1. IDENTIFICATION

Product Name: L - 301 Part A Resin
Product Description: Modified epoxy resin
Synonyms: None
Chemical Family: Modified epoxy resin
Molecular Formula: Mixture
Molecular Weight: Mixture
Intended/Recommended Use: Engineered materials

2. HAZARDS IDENTIFICATION

GHS Classification
Not Classified

LABEL ELEMENTS
Not Applicable

Hazard Statements
Not Applicable

Precautionary Statements
Not Applicable
Hazards Not Otherwise Classified (HNOC), Other Hazards
Polymerization may occur from excessive heat, contamination or exposure to direct sunlight.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance, Mixture or Article? Mixture

HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Component / CAS No.</th>
<th>%</th>
<th>GHS Classification</th>
<th>Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon dioxide, amorphous 112945-52-5</td>
<td>1 - 4</td>
<td>Not Classified</td>
<td></td>
</tr>
<tr>
<td>Bentonite 1302-78-9</td>
<td>2 - 6</td>
<td>Skin Irrit. 2 (H315)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Irrit. 2 (H319)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT SE 3 (H335)</td>
<td></td>
</tr>
<tr>
<td>Talc 14807-96-6</td>
<td>2 - 6</td>
<td>Not Classified</td>
<td></td>
</tr>
</tbody>
</table>

The specific chemical identity and/or exact percentage of composition for one or more ingredients has been withheld as a trade secret.

Additional GHS classification or other information may be included in this section but has not been adopted by OSHA. See Section 16 for full text of H phrases.

4. FIRST AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

Eye Contact:
Rinse immediately with plenty of water for at least 15 minutes.

Skin Contact:
Wash immediately with plenty of water and soap.

Ingestion:
If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Inhalation:
Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

None known

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDS

Not applicable

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Use water spray or fog, carbon dioxide or dry chemical.
Extinguishing Media to Avoid:
full water jet

Protective Equipment:
Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

Special Hazards:
Keep containers cool by spraying with water if exposed to fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Refer to Section 8 (Exposure Controls/Personal Protection) for appropriate personal protective equipment.

Methods For Cleaning Up:
Flush spill area with water. Cover spills with some inert absorbent material; sweep up and place in a waste disposal container.

References to other sections:
See Sections 8 and 13 for additional information.

7. HANDLING AND STORAGE

HANDLING
Precautions: None
Special Handling Statements: None

STORAGE
Store in accordance with local, state, and federal regulations.

Storage Temperature: Store at 25 °C 77 °F
Reason: Quality.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:
Engineering controls are not usually necessary if good hygiene practices are followed.

Respiratory Protection:
Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

Eye Protection:
Wear eye/face protection.

Skin Protection:
Avoid skin contact. Wear impermeable gloves. Since this product is absorbed through the skin, care must be taken to prevent skin contact and contamination of clothing.

Hand Protection:
Wear impermeable gloves. Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility etc) is noticed.

Additional Advice:
Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.
Exposure Limit(s)

The below constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

112945-52-5 Silicon dioxide, amorphous

OSHA (PEL): 20 mppcf
ACGIH (TLV): Not established
Other Value: Not established

1302-78-9 Bentonite

OSHA (PEL): Not established
ACGIH (TLV): 1 mg/m$^3$ respirable fraction (TWA) (as Aluminum insoluble compounds)
Other Value: Not established

14807-96-6 Talc

OSHA (PEL): if 1% Quartz or more, use Quartz limit
20 mppcf (TWA)
ACGIH (TLV): 2 mg/m$^3$ (TWA)
Other Value: Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

Color: black
Appearance: liquid resin
Odor: low
Boiling Point: Not applicable
Melting Point: Not applicable
Vapor Pressure: Not applicable
Specific Gravity/Density: 1.3
Vapor Density: Not available
Percent Volatile (% by wt.): Not applicable
pH: Not applicable
Saturation In Air (% By Vol.): Not applicable
Evaporation Rate: Not applicable
Solubility In Water: Not available
Volatile Organic Content: Not available
Flash Point: >200 °C 392 °F
Flammability (solid, gas): Not available
Flammable Limits (% By Vol.): Not applicable
Autoignition (Self) Temperature: Not available
Decomposition Temperature: Not available
Partition coefficient (n-octanol/water): Not available
Odor Threshold: Not available
Viscosity (Kinematic): Not available

