local regulations; material and all components are non-toxic and disposal in normal landfill will most often be acceptable.

## 14. Transportation Information

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Not hazardous – safe for non-hazardous shipping.

## 15. Regulatory Information

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Unknown.

## 16. Other Information

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No other information provided.



# SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

**Product name:** DOWSIL™ 748 Non-Corrosive Sealant

**Issue Date:** 02/09/2018

**Print Date:** 03/28/2018

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.

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## 1. IDENTIFICATION

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**Product name:** DOWSIL™ 748 Non-Corrosive Sealant

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

**Identified uses:** Adhesive, binding agents

### COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY  
2030 WILLARD H DOW CENTER  
MIDLAND MI 48674-0000  
UNITED STATES

**Customer Information Number:**

800-258-2436  
SDSQuestion@dow.com

### EMERGENCY TELEPHONE NUMBER

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

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

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## 2. HAZARDS IDENTIFICATION

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### Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Skin sensitisation - Category 1

### Label elements

**Hazard pictograms**



Signal word: **WARNING!**

**Hazards**

May cause an allergic skin reaction.

**Precautionary statements****Prevention**

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Use only outdoors or in a well-ventilated area.

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

Wear protective gloves.

**Response**

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

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

Wash contaminated clothing before reuse.

**Disposal**

Dispose of contents/ 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:** Sealant

This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Methyltrimethoxysilane	1185-55-3	>= 0.8 - <= 1.4 %
Methanol	67-56-1	>= 0.2 - <= 0.35 %

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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; if effects occur, consult a physician.

**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 persists.

Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

**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.

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## **5. FIREFIGHTING MEASURES**

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

**Unsuitable extinguishing media:** None known.

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

**Hazardous combustion products:** Silicon oxides Formaldehyde Carbon oxides Metal oxides

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

**Advice for firefighters**

**Fire Fighting Procedures:** 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. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

**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. 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. 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:** Wipe up or scrape up and contain for salvage or disposal. 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, Sections 13 and 15 of this SDS provide information regarding certain local or national requirements. See sections: 7, 8, 11, 12 and 13.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Do not get on skin or clothing. Do not swallow. Avoid contact with eyes. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

**Conditions for safe storage:** Keep in properly labelled containers. 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.

## 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.

Component	Regulation	Type of listing	Value/Notation
Methyltrimethoxysilane	Dow IHG	TWA	7.5 ppm
	Dow IHG	TWA	Skin Sensitizer
Methanol	ACGIH	TWA	200 ppm
	ACGIH	STEL	250 ppm
	ACGIH	TWA	SKIN
	OSHA Z-1	TWA	260 mg/m <sup>3</sup> 200 ppm
	ACGIH	STEL	SKIN

Although some of the components of this product may have exposure guidelines, no exposure would be expected under normal handling conditions due to the physical state of the material.

The following substance(s), which have Occupational Exposure Limit(s) (OEL), may be formed during handling or processing:

Methanol.

### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
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Methanol	67-56-1	Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI
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**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. Examples of preferred glove barrier materials include: Butyl rubber. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Natural rubber ("latex"). 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:** 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, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

<b>Physical state</b>	paste
<b>Color</b>	white
<b>Odor</b>	alcohol-like
<b>Odor Threshold</b>	No data available
<b>pH</b>	Not applicable
<b>Melting point/range</b>	No data available
<b>Freezing point</b>	No data available
<b>Boiling point (760 mmHg)</b>	Not applicable



Flash point	Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	Not classified as a flammability hazard
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.34
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Dynamic Viscosity	Not applicable
Kinematic Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Molecular weight	No data available
Particle size	No data available

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.

**Conditions to avoid:** None known.

**Incompatible materials:** Oxidizing agents

**Hazardous decomposition products:** Formaldehyde. Methanol.

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## 11. TOXICOLOGICAL INFORMATION

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

### Acute toxicity

#### Acute oral toxicity

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

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

Based on information for component(s):  
LD50, > 5,000 mg/kg Estimated.

**Acute dermal toxicity**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.  
As product: The dermal LD50 has not been determined.

**Acute inhalation toxicity**

Brief exposure (minutes) is not likely to cause adverse effects. Vapor from heated material may cause respiratory irritation.  
As product: The LC50 has not been determined.

**Skin corrosion/irritation**

Brief contact is essentially nonirritating to skin.

**Serious eye damage/eye irritation**

May cause slight temporary eye irritation.

**Sensitization**

Contains component(s) which have caused allergic skin sensitization in guinea pigs.

