I. Product and Company Identification

Product Name:
Titan-Saturant Epoxy Resin – Part A

Supplier:
NRI
3875 Fiscal Court, Ste #100
Riviera Beach, FL 33404

Emergency Phone Number:
800-535-5053

For Product Information:
(561) 683-6992

Product Description:
Resin

Product Use:
Pipe coating repair and reinforcement.

Chemical Name or Synonym:
N/A

Molecular Formula:
N/A

II. Hazards Identification

Emergency Overview:
May cause eye irritation. Prolonged or repeated skin contact may cause irritation, may cause allergic skin reaction. Harmful if inhaled. Harmful if swallowed.

National Fire Protection Association Hazard Ratings – NFPA(R):
Health Hazard: 2
Flammability: 1
Reactivity: 1

III. Composition/ Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS#</th>
<th>%Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Chloromethyl) oxirane 4,4'- (1-Methylethyldiene) bisphenol copolymer</td>
<td>25068-38-6</td>
<td>&lt;1</td>
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</tbody>
</table>
**Safety Data Sheet**  
**Titan™-Saturant Epoxy Resin - Part A**

<table>
<thead>
<tr>
<th>Component</th>
<th>UN No.</th>
<th>CAS No.</th>
<th>PPE Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reaction product with epichlorohydrin &amp; bisphenol A</td>
<td></td>
<td>25085-99-8</td>
<td>10-15</td>
</tr>
<tr>
<td>Epoxy phenol novolac resin</td>
<td></td>
<td>28064-14-4</td>
<td>20-60</td>
</tr>
<tr>
<td>Siloxanes &amp; silicones, di-ME, reaction products with silica</td>
<td>67762-90-7</td>
<td>1-5</td>
<td></td>
</tr>
<tr>
<td>Polyoxylene sorbitan monolaurate</td>
<td></td>
<td>9005-64-5</td>
<td>0.1-1</td>
</tr>
<tr>
<td>Gamma-glycidoxypropyltrimethoxysilane</td>
<td></td>
<td>2530-83-8</td>
<td>0.1-1</td>
</tr>
<tr>
<td>Butadiene acrylic copolymer</td>
<td>Proprietary</td>
<td>5-10</td>
<td></td>
</tr>
</tbody>
</table>

**IV. First Aid Measures**

**First Aid Measures for Accidental:**

**Eye Exposure:**
In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately if irritation develops and persists. If contact with hot product occurs, immediately flush with cool water for 15 minutes. Get immediate medical attention.

**Skin Exposure:**
Remove contaminated clothing and shoes. Wipe excess product from skin. Wash affected skin with soap and plenty of water. Get prompt medical attention if irritation occurs. Do not reuse contaminated clothing until cleaned. If contact with hot product occurs, immediately flush with cool water for 15 minutes. Carefully remove clothing. If clothing is stuck to burn area, do not pull off, but cut around it. Cover burn area with clean material. Get immediate medical attention.

**Inhalation:**
If fumes or vapors are inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. Get medical attention immediately.

**Ingestion:**
Call a physician or poison control center immediately. If swallowed do not induce vomiting unless directed to do so by medical personnel. In general, no treatment is necessary unless large quantities of product have been ingested. Get medical advice.

**Most important symptoms/effects, acute and delayed:**
**Eye contact:** Eye contact may cause moderate irritation.

**Skin contact:** Skin contact may cause moderate irritation.

**Inhalation:** Product vapor or mist may possibly be harmful if inhaled.

**Ingestion:** Ingestion is unlikely. Substance may possibly be harmful if ingested.

**Chronic effects:**
Repeated overexposure may cause kidney damage and may cause reproductive effects. Prolonged or repeated exposure can cause allergic reaction.
**Over-exposure signs/symptoms**

Preexisting eye, skin and respiratory disorders may aggravated by exposure to this product. Preexisting skin or lung allergies may increase the chance of developing increased allergy symptoms from exposure.

**Notes to Physician:**
Allergic dermatitis or respiratory response in susceptible individuals may be delayed. It may appear after weeks or even months of frequent and prolonged contact.