DUST HAZARD INFORMATION

Particle Size (microns): Not applicable
Kst (bar-m/sec): Not applicable
Maximum Explosion Pressure (Pmax): Not applicable
Dust Class: Not applicable
Minimum Ignition Energy (MIE) (mJ): Not applicable
Minimum Ignition Temperature (MIT) (°C): Not applicable
Minimum Explosive Concentration (MEC) (g/m$^3$): Not applicable
Limiting Oxygen Concentration (LOC) (%): Not applicable
10. STABILITY AND REACTIVITY

**Stability:** Stable

**Conditions To Avoid:** Keep away from heat, spark and flame.

**Polymerization:** May occur

**Conditions To Avoid:** Protect from heat.

**Materials To Avoid:**
- Oxidizing agents
- Acids
- Amines
- Bases

**Hazardous Decomposition Products:** oxides of carbon

When heated to decomposition, it emits toxic fumes.

11. TOXICOLOGICAL INFORMATION

**PRODUCT TOXICITY INFORMATION**

**Likely Routes of Exposure:** Skin, Eyes, Respiratory System.

**ACUTE TOXICITY DATA**

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Species</th>
<th>LD50/ LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>rat</td>
<td>&gt;2000 mg/kg</td>
</tr>
<tr>
<td>dermal</td>
<td>rabbit</td>
<td>&gt;2000 mg/kg</td>
</tr>
<tr>
<td>inhalation</td>
<td>rat</td>
<td>Acute LC50 4 hr &gt;5 mg/l (Dust/Mist)</td>
</tr>
</tbody>
</table>

**LOCAL EFFECTS ON SKIN AND EYE**

- Acute Irritation skin Not irritating
- Acute Irritation eye Not irritating

**ALLERGIC SENSITIZATION**

- Sensitization skin Not sensitizing
- Sensitization respiratory No data

**GENOTOXICITY**

**Assays for Gene Mutations**
- Ames Salmonella Assay No data

**OTHER INFORMATION**

The product toxicity information above has been estimated.

**HAZARDOUS INGREDIENT TOXICITY DATA**

Silicon Dioxide has acute oral (rat) LD50 values ranging from 3160 mg/kg to >7500 mg/kg. The LC50 (rat) following a 4-hour inhalation study is >0.25 mg/L (maximum attainable concentration). Chronic and sub-chronic inhalation tests with laboratory animals produced lung damage and death after the lung clearance mechanisms were overloaded. Amorphous silica does not cause the lung diseases crystalline silica is known to cause.

Bentonite is not expected to be toxic via ingestion or dermal contact with estimated acute oral (rat) and acute dermal (rabbit) LD50 values of >2000 mg/kg, respectively. Direct contact with this material may cause moderate eye and skin irritation. Inhalation exposure may cause respiratory irritation.
No significant adverse effects were observed in epidemiology studies on talc. Acute inhalation exposure to talc is not likely to cause adverse effects. Epidemiological studies showed that repeated exposure in the workplace produced no significant adverse effects in workers. Rats repeatedly exposed by inhalation to talc at 11 mg/m³ for up to a year showed equivocal lung injury. The LC50 in the rat after a 4-hour exposure is greater than 22 mg/L.

California Proposition 65 Warning (applicable in California only) - This product contains (a) chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

### 12. ECOLOGICAL INFORMATION

**TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS**

This material is not classified as dangerous for the environment. The ecological assessment for this material is based on an evaluation of its components.

#### RESULTS OF PBT AND vPvB ASSESSMENT

Not determined

#### HAZARDOUS INGREDIENT TOXICITY DATA

<table>
<thead>
<tr>
<th>Component / CAS No.</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Toxicity to Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon dioxide, amorphous 112945-52-5</td>
<td>EC50 = 440 mg/L - Pseudokirchneriella subcapitata (72h)</td>
<td>LC50 = 5000 mg/L - Brachydanio rerio (96h) static</td>
<td>EC50 = 7600 mg/L - Ceriodaphnia dubia (48h)</td>
</tr>
<tr>
<td>Bentonite 1302-78-9</td>
<td>Not available</td>
<td>LC50 = 19000 mg/L - Oncorhynchus mykiss (96h) static</td>
<td>Not available</td>
</tr>
<tr>
<td>Talc 14807-96-6</td>
<td>Not available</td>
<td>LC50 &gt; 100 g/L - Brachydanio rerio (96h) semi-static</td>
<td>Not available</td>
</tr>
</tbody>
</table>

### 13. DISPOSAL CONSIDERATIONS
13. DISPOSAL CONSIDERATIONS
The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 3 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION
This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT
Dangerous Goods?  Not applicable/Not regulated

TRANSPORT CANADA
Dangerous Goods?  Not applicable/Not regulated

ICAO / IATA
Dangerous Goods?  Not applicable/Not regulated

IMO
Dangerous Goods?  Not applicable/Not regulated

15. REGULATORY INFORMATION
Inventory Information

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

Japan: All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese inventory.
**Korea:** All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

**Philippines:** All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

**OTHER ENVIRONMENTAL INFORMATION**

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

This product does not contain any components regulated under these sections of the EPA.

**PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA**

- Not applicable

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**16. OTHER INFORMATION**

**NFPA Hazard Rating (National Fire Protection Association)**

- **Health:** 0 - Materials that under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

- **Fire:** 1 - Materials that must be preheated before ignition can occur.

- **Instability:** 1 - Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures.

**Reasons For Issue:**

- Revised Section 3
- Revised Section 8
- Revised Section 11

**Date Prepared:** 02/19/2016

**Date of last significant revision:** 02/16/2016

**Component Hazard Phrases**

- **Bentonite**
  - H315 - Causes skin irritation.
  - H319 - Causes serious eye irritation.
  - H335 - May cause respiratory irritation.

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Prepared By: Legal & Compliance Services; E-mail: custinfo@cytec.com

This information is given without any warranty or representation. We do not assume any legal responsibility for same, nor do we give permission, inducement, or recommendation to practice any patented invention without a license. It is offered solely for your consideration, investigation, and verification. Before using any product, read its label.
1. IDENTIFICATION

Product Name: L - 301 Part B Resin

Product Description: Epoxy hardener

Synonyms: None

Chemical Family: Epoxy hardener

Molecular Formula: Mixture

Molecular Weight: Mixture

Intended/Recommended Use: Engineered materials

2. HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Inhalation) Hazard Category 3
Skin Corrosion / Irritation Hazard Category 1B
Serious Eye Damage / Eye Irritation Hazard Category 1
Skin Sensitizer Hazard Category 1A
Aquatic Environment Acute Hazard Category 2
Aquatic Environment Chronic Hazard Category 2

LABEL ELEMENTS
Signal Word
Danger

Hazard Statements
Toxic if inhaled
Causes severe skin burns and eye damage
May cause an allergic skin reaction
Toxic to aquatic life with long lasting effects

Precautionary Statements
Use only outdoors or in a well-ventilated area.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Specific treatment (see supplemental first aid instructions on this label).
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
Immediately call a POISON CENTER or doctor/physician.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/container in accordance with local and national regulations.

Hazards Not Otherwise Classified (HNOC), Other Hazards
Polymerization may occur from excessive heat, contamination or exposure to direct sunlight.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance, Mixture or Article? Mixture

HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Component / CAS No.</th>
<th>%</th>
<th>GHS Classification</th>
<th>Carcinogen</th>
</tr>
</thead>
</table>
| Polyamide          | 72 - 80 | Skin Irrit. 2 (H315)  
                        |       | Eye Dam. 1 (H318)  
                        |       | Skin Sens. 1A (H317)  
                        |       | Aquatic Acute 2 (H401)  
                        |       | Aquatic Chronic 2 (H411)  |
| Alkyl amine        | 3 - 7  | Acute Tox. 4 (H312)  
                        |       | Acute Tox. 4 (H302)  
                        |       | Skin Corr. 1B (H314)  
                        |       | Eye Dam. 1 (H318)  
                        |       | Skin Sens. 1B (H317)  
                        |       | Aquatic Acute 3 (H402)  
                        |       | Aquatic Chronic 3 (H412)  |
The specific chemical identity and/or exact percentage of composition for one or more ingredients has been withheld as a trade secret.

Additional GHS classification or other information may be included in this section but has not been adopted by OSHA. See Section 16 for full text of H phrases.

### 4. FIRST AID MEASURES

**DESCRIPTION OF FIRST AID MEASURES**

**Eye Contact:**
Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.

**Skin Contact:**
Wash immediately with plenty of water and soap. Remove contaminated clothing and shoes without delay. Obtain medical attention. Do not reuse contaminated clothing without laundering. Destroy or thoroughly clean shoes before reuse.

**Ingestion:**
If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

**Inhalation:**
Remove to fresh air. If breathing is difficult, give oxygen. Apply artificial respiration if patient is not breathing. Obtain medical attention immediately.

**MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED**

None known

**INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDS**

Not applicable

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:**
Use water spray or fog, carbon dioxide or dry chemical.

**Extinguishing Media to Avoid:**
full water jet

**Protective Equipment:**
Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).
6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Section 8 (Exposure Controls/Personal Protection), wear impermeable boots.

Methods For Cleaning Up:
Cover spills with some inert absorbent material; sweep up and place in a waste disposal container. Flush spill area with water.

References to other sections:
See Sections 8 and 13 for additional information.

7. HANDLING AND STORAGE

HANDLING
Precautions: Avoid release to the environment. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Contaminated work clothing should not be allowed out of the workplace. Do not breathe dust.

Special Handling Statements: Provide good ventilation of working area (local exhaust ventilation if necessary).

STORAGE
Store in accordance with local, state, and federal regulations.

Storage Temperature: Store at 25 °C  77 °F
Reason: Quality.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:
Utilize a closed system process where feasible. Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure when spraying or curing at elevated temperatures.

Respiratory Protection:
Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure. A full facepiece respirator also provides eye and face protection. Cutting, grinding or sanding of parts fabricated after curing may create respirable dust particles. Respiratory protection appropriate for this dust may be required. Refer to components listed above for potential hazardous components in the dust.

Eye Protection:
Prevent eye and skin contact. Provide eye wash fountain and safety shower in close proximity to points of potential exposure. Wear eye/face protection such as chemical splash proof goggles or face shield.

Skin Protection:
Prevent contamination of skin or clothing when removing protective equipment. Barrier creams may be used in conjunction with the gloves to provide additional skin protection. Wear impermeable gloves and suitable protective clothing.
Hand Protection:
Nitrile or fluorinated rubber gloves. Consider the porosity and elasticity data of the glove manufacturer and the specific conditions in the work place. Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility etc) is noticed. Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

Additional Advice:
Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

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Exposure Limit(s)
The below constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

**111-40-0 Diethylenetriamine**
- **OSHA (PEL):** Not established
- **ACGIH (TLV):** (skin) 1 ppm (TWA)
- **Other Value:** Not established

**112945-52-5 Silicon dioxide, amorphous**
- **OSHA (PEL):** 20 mppcf
- **ACGIH (TLV):** Not established
- **Other Value:** Not established

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Color:</strong></td>
<td>amber</td>
</tr>
<tr>
<td><strong>Appearance:</strong></td>
<td>solid resin</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>amine</td>
</tr>
<tr>
<td><strong>Boiling Point:</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Melting Point:</strong></td>
<td>&gt;93.33 °C (200 °F)</td>
</tr>
<tr>
<td><strong>Vapor Pressure:</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Specific Gravity/Density:</strong></td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Vapor Density:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Percent Volatile (% by wt.):</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Saturation In Air (% By Vol.):</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Evaporation Rate:</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Solubility In Water:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Volatile Organic Content:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Flash Point:</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas):</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flammable Limits (% By Vol.):</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Autoignition (Self) Temperature:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Decomposition Temperature:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water):</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Odor Threshold:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Viscosity (Kinematic):</strong></td>
<td>Not available</td>
</tr>
</tbody>
</table>

**DUST HAZARD INFORMATION**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Particle Size (microns):</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Kst (bar-m/sec):</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Maximum Explosion Pressure (Pmax):</strong></td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: Keep away from heat, spark and flame.

Polymerization: May occur

Conditions To Avoid: Protect from heat.

Materials To Avoid: Acids

Hazardous Decomposition Products:
- oxides of carbon
- Oxides of nitrogen
- nitric acid
  When heated to decomposition, it emits toxic fumes.
- ammonia
- nitrosamines

11. TOXICOLOGICAL INFORMATION

PRODUCT TOXICITY INFORMATION

Likely Routes of Exposure: Skin, Eyes, Oral.