For respiratory sensitization:  
No relevant information found.

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

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

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Based on available data for the component(s), repeated exposures are not anticipated to cause significant adverse effects.

**Carcinogenicity**

For the minor component(s): Lung fibrosis and tumors have been observed in rats exposed to titanium dioxide in two lifetime inhalation studies. Effects are believed to be due to overloading of the normal respiratory clearance mechanisms caused by the extreme study conditions. Workers exposed to titanium dioxide in the workplace have not shown an unusual incidence of chronic respiratory disease or lung cancer. Titanium dioxide was not carcinogenic in laboratory animals in lifetime feeding studies.

**Teratogenicity**

Methanol has caused birth defects in mice at doses nontoxic to the mother as well as slight behavioral effects in offspring of rats.

**Reproductive toxicity**

No specific, relevant data available for assessment.

**Mutagenicity**

Genetic toxicity studies on tested components were predominantly negative.

**Aspiration Hazard**

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

**COMPONENTS INFLUENCING TOXICOLOGY:****Methyltrimethoxysilane****Acute dermal toxicity**

LD50, Rabbit, male and female, > 9,500 mg/kg

**Acute inhalation toxicity**

LC50, Rat, male and female, 4 Hour, vapour, 51.6 mg/l

**Methanol****Acute dermal toxicity**

Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death. LD50, Rabbit, 15,800 mg/kg

**Acute inhalation toxicity**

Easily attainable vapor concentrations may cause serious adverse effects, even death. At lower concentrations: May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death. Effects may be delayed.

LC50, Rat, 4 Hour, vapour, 3 mg/l

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**12. ECOLOGICAL INFORMATION**

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

**Toxicity****Methyltrimethoxysilane****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, *Oncorhynchus mykiss* (rainbow trout), 96 Hour, > 110 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, *Daphnia magna* (Water flea), flow-through test, 48 Hour, > 122 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

ErC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, Growth rate inhibition, > 120 mg/l, OECD Test Guideline 201

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 120 mg/l, OECD Test Guideline 201

### Methanol

#### **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, Bluegill sunfish (Lepomis macrochirus), flow-through test, 96 Hour, 15,400 mg/l

#### **Acute toxicity to aquatic invertebrates**

LC50, Daphnia magna (Water flea), 48 Hour, > 10,000 mg/l

#### **Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, 22,000 mg/l, OECD Test Guideline 201 or Equivalent

#### **Toxicity to bacteria**

IC50, activated sludge, 3 Hour, Respiration rates., > 1,000 mg/l, OECD Test Guideline 209

#### **Chronic toxicity to fish**

NOEC, Oryzias latipes (Orange-red killifish), 200 Hour, 15,800 mg/l

### **Persistence and degradability**

#### Methyltrimethoxysilane

**Biodegradability:** No relevant data found.

#### Methanol

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

**Theoretical Oxygen Demand:** 1.50 mg/mg

**Chemical Oxygen Demand:** 1.49 mg/mg Dichromate

#### **Biological oxygen demand (BOD)**

Incubation Time	BOD
5 d	72 %
20 d	79 %

#### **Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitization:** OH radicals

**Atmospheric half-life:** 8 - 18 d

**Method:** Estimated.

### **Bioaccumulative potential**

#### Methyltrimethoxysilane

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

**Partition coefficient: n-octanol/water(log Pow):** -2.36

#### Methanol

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

**Partition coefficient: n-octanol/water(log Pow):** -0.77 Measured

**Bioconcentration factor (BCF):** < 10 Leuciscus idus (Golden orfe) Measured

#### **Mobility in soil**

#### Methyltrimethoxysilane

No relevant data found.

#### Methanol

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient (Koc):** 0.44 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. 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

**Treatment and disposal methods of used packaging:** Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

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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

**Transport in bulk  
according to Annex I or II  
of MARPOL 73/78 and the**

Consult IMO regulations before transporting ocean bulk

**IBC or IGC Code****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

**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.

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

Calculated RQ exceeds reasonably attainable upper limit.

<b>Components</b>	<b>CASRN</b>	<b>RQ (RCRA Code)</b>
Methanol	67-56-1	5000 lbs RQ
Methanol	67-56-1	100 lbs RQ (F003)
Methanol	67-56-1	5000 lbs RQ
Methanol	67-56-1	100 lbs RQ (F003)

**Pennsylvania Right To Know**

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

<b>Components</b>	<b>CASRN</b>
Calcium carbonate treated with stearic acid	Not available
Dimethyl siloxane, trimethoxysilyl-terminated	Not Assigned
Dimethyl Siloxane, Dimethylvinylsiloxy-terminated	68083-19-2
Titanium dioxide	13463-67-7

**California Prop. 65**

WARNING: This product can expose you to chemicals including Titanium dioxide, Quartz, which is/are known to the State of California to cause cancer, and Methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**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.