---

**V. Fire Fighting Measures**

**Fire Hazard Data:**

**Extinguishing Media:**
Carbon Dioxide, dry chemical, or water spray.

**Special Fire Fighting Procedures:**
Use self-contained breathing apparatus and full protective gear. Water can be used to cool and protect exposed material and keep containers from rupturing.

**Special Protective Equipment for Fire-fighters:**
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Unusual Fire and Explosion Hazards:**
Keep fire-exposed containers cool with water. Do not use a solid stream of water. A solid stream of water can spread fire.

**Hazardous Thermal Decomposition Products:**
Carbon oxides and other potentially hazardous compounds may be released upon combustion.

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**VI. Accidental Release Measures**

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

**For non-emergency personnel:**
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear respirator and personal protective equipment as appropriate to prevent skin and eye contact.

**For emergency responders:**
If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

**Cleanup and Disposal of Spill:**
Clean up all traces of spill as much as possible. Shovel material into clean, dry containers. On hard surfaces use absorbent material to pickup remainder and on loose surfaces shovel-up contaminated layer.

Dispose of materials according to the applicable Federal, State, or Local regulations.

**VII. Handling and Storage**

**Conditions for safe storage including any incompatibilities:**
Do not store above the following temperature: 95°F (35°C). Keep away from open flames. Melted material may cause thermal burns. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

**Precautions for safe handling**

**Protective measures:**
Put on appropriate personal protective equipment (see Section 8). May cause irritation. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Do not ingest. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene:**
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**VIII. Exposure Controls / Personal Protection**

**Exposure Guidelines:**
The exposure limits for all the ingredients according to ACHIG, NIOSH and OSHA-PELs have not been evaluated.

**Engineering Controls:**
Explosion-proof local exhaust ventilation at point of contaminant release.

**Personal Protective Equipment**

**Respiratory Protection:**
Wear respirator (MSHA/NIOSH or approved equivalent) suitable for concentrations and type of air contaminants encountered.

**Eye / Face Protection:**
Wear appropriate safety glasses with side shields or chemical goggles as described by OSHA’s eye and face protection regulations in 29CFR 1910.133 or European Standard EN166.
Skin Protection:
Permeation resistant gloves (butyl rubber, nitrile, and polyvinyl alcohol). However, please note that polyvinyl alcohol degrades in water. Cover as much of the exposed area as possible with protective clothing. If skin creams are used, keep the area covered by the cream to a minimum.

<table>
<thead>
<tr>
<th>IX. Physical and Chemical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Appearance:</td>
</tr>
<tr>
<td>Odor:</td>
</tr>
<tr>
<td>pH:</td>
</tr>
<tr>
<td>Specific Gravity:</td>
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<tr>
<td>Viscosity:</td>
</tr>
<tr>
<td>Water Solubility:</td>
</tr>
<tr>
<td>Melting Point Range:</td>
</tr>
<tr>
<td>Flash Point:</td>
</tr>
<tr>
<td>Flammability Limits (vol/vol%):</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
</tr>
<tr>
<td>Vapor density</td>
</tr>
<tr>
<td>Percent Volatiles by Volume:</td>
</tr>
</tbody>
</table>

X. Stability and Reactivity

Chemical Stability:
Stable under standard use and storage conditions.

Conditions to Avoid:
Elevated temperatures.

Incompatible Materials / Chemicals:
Strong oxidizing agents and acids.

Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide.
Hazardous Polymerization:
Will not occur.

XI. Toxicological Information

Toxicological effects:
Acute Effects:
Oral-rat LD50: 840-2400 gm/kg for Bisphenol A Diglycidyl Ether resin >10,000 mg/kg
Dermal-rabbit LD50: 2-10 gm/kg for Bisphenol A Diglycidyl Ether resin >6,000 mg/kg

Information on the likely routes of exposure: Not Available

Potential Acute Health Effects
Acute Dermal Toxicity:
Not Determined

Acute Respiratory Irritation:
None expected under normal conditions of use.

Acute Ingestion Toxicity:
Not available

Acute Inhalation Toxicity:
Not Determined

Acute Oral Toxicity:
Not Determined

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact:
Eye contact may cause moderate irritation. Contact with hot product may cause thermal burns.