ACUTE TOXICITY DATA

<table>
<thead>
<tr>
<th>Route</th>
<th>Species</th>
<th>Acute LD50</th>
<th>Acute LC50 4 hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>rat</td>
<td>&gt;2000 mg/kg</td>
<td>~1 mg/l (Dust/Mist)</td>
</tr>
<tr>
<td>dermal</td>
<td>rabbit</td>
<td>&gt;2000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>inhalation</td>
<td>rat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation skin Corrosive
Acute Irritation eye Causes serious damage

ALLERGIC SENSITIZATION

Sensitization skin Sensitizing
Sensitization respiratory No data

GENOTOXICITY

Assays for Gene Mutations
Ames Salmonella Assay No data

OTHER INFORMATION

The product toxicity information above has been estimated.
12. ECOLOGICAL INFORMATION

TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS

Overall Environmental Toxicity: Harmful to aquatic life with long lasting effects. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

The ecological assessment for this material is based on an evaluation of its components.
### 13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 3 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

### 14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

**US DOT**

<table>
<thead>
<tr>
<th>Dangerous Goods?</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name:</td>
<td>Corrosive solid, toxic, n.o.s.</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>8</td>
</tr>
<tr>
<td>Subsidiary Class:</td>
<td>6.1</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>II</td>
</tr>
<tr>
<td>UN/ID Number:</td>
<td>UN2923</td>
</tr>
<tr>
<td>Transport Label Required:</td>
<td>Corrosive, Toxic, Marine Pollutant</td>
</tr>
<tr>
<td>Technical Name (N.O.S.):</td>
<td>Diethylenetriamine, Polyamide</td>
</tr>
</tbody>
</table>
TRANSPORT CANADA

Dangerous Goods? X
Proper Shipping Name: Corrosive solid, toxic, n.o.s.
Hazard Class: 8
Subsidiary Class: 6.1
Packing Group: II
UN Number: UN2923
Transport Label Required: Corrosive
Toxic
Marine Pollutant

Marine Pollutant
Technical Name (N.O.S.): diethylenetriamine, Polyamide

ICAO / IATA

Dangerous Goods? X
Proper Shipping Name: Corrosive solid, toxic, n.o.s.
Hazard Class: 8
Subsidiary Class: 6.1
Packing Group: II
UN Number: UN2923
Transport Label Required: Corrosive
Toxic
Marine Pollutant

Technical Name (N.O.S.): Contains diethylenetriamine and triethylenetetramine, Polyamide, diethylenetriamine

Comments: Marine Pollutants-IATA Special Provision A197 when transported in single or combination packagings containing a net quantity per single or inner packaging of 5L or less for liquids or 5 kg for solids, are not subject to any provisions of these regulations. Note if the material also meets the criteria under additional hazard classes then all requirements continue to apply for those hazards.

IMO

Dangerous Goods? X
Proper Shipping Name: Corrosive solid, toxic, n.o.s.
Hazard Class: 8
Subsidiary Class: 6.1
UN Number: UN2923
Packing Group: II
Transport Label Required: Corrosive
Toxic
Marine Pollutant

Marine Pollutant
Technical Name (N.O.S.): Diethylenetriamine, Polyamide

Comments: Marine Pollutants -IMDG 2.10.2.7 when packaged in single or combination packagings, containing a net quantity per single or inner packaging of 5L or less for liquids or 5 kg for solids are not subject to any other provisions of this code. Note if the material also meets the criteria under additional hazard classes then all requirements continue to apply for those hazards.

15. REGULATORY INFORMATION
15. REGULATORY INFORMATION

Inventory Information

**United States (USA):** All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

**Canada:** All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

**Australia:** All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

**China:** All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

**Japan:** All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese inventory.

**Korea:** All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

**Philippines:** All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

**Taiwan:** All components of this product are included on the Taiwan Chemical Substance Inventory (TCSI) or are not required to be listed on the Taiwan inventory.

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

This product does not contain any components regulated under these sections of the EPA.

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Acute

16. OTHER INFORMATION

**NFPA Hazard Rating (National Fire Protection Association)**

**Health:** 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

**Fire:** 1 - Materials that must be preheated before ignition can occur.

**Instability:** 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

**Reasons For Issue:** Revised Section 14

**Date Prepared:** 03/19/2016

**Date of last significant revision:** 03/19/2016

**Component Hazard Phrases**

**Polyamide**
H302 - Harmful if swallowed.
H312 - Harmful in contact with skin.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H402 - Harmful to aquatic life.
H412 - Harmful to aquatic life with long lasting effects.

Alkyl amine
H302 - Harmful if swallowed.
H312 - Harmful in contact with skin.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H402 - Harmful to aquatic life.
H412 - Harmful to aquatic life with long lasting effects.

Diethylenetriamine
H302 - Harmful if swallowed.
H312 - Harmful in contact with skin.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H330 - Fatal if inhaled.
H335 - May cause respiratory irritation.