**16. OTHER INFORMATION****Hazard Rating System****NFPA**

Health	Flammability	Instability
2	1	0

**HMIS**

Health	Flammability	Physical Hazard
2/	1	0

**Revision**

Identification Number: 2307251 / A001 / Issue Date: 02/09/2018 / Version: 7.0

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)
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
SKIN	Absorbed via skin
STEL	Short-term exposure limit
TWA	Time weighted average

**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.

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.

US



# NORTHERN MANUFACTURING

25 Bridle Lane  
Westborough, MA 01581

## Safety Data Sheet

Version 7

Issue Date 29-Jun-2015

Rev Date 11-May-2018

### 1. Identification of the Substance/Preparation and of the Company/Undertaking

#### Product Identifier

**Product name** EPOXY ADHESIVE PART A

#### Other Means of Identification

**Product Code** NOMAD-PART A

**Product Technology** Epoxy A side

None

Epoxy A side. FOR INDUSTRIAL USE ONLY.

Restrictions on use: Do not use this product for any use other than intended

#### **Supplier Address**

Northern Manufacturing  
111 Royal Group Crescent  
Woodbridge, ON, Canada  
L4H 1X9

**Company Phone Number** 508-836-0280 (8AM - 5PM EST) (M-F)

**Emergency Telephone** Chemtrec 1-800-424-9300 (24 Hours)

### 2. Hazards Identification

#### Classification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS). This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1

### EMERGENCY OVERVIEW

#### **WARNING**

#### **Hazard Statements**

Causes skin irritation

Causes serious eye irritation

May cause an allergic skin reaction

**Appearance** Viscous Off white**Physical State** Paste**Odor** Mild**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves, protective clothing, eye protection, face protection  
 Avoid breathing dust, fumes, or vapors  
 Contaminated work clothing should not be allowed out of the workplace

**Precautionary Statements - Response**

Call a POISON CENTER or doctor/physician if you feel unwell  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 If eye irritation persists: Get medical advice/attention  
 IF ON SKIN: Wash with plenty of soap and water  
 Take off contaminated clothing and wash before reuse  
 If skin irritation or rash occurs: Get medical advice/attention

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local/regional/international regulations

**Hazards Not Otherwise Classified (HNOC)****Other Information**

Toxic to aquatic life with long lasting effects  
 61.69% of the mixture consists of ingredient(s) of unknown toxicity

### 3. Composition/Information on Ingredients

**Chemical Family** Epoxy A Side  
**Chemical nature** Epoxy resin mixture.

Chemical Name	CAS No	Weight-%	Trade secret
Bisphenol A diglycidyl ether resin	25068-38-6	20 - 40	*
Proprietary resin	17557-23-2	1 - 10	*

\* The exact percentage (concentration) of composition may have been withheld as a trade secret.

### 4. First Aid Measures

**FIRST AID MEASURES**

**General Advice** Use first aid treatment according to the nature of the injury. For further assistance, contact your local Poison Control Center. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice/attention.

<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
<b>Inhalation</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
<b>Ingestion</b>	Not an expected route of exposure. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
<b>Self-Protection of the First Aider</b>	First Aider: Pay attention to self-protection. Use personal protective equipment as required.

#### **Most Important Symptoms and Effects, Both Acute and Delayed**

**Symptoms** No information available.

#### **Indication of Any Immediate Medical Attention and Special Treatment Needed**

**Note to Physicians** Treat symptomatically.

### **5. Fire-Fighting Measures**

#### **Suitable Extinguishing Media**

Use CO2, dry chemical, or foam

**Unsuitable Extinguishing Media** Caution: Use of water spray when fighting fire may be inefficient.

#### **Specific Hazards Arising From the Chemical**

Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water ways. Dike for water control.

**Hazardous Combustion Products** Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See Section 10 Hazardous Decomposition Products for additional information.

#### **Explosion Data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

#### **Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### **6. Accidental Release Measures**

#### **Personal Precautions, Protective Equipment and Emergency Procedures**

**Personal Precautions** Ventilate affected area. Extremely slippery when spilled.

**Other Information** Use personal protective equipment as required.

**For Emergency Responders** Use personal protective equipment as required.

#### **Environmental Precautions**

**Environmental Precautions** See Section 12 for additional Ecological Information. Do not allow into any sewer, on the ground or into any body of water.