Skin contact:
Skin contact may cause slight irritation. Contact with similar products has been associated with skin sensitization. Sensitization may result in rashes and hives. Contact with hot product may cause thermal burns.

Chronic Health Effects

General: Repeated overexposure may cause kidney damage and may cause reproductive effects.

Mutagenicity (Genetic Effects):
Not Determined

Carcinogenicity: The chemicals listed in Section 2 are not considered to be carcinogenic by NTP, IARC, or OSHA
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Numerical measures of toxicity
Acute toxicity estimates: No specific data

XII. Ecological Information

Ecotoxicological Information:
Degradation: Not Determined
Accumulation: Not Determined
Fish-Toxicity: Not Determined

Chemical Fate Information:
Keep out of surface waters, sewers and waterways entering or leading to surface waters. Notify authorities if any exposure to the general public or environment occurs or is likely to occur.

XIII. Disposal Considerations

Waste Disposal Method:
Discard any product, residue, disposable container or liner in full compliance with Federal, State, and Local regulations.

Container Handling and Disposal:
Dispose of container and unused contents in accordance with Federal, State, and Local regulations.

XIV. Transportation Information

Regulatory Information:
49 CFR: Non-Regulated
IATA (Cargo): Non-Regulated
TDG: Non-Regulated
IMO/IMDG: Non-Regulated

XV. Regulatory Information

Federal Regulations:

SARA Title III Hazard Classes:
- Fire Hazard: NO
- Reactive Hazard: NO
- Release of Pressure: NO
- Acute Health Hazard: YES
- Chronic Health Hazard: YES

Other Federal Regulations:
State Regulations:
The components identified with an X are present on the respective state’s Right To Know lists:

California Prop. 65: Quartz (SiO2), Arsenic CAS, and Lead are listed.

XVI. Other Information

Key Legend Information:
N/A – Not Applicable
ND – Not Determined
OSHA – Occupational Safety and Health Administration
NIOSH – National Institute for Occupational Safety and Health

The information contained herein is based on the data available to us and is believed to be accurate. The data is offered in good faith as typical values and not as product specification. The information in this data sheet was compiled from information supplied by the vendors of the components of this compound. NRI makes no warranty either expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. The recommended industrial hygiene and safe handling procedures are believed to be genuinely applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. NRI assumes no responsibility for injury from the use of the product described herein. The information is intended only to assist in the safe handling of this material.

(R6) Revision date: 6.24.14
I. Product and Company Identification

Product Name:
Titan-Saturant Epoxy Catalyst – Part B

Supplier:
NRI
3875 Fiscal Court, Ste #100
Riviera Beach, FL 33404

Emergency Phone Number:
800-535-5053

For Product Information:
(561) 683-6992

Product Description:
Catalyst (hardener)

Product Use:
Pipe coating repair and reinforcement.

Chemical Name or Synonym:
N/A

Molecular Formula:
N/A

II. Hazards Identification

Emergency Overview:
CAUTION! May cause eye irritation. Prolonged or repeated skin contact may cause irritation, may cause allergic skin reaction. Harmful if inhaled. Harmful if swallowed.

National Fire Protection Association Hazard Ratings – NFPA(R):
Health Hazard: 3
Flammability: 1
Reactivity: 2

III. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS#</th>
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<tr>
<td>Tetraethylenepentamine</td>
<td>112-57-2</td>
<td>4-20</td>
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<tr>
<td>Methyleneoxide, polymer with benzenamine,</td>
<td>135108-88-2</td>
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Safety Data Sheet  
Titan™-Saturant Epoxy Catalyst – Part B

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<thead>
<tr>
<th></th>
<th>CAS Number</th>
<th>ECMWI Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogenated</td>
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<td></td>
</tr>
<tr>
<td>Methylenebiscyclohexanamine, 4,4’</td>
<td>1761-71-3</td>
<td>50-80</td>
</tr>
<tr>
<td>Benzylidimethylamine</td>
<td>103-83-3</td>
<td>1-10</td>
</tr>
<tr>
<td>Gamma-aminopropyltriethoxysilane</td>
<td>919-30-2</td>
<td>0.1-2</td>
</tr>
<tr>
<td>Polyoxyethylene (20) sorbitan monolaurate</td>
<td>9005-64-5</td>
<td>0.2-1</td>
</tr>
</tbody>
</table>

IV. First Aid Measures

**First Aid Measures for Accidental:**

**Eye Exposure:**
In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately if irritation develops and persists. If contact with hot product occurs, immediately flush with cool water for 15 minutes. Get immediate medical attention.