#### **Methods and Material for Containment and Cleaning Up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

## 7. Handling and Storage

### Precautions for Safe Handling

**Advice on Safe Handling** Handle in accordance with good industrial hygiene and safety practice.

### Conditions for Safe Storage, Including any Incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Store and handle away from heat, flames and oxidizing materials.

**Incompatible Materials** Strong oxidizing agents. Strong acids. Strong bases.

## 8. Exposure Controls/Personal Protection

### Control Parameters

**Exposure Guidelines** .

### Appropriate Engineering Controls

**Engineering Controls** Showers  
Eyewash stations  
Ventilation systems

### Individual Protection Measures, Such As Personal Protective Equipment

**Eye/Face Protection** Splash Goggles.

**Skin and Body Protection** Wear protective gloves and protective clothing.

**Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and Chemical Properties

### Information on Basic Physical and Chemical Properties

<b>Physical State</b>	Paste	<b>Odor</b>	Mild
<b>Appearance</b>	Viscous	<b>Odor Threshold</b>	No information available
<b>Color</b>	Off white		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No information available	
Melting Point/Freezing Point	No information available	
Boiling Point/Boiling Range	> 250 °C	
Flash Point	> 220 °C	
Evaporation Rate	No information available	
Flammability (Solid, Gas)	No information available	
Flammability Limits in Air		
Upper Flammability Limits	No information available	
Lower Flammability Limit	No information available	
Vapor Pressure	No information available	
Vapor Density	No information available	

<b>Specific Gravity</b>	1.68
<b>Water Solubility</b>	Negligible
<b>Solubility in Other Solvents</b>	No information available
<b>Partition Coefficient</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Decomposition Temperature</b>	No information available
<b>Kinematic Viscosity</b>	464286 cSt
<b>Dynamic Viscosity</b>	780000 cps @ 25° C
<b>Explosive Properties</b>	Not an explosive
<b>Oxidizing Properties</b>	No information available

**Other Information**

<b>Softening Point</b>	No information available
<b>Molecular Weight</b>	No information available
<b>VOC Content (%)</b>	<1g/L
<b>Density</b>	14.0 pounds/gallon
<b>Bulk Density</b>	No information available

## 10. Stability and Reactivity

**Reactivity**

No data available

**Chemical Stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

Hazardous polymerization does not occur.

**hazardous polymerization**      None under normal processing.

**Conditions to Avoid**

Keep out of reach of children. Extremes of temperature and direct sunlight. Mixture with or exposure to incompatible materials.

**Incompatible Materials**

Strong oxidizing agents. Strong acids. Strong bases.

**Hazardous Decomposition Products**

Carbon monoxide. Carbon Dioxide (CO<sub>2</sub>). Aldehydes. Aromatic hydrocarbons. May emit toxic fumes under fire conditions.

## 11. Toxicological Information

**Information on Likely Routes of Exposure**

<b>Product Information</b>	The product has not been tested
<b>Inhalation</b>	Remove to fresh air.
<b>Eye Contact</b>	Vapor may cause irritation. Avoid contact with eyes. Contact with eyes may cause irritation.
<b>Skin Contact</b>	Avoid contact with skin. May cause irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
<b>Ingestion</b>	Not an expected route of exposure. May be harmful if swallowed.

<b>Chemical Name</b>	<b>Oral LD50 (Rat)</b>	<b>Dermal LD50 ( Rabbit)</b>	<b>Inhalation LC50</b>
Bisphenol A diglycidyl ether resin 25068-38-6	= 11400 mg/kg ( Rat )	-	-
Proprietary resin	= 4500 mg/kg ( Rat )	-	-

**Information on toxicological effects**

No information available.

### **Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Skin corrosion/irritation</b>	Irritating to skin.
<b>Serious eye damage/eye irritation</b>	Irritating to eyes.
<b>Irritation</b>	Irritating to eyes and skin.
<b>Sensitization</b>	May cause sensitization of susceptible persons.
<b>Germ Cell Mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
<b>Reproductive Toxicity</b>	No information available.
<b>STOT - Single Exposure</b>	No information available.
<b>STOT - Repeated Exposure</b>	No information available.
<b>Chronic Toxicity</b>	Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons.
<b>Aspiration Hazard</b>	No information available.

### **Numerical Measures of Toxicity - Product Information**

<b>Unknown Acute Toxicity</b>	61.69% of the mixture consists of ingredient(s) of unknown toxicity
<b>The following values are calculated based on chapter 3.1 of the GHS document</b>	
<b>ATEmix (oral)</b>	9679 mg/kg

## **12. Ecological Information**

### **Ecotoxicity**

No information available

66.27998% of the mixture consists of component(s) of unknown hazards to the aquatic environment

### **Persistence and Degradability**

No information available

### **Other Adverse Effects**

No information available

## **13. Disposal Considerations**

### **Waste Treatment Methods**

<b>Disposal of Wastes</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.
<b>Contaminated Packaging</b>	Do not reuse container.

## **14. Transport Information**

**DOT** Not regulated

**ICAO (air)**

**IATA**

<b>UN/ID no</b>	UN3082
<b>Proper Shipping Name</b>	Environmentally Hazardous substance Liquid N.O.S. (Bisphenol A epoxy resin)
<b>Hazard Class</b>	9
<b>Packing group</b>	III
<b>Special Provisions</b>	A197 - Not restricted provided that the net quantity in any receptacle does not exceed 5 Kg or 5 L and the packaging meets defined standards.

**IMDG**

<b>UN/ID no</b>	UN3082
<b>Proper Shipping Name</b>	Environmentally Hazardous Substance Liquid N.O.S. (Bisphenol A epoxy resin)
<b>Hazard Class</b>	9
<b>Packing group</b>	III
<b>Special Provisions</b>	A197 - Not restricted provided that the net quantity in any receptacle does not exceed 5 Kg or 5 L and the packaging meets defined standards.
<b>Marine pollutant</b>	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

## 15. Regulatory Information

**International Inventories****TSCA**

All components of this product are either exempt or included on the TSCA Inventory in compliance with the Toxic Substances Control Act.

**Legend:**

*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*

*DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List*

**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

**US State Regulations**

The following chemicals may be contained in this product in de minimis amounts not required for listing in section 3. However, these chemicals do appear on some state Right-to-Know (RTK) and/or other hazardous substance lists. Please check your state's listings for more information.

**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Titanium dioxide - 13463-67-7	Carcinogen
Glycidyl phenyl ether - 122-60-1	Carcinogen Male Reproductive
Epichlorohydrin - 106-89-8	Carcinogen Male Reproductive
Silicon dioxide - 14808-60-7	Carcinogen

### U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations

### U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

## 16. Other Information

**HMIS**                      **Health Hazards 2**                      **Flammability 1**                      **Physical Hazards 0**                      **Personal Protection X**

Prepared by                      Compliance  
Issue Date                      29-Jun-2015  
Revision Date                      07-May-2018

### Revision note

No information available

### Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**



# NORTHERN MANUFACTURING

120 Carrier Drive  
Toronto, ON, Canada M9W 5R1  
Tel: 416-740-2090

# SAFETY DATA SHEET

Issuing Date 05-Aug-2016

Revision Date 07-May-2018

Revision Number 3

## 1. Identification of the Substance/Preparation and of the Company/Undertaking

### Product identifier

**Product Name** EPOXY ADHESIVE PART B

### Other means of identification

**Product Code(s)** NOMAD-PART B

**Product Technology** Epoxy B side

None

Curing chemical. FOR INDUSTRIAL USE ONLY.

Restrictions on use: Do not use this product for any use other than intended

### **ManufacturerAddress**

Northern Manufacturing  
111 Royal Group Crescent  
Woodbridge, ON, Canada  
L4H 1X9

**Company Phone Number** 508-836-0280 (8AM - 5PM EST) (M-F)

**Emergency Telephone** Chemtrec 1-800-424-9300 (24 Hours)

## 2. Hazards Identification

### Classification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS). This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Reproductive toxicity	Category 2

## Emergency Overview

### **DANGER**

#### **Hazard statements**

Harmful if swallowed  
Causes skin irritation  
Causes serious eye damage

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



**Appearance** Viscous Black

**Physical state** Paste

**Odor** Mild amine odor

**Precautionary Statements - Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Avoid breathing dust, fumes, or vapors  
 In case of inadequate ventilation wear respiratory protection  
 Contaminated work clothing should not be allowed out of the workplace  
 Wear protective gloves

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a POISON CENTER or doctor/physician  
 IF ON SKIN: Wash with plenty of soap and water  
 Take off contaminated clothing and wash before reuse  
 If skin irritation or rash occurs: Get medical advice/attention  
 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing  
 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician  
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
 Rinse mouth

**Precautionary Statements - Storage**

Store locked up  
 Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local/regional/international regulations