**Skin Exposure:**
Remove contaminated clothing and shoes. Wipe excess product from skin. Wash affected skin with soap and plenty of water. Get prompt medical attention if irritation occurs. Do not reuse contaminated clothing until cleaned. If contact with hot product occurs, immediately flush with cool water for 15 minutes. Carefully remove clothing. If clothing is stuck to burn area, do not pull off, but cut around it. Cover burn area with clean material. Get immediate medical attention.

**Inhalation:**
If fumes or vapors are inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. Get medical attention immediately.

**Ingestion:**
Call a physician or poison control center immediately. If swallowed do not induce vomiting unless directed to do so by medical personnel. In general, no treatment is necessary unless large quantities of product have been ingested. Get medical advice.

**Most important symptoms/effects, acute and delayed:**

**Eye contact:** Eye contact may cause moderate irritation.

**Skin contact:** Skin contact may cause moderate irritation.

**Inhalation:** Product vapor or mist may possibly be harmful if inhaled.

**Ingestion:** Ingestion is unlikely. Substance may possibly be harmful if ingested.

**Chronic effects:**
Repeated overexposure may cause kidney damage and may cause reproductive effects. Prolonged or repeated exposure can cause allergic reaction.
**Over-exposure signs/symptoms**

Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. Preexisting skin or lung allergies may increase the chance of developing increased allergy symptoms from exposure.

**Notes to Physician:**
Allergic dermatitis or respiratory response in susceptible individuals may be delayed. It may appear after weeks or even months of frequent and prolonged contact.

**V. Fire Fighting Measures**

**Fire Hazard Data:**

**Extinguishing Media:**
Carbon dioxide, dry chemical, or water spray.

**Special Fire Fighting Procedures:**
Use self-contained breathing apparatus and full protective gear. Water can be used to cool and protect exposed material and keep containers from rupturing.

**Unusual Fire and Explosion Hazards:**
Keep fire-exposed containers cool with water. Do not use a solid stream of water. A solid stream of water can spread fire.

**Hazardous Thermal Decomposition Products:**
Carbon oxides and other potentially hazardous compounds may be released upon combustion.

**VI. Accidental Release Measures**

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

**For non-emergency personnel:**
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear respirator and personal protective equipment as appropriate to prevent skin and eye contact.

**For emergency responders:**
If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

**Cleanup and Disposal of Spill:**
Clean up all traces of spill as much as possible. Shovel material into clean, dry containers. On hard surfaces use absorbent material to pickup remainder and on loose surfaces shovel-up contaminated layer.

Dispose of materials according to the applicable Federal, State, or Local regulations.
VII. Handling and Storage

Conditions for safe storage including any incompatibilities:
Do not store above the following temperature: 95°F (35°C). Keep away from open flames. Melted material may cause thermal burns. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Precautions for safe handling
Protective measures:
Put on appropriate personal protective equipment (see Section 8). May cause irritation. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Do not ingest. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene:
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

VIII. Exposure Controls / Personal Protection

Exposure Guidelines:
The exposure limits for all the ingredients according to ACHIG, NIOSH and OSHA-PELs have not been evaluated.

Engineering Controls:
Explosion-proof local exhaust ventilation at point of contaminant release.

Respiratory Protection:
Wear respirator (MSHA/NIOSH or approved equivalent) suitable for concentrations and type of air contaminants encountered.

Eye / Face Protection:
Wear appropriate safety glasses with side shields or chemical goggles as described by OSHA’s eye and face protection regulations in 29CFR 1910.133 or European Standard EN166.