**Hazards Not Otherwise Classified (HNOC)**

**Other Information**

May be harmful in contact with skin, Very toxic to aquatic life with long lasting effects, Toxic to aquatic life  
 89.596% of the mixture consists of ingredient(s) of unknown toxicity

**3. Composition/Information on Ingredients**

**Substance**

**Chemical Family** Epoxy B Side

Chemical name	CAS No.	Weight-%	Trade secret
N-Aminoethylpiperazine	140-31-8	1 - 3	*

Bisphenol A	80-05-7	1 - 3	*
Diethylenetriamine	111-40-0	1 - 2	*
Phenol, 4-nonyl-, branched	84852-15-3	<1.0	*
4-tert-Butylphenol	98-54-4	0.1 - 0.3	*
1,2-Ethylenediamine	107-15-3	0.1 - 0.3	*

\* The exact percentage (concentration) of composition may have been withheld as a trade secret.

#### 4. First Aid Measures

##### Description of first aid measures

<b>General advice</b>	Use first aid treatment according to the nature of the injury. For further assistance, contact your local Poison Control Center. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation persists.
<b>Skin contact</b>	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If symptoms persist, call a physician. Wash contaminated clothing before reuse.
<b>Inhalation</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Administer oxygen if breathing is difficult. If symptoms persist, call a physician.
<b>Ingestion</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a physician or Poison Control Center immediately.
<b>Self-protection of the first aider</b>	First Aider: Pay attention to self-protection. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

##### Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	May cause allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
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##### Indication of any immediate medical attention and special treatment needed

<b>Note to physicians</b>	Treat symptomatically.
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#### 5. Fire-Fighting Measures

##### Suitable Extinguishing Media

Foam, Dry Chemical, Carbon Dioxide (CO<sub>2</sub>);

<b>Unsuitable extinguishing media</b>	Caution: Use of water spray when fighting fire may be inefficient.
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##### Specific hazards arising from the chemical

Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These may be highly dangerous if inhaled in confined spaces or at high concentration. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water ways. Dike for water control.

##### **Hazardous combustion products**

Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See Section 10 Hazardous Decomposition Products for additional information.

##### Explosion data

<b>Sensitivity to Mechanical Impact</b>	None.
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**Sensitivity to Static Discharge** None.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Ensure adequate ventilation, especially in confined areas.

**Other Information** Use personal protective equipment as required.

**For Emergency Responders** Use personal protective equipment as required.

**Environmental precautions**

**Environmental precautions** Do not allow into any sewer, on the ground or into any body of water. See Section 12 for additional Ecological Information.

**Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

## 7. Handling and Storage

**Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Incompatible materials** Acids; Bases; Strong oxidizing agents; Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide.

## 8. Exposure Controls/Personal Protection

**Control parameters**

**Exposure Limits** The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Diethylenetriamine 111-40-0	TWA: 1 ppm S*	(vacated) TWA: 1 ppm (vacated) TWA: 4 mg/m <sup>3</sup>	TWA: 1 ppm TWA: 4 mg/m <sup>3</sup>
1,2-Ethylenediamine 107-15-3	TWA: 10 ppm S*	TWA: 10 ppm TWA: 25 mg/m <sup>3</sup> (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m <sup>3</sup>	IDLH: 1000 ppm TWA: 10 ppm TWA: 25 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems

**Individual protection measures, such as personal protective equipment**

<b>Eye/face protection</b>	Splash Goggles. Avoid contact with eyes.
<b>Skin and body protection</b>	Wear protective gloves and protective clothing.
<b>Respiratory protection</b>	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

<b>9. Physical and Chemical Properties</b>
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**Information on basic physical and chemical properties**

<b>Physical state</b>	Paste	<b>Odor</b>	Mild amine odor
<b>Appearance</b>	Viscous	<b>Odor threshold</b>	N/A
<b>Color</b>	Black		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	N/A		
Melting point / freezing point	N/A		
Boiling point / boiling range	N/A		
Flash point	> 110 °C		
Evaporation rate	N/A		
Flammability (solid, gas)	N/A		
Flammability Limit in Air			
Upper flammability limit:	N/A		
Lower flammability limit:	N/A		
Vapor pressure	N/A		
Vapor density	N/A		
Relative density	1.96		
Water solubility	Negligible		
Solubility in other solvents	N/A		
Partition coefficient	N/A		
Autoignition temperature	N/A		
Decomposition temperature	N/A		
Kinematic viscosity	N/A cSt		
Dynamic viscosity	N/A cps @ 25° C		
Explosive properties	Not an explosive		
Oxidizing properties	N/A		

**Other Information**

<b>Softening point</b>	N/A
<b>Molecular weight</b>	N/A
<b>VOC Content (%)</b>	<1 g/L
<b>Liquid Density</b>	16.3 pounds/gallon
<b>Bulk density</b>	N/A

<b>10. Stability and Reactivity</b>
-------------------------------------

**Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

None under normal processing.

**Conditions to avoid**

Keep out of reach of children. Avoid moisture. Incompatible materials.

**Incompatible materials**

Acids; Bases; Strong oxidizing agents; Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide.

**Hazardous decomposition products**

Carbon oxides; Nitrogen oxides (NOx). Thermal decomposition can lead to release of toxic/corrosive gases and vapors. Nitric acid. Ammonia. Flammable hydrocarbon fragments.

**11. Toxicological Information**

**Information on likely routes of exposure**

<b>Product Information</b>	The product has not been tested.
<b>Inhalation</b>	Remove to fresh air.
<b>Eye contact</b>	Avoid contact with eyes. Irritating to eyes.
<b>Skin contact</b>	Avoid contact with skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
<b>Ingestion</b>	Not an expected route of exposure. Do NOT taste or swallow. Harmful if swallowed.
<b>Component Information</b>	Caution - This preparation contains a substance not yet fully tested

Chemical name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
N-Aminoethylpiperazine 140-31-8	= 2140 µL/kg ( Rat )	= 880 µL/kg ( Rabbit )	-
Bisphenol A 80-05-7	= 3300 mg/kg ( Rat )	= 3 mL/kg ( Rabbit )	> 0.17 mg/L ( Rat ) 6 h
Diethylenetriamine 111-40-0	= 1080 mg/kg ( Rat )	= 672 mg/kg ( Rabbit )	= 70 mg/L ( Rat ) 4 h
Phenol, 4-nonyl-, branched 84852-15-3	= 1300 mg/kg ( Rat )	= 2031 mg/kg ( Rabbit )	-
4-tert-Butylphenol 98-54-4	= 3250 µL/kg ( Rat )	= 2318 mg/kg ( Rabbit )	-
1,2-Ethylenediamine 107-15-3	= 637 mg/kg ( Rat )	= 560 mg/kg ( Rabbit )	-

**Information on toxicological effects**

N/A.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Skin corrosion/irritation</b>	Irritating to skin. Repeated or prolonged contact may cause skin irritation and dermatitis.
<b>Serious eye damage/eye irritation</b>	Irritating to eyes.
<b>Irritation</b>	Irritating to eyes and skin.
<b>Sensitization</b>	May cause sensitization by inhalation and skin contact.
<b>Germ cell mutagenicity</b>	Contains a known or suspected mutagen.
<b>Carcinogenicity</b>	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
<b>Reproductive toxicity</b>	Category 2: Substances which should be regarded as if they impair fertility in humans.
<b>STOT - single exposure</b>	N/A.
<b>STOT - repeated exposure</b>	N/A.
<b>Chronic Toxicity</b>	Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons. Contains a known or suspected reproductive toxin.
<b>Target organ effects</b>	May cause harm to the unborn child. May produce an allergic reaction.
<b>Aspiration hazard</b>	Eyes, Skin, Blood. N/A.

**Numerical measures of toxicity - Product Information**

**Unknown acute toxicity** 89.596% of the mixture consists of ingredient(s) of unknown toxicity  
**The following values are calculated based on chapter 3.1 of the GHS document**

<b>ATEmix (oral)</b>	1,441.00 mg/kg
<b>ATEmix (dermal)</b>	2,197.00 mg/kg
<b>ATEmix (inhalation-dust/mist)</b>	694.00 mg/l