Skin Protection:
Permeation resistant gloves (butyl rubber, nitrile, and polyvinyl alcohol). However, please note that polyvinyl alcohol degrades in water. Cover as much of the exposed area as possible, with protective clothing. If skin creams are used, keep the area covered by the cream to a minimum.
IX. Physical and Chemical Properties

Physical Appearance: Red liquid
Odor: Mild
pH: ~12 at 68°F (20°C) (1:1 in water)
Specific Gravity: 1.2
Viscosity: 120 cP
Water Solubility: Negligible
Flash Point: >230°F (>110°C)
Method Used: Estimated
Flammability Limits (vol/vol%): Lower: ND Upper: ND
Melting Point Range: N/A
Vapor Pressure: Not evaluated
Evaporation Rate: <1 (Butyl Acetate = 1)
Vapor Density: >1 (Air = 1)
Percent Volatiles by Volume: 0 lb/gal
VOC: 0 g/L

X. Stability and Reactivity

Chemical Stability:
Stable under standard use and storage conditions.

Conditions to Avoid:
Elevated temperatures.

Incompatible Materials / Chemicals:
Strong oxidizing agents and acids.

Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide.
Safety Data Sheet  
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Hazardous Polymerization:
Will not occur

<table>
<thead>
<tr>
<th>XI. Toxicological Information</th>
</tr>
</thead>
</table>

Information on the likely routes of exposure: Not Available

Potential Acute Health Effects

Acute Dermal Toxicity:
Not Determined

Acute Respiratory Irritation:
None expected under normal conditions of use.

Acute Ingestion Toxicity:
Not available

Acute Inhalation Toxicity:
Not Determined

Acute Oral Toxicity:
Not Determined

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact:
Eye contact may cause moderate irritation. Contact with hot product may cause thermal burns.

Skin contact:
Skin contact may cause slight irritation. Contact with similar products has been associated with skin sensitization. Sensitization may result in rashes and hives. Contact with hot product may cause thermal burns.

Chronic Health Effects

General: Repeated overexposure may cause kidney damage and may cause reproductive effects.

Mutagenicity (Genetic Effects):
Not Determined

Carcinogenicity: The chemicals listed in Section 2 are not considered to be carcinogenic by NTP, IARC, or OSHA

Numerical measures of toxicity
Acute toxicity estimates: No specific data
XII. Ecological Information

Ecotoxicological Information:
Degradation: Not Determined
Accumulation: Not Determined
Fish-Toxicity: Not Determined

Chemical Fate Information:
Keep out of surface waters, sewers and waterways entering or leading to surface waters. Notify authorities if any exposure to the general public or environment occurs or is likely to occur.

XIII. Disposal Considerations

Waste Disposal Method:
Discard any product, residue, disposable container or liner in full compliance with Federal, State, and Local regulations.

Container Handling and Disposal:
Dispose of container and unused contents in accordance with Federal, State, and Local regulations.

XIV. Transportation Information

Regulatory Information:
DOT: Non-Bulk Not Regulated
IATA: Non-Bulk Not Regulated

XV. Regulatory Information

Federal Regulations:

SARA Title III Hazard Classes:
 Fire Hazard: NO
 Reactive Hazard: NO
 Release of Pressure: NO
 Acute Health Hazard: YES
 Chronic Health Hazard: YES

Other Federal Regulations:

State Regulations:
California Prop. 65: This product does not contain any chemicals currently on the California list of known carcinogens and reproductive toxins.
XVI. Other Information

Key Legend Information:
N/A – Not Applicable
ND – Not Determined
OSHA – Occupational Safety and Health Administration
NIOSH – National Institute for Occupational Safety and Health

The information contained herein is based on the data available to us and is believed to be accurate. The data is offered in good faith as typical values and not as product specification. The information in this data sheet was compiled from information supplied by the vendors of the components of this compound. NRI makes no warranty either expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. The recommended industrial hygiene and safe handling procedures are believed to be genuinely applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. NRI assumes no responsibility for injury from the use of the product described herein. The information is intended only to assist in the safe handling of this material.

(R6) Revision date: 6.24.14