## 12. Ecological Information

### Ecotoxicity

Very toxic to aquatic life with long lasting effects

91.108 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
N-Aminoethylpiperazine 140-31-8	495: 72 h Pseudokirchneriella subcapitata mg/L EC50	100: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 1950 - 2460: 96 h Pimephales promelas mg/L LC50 flow-through 1000: 96 h Poecilia reticulata mg/L LC50 semi-static	32: 48 h Daphnia magna mg/L EC50
Bisphenol A 80-05-7	2.5: 96 h Pseudokirchneriella subcapitata mg/L EC50	9.9: 96 h Brachydanio rerio mg/L LC50 static 4.0 - 5.5: 96 h Pimephales promelas mg/L LC50 static 4: 96 h Oncorhynchus mykiss mg/L LC50 3.6 - 5.4: 96 h Pimephales promelas mg/L LC50	9.2 - 11.4: 48 h Daphnia magna mg/L EC50 Static 3.9: 48 h Daphnia magna mg/L EC50 10.2: 48 h Daphnia magna mg/L EC50
Diethylenetriamine 111-40-0	345.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 592: 96 h Desmodesmus subspicatus mg/L EC50 1164: 72 h Pseudokirchneriella subcapitata mg/L EC50	1014: 96 h Poecilia reticulata mg/L LC50 semi-static 430: 96 h Leuciscus idus mg/L LC50 semi-static 248: 96 h Poecilia reticulata mg/L LC50 static	37: 24 h Daphnia magna mg/L EC50 16: 48 h Daphnia magna mg/L EC50
Phenol, 4-nonyl-, branched 84852-15-3	0.16 - 0.72: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.36 - 0.48: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 1.3: 72 h Desmodesmus subspicatus mg/L EC50	0.135: 96 h Pimephales promelas mg/L LC50 flow-through 0.1351: 96 h Lepomis macrochirus mg/L LC50 flow-through	0.14: 48 h Daphnia magna mg/L EC50
4-tert-Butylphenol 98-54-4	11.2: 72 h Desmodesmus subspicatus mg/L EC50	6.9: 96 h Cyprinus carpio mg/L LC50 static 4.71 - 5.62: 96 h Pimephales promelas mg/L LC50 flow-through	3.4 - 4.5: 48 h Daphnia magna mg/L EC50 Static 3.9: 48 h Daphnia magna mg/L EC50
1,2-Ethylenediamine 107-15-3	151: 96 h Pseudokirchneriella subcapitata mg/L EC50 645: 72 h Pseudokirchneriella subcapitata mg/L EC50	115.7: 96 h Pimephales promelas mg/L LC50 semi-static 191 - 254: 96 h Pimephales promelas mg/L LC50 flow-through 98.6 - 131.6: 96 h Pimephales promelas mg/L LC50 static 180 - 560: 96 h Poecilia reticulata mg/L LC50 semi-static	17: 48 h Daphnia magna mg/L EC50

### Persistence and degradability

N/A

Chemical name	Partition coefficient
N-Aminoethylpiperazine 140-31-8	-1.48
Bisphenol A 80-05-7	2.2
Diethylenetriamine 111-40-0	-1.3
4-tert-Butylphenol 98-54-4	2.44
1,2-Ethylenediamine 107-15-3	-1.221

### Other adverse effects

N/A

Ozone depletion potential (ODP) N/A

### 13. Disposal Considerations

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated packaging** Do not reuse container.

Chemical name	California Hazardous Waste Status
Diethylenetriamine 111-40-0	Toxic
1,2-Ethylenediamine 107-15-3	Toxic

### 14. Transport Information

**DOT** Not regulated

**ICAO (air)** Not regulated

**IATA** Not regulated

**IMDG** Not regulated

### 15. Regulatory Information

#### International Inventories

**TSCA** All components of this product are either exempt or included on the TSCA Inventory in compliance with the Toxic Substances Control Act.

#### Legend:

*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*

*DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*

#### US Federal Regulations

##### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Bisphenol A - 80-05-7	80-05-7	1 - 3	1.0
Phenol, 4-nonyl-, branched - 84852-15-3	84852-15-3	<1.0	1.0

#### SARA 311/312 Hazard Categories

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No



**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
1,2-Ethylenediamine 107-15-3	5000 lb			X

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
1,2-Ethylenediamine 107-15-3	5000 lb	5000 lb	RQ 5000 lb final RQ RQ 2270 kg final RQ

**US State Regulations**

The following chemicals may be contained in this product in de minimis amounts not required for listing in section 3. However, these chemicals do appear on some state Right-to-Know (RTK) and/or other hazardous substance lists. Please check your state's listings for more information.

**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
Bisphenol A - 80-05-7	Female Reproductive
ethanol - 64-17-5	Carcinogen Developmental

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
N-Aminoethylpiperazine 140-31-8	X	X	X
Bisphenol A 80-05-7	X	X	X
Diethylenetriamine 111-40-0	X	X	X
1,2-Ethylenediamine 107-15-3	X	X	X

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. Other Information**

<b>NFPA</b>	Health hazards 0	Flammability N/A	Instability N/A	Physical and chemical properties -
<b>HMIS</b>	Health hazards 2*	Flammability 1	Physical hazards 0	Personal Protection X
<i>Chronic Hazard Star Legend</i>	* = Chronic Health Hazard			

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**Revision Note**

N/A

**Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief

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at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**