1. IDENTIFICATION

Product identifier
Product Code
S297-00WHA
Product Name
ENVIRO-GLAZE TNEMEC WHITE

Other means of identification
Common Name
SERIES 297 PART A

Recommended use of the chemical and restrictions on use
Recommended Use
industrial paint.
Uses advised against
Consumer use, For professional use only. Not for residential use.

Details of the supplier of the safety data sheet
Manufacturer Address
Tnemec Company, Inc. 6800 Corporate Drive, Kansas City, MO 64120-1372

Emergency telephone number
Company Phone Number
Tnemec Regulatory Dept: 816-474-3400
24 Hour Emergency Phone Number
800-535-5053 (Infotrac)

2. HAZARDS IDENTIFICATION

Classification
OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Label Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2B</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Category 1</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Category 1B</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Category 1B</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Category 2</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

Label elements

EMERGENCY OVERVIEW

Danger

Hazard statements
Causes eye irritation
May cause an allergic skin reaction
May cause genetic defects
May cause cancer
Suspected of damaging fertility or the unborn child
May cause respiratory irritation. May cause drowsiness or dizziness
Causes damage to organs through prolonged or repeated exposure
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
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Do not eat, drink or smoke when using this product

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
If eye irritation persists: Get medical advice/attention
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
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

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

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other information
• Causes mild skin irritation
• Harmful to aquatic life with long lasting effects

Acute Toxicity 22.67578187 % of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITANIUM DIOXIDE (TOTAL DUST)</td>
<td>13463-67-7</td>
<td>10 - 30%</td>
</tr>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER</td>
<td>111-76-2</td>
<td>1 - 10%</td>
</tr>
<tr>
<td>AMORPHOUS SILICA</td>
<td>7631-86-9</td>
<td>1 - 10%</td>
</tr>
<tr>
<td>AROMATIC PETROLEUM DISTILLATE</td>
<td>64742-95-6</td>
<td>1 - 10%</td>
</tr>
</tbody>
</table>

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

4. FIRST AID MEASURES
Description of first aid measures

General advice If symptoms persist, call a physician.
Eye contact Rinse thoroughly with plenty of water for at least 15 minutes.
Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation Remove to fresh air. Oxygen or artificial respiration if needed.
Ingestion If swallowed, do not induce vomiting. Get medical attention immediately.
Self-protection of the first aider Use personal protective equipment. Avoid contact with eyes, skin and clothing.

Most important symptoms and effects, both acute and delayed
Most important symptoms and effects Itching. Burning.

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Carbon dioxide (CO2). Dry chemical. Foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical
In the event of fire and/or explosion do not breathe fumes. Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.

Protective equipment and precautions for firefighters
Use water spray to cool unopened containers. In the event of fire, wear self-contained breathing apparatus. Keep away from heat/sparks/open flames/hot surfaces. MAY CAUSE HEAT AND PRESSURE BUILD-UP IN CLOSED CONTAINERS.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with eyes, skin and clothing. Use personal protective equipment. Remove all sources of ignition.

Environmental Precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up

Methods for containment Remove all sources of ignition. Spills may be collected with inert, absorbent material for proper disposal. Use non-sparking tools, protective gloves, goggles and clothing, adequate ventilation, avoid the breathing of vapors and use respiratory protective devices. Transfer absorbent material to suitable containers for proper disposal.

Methods for cleaning up If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

7. HANDLING AND STORAGE
Precautions for safe handling

Handling
Avoid contact with eyes, skin and clothing. Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product. When used in a mixture, read the labels and safety data sheets of all components. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage
Keep tightly closed in a dry and cool place. Keep away from heat, sparks and flame.

Incompatible products
No information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>5000 mg/m³</td>
</tr>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER 111-76-2</td>
<td>TWA: 20 ppm</td>
<td>TWA: 25 ppm</td>
<td>700 ppm</td>
</tr>
<tr>
<td>AMORPHOUS SILICA 7631-86-9</td>
<td>-</td>
<td>TWA: 6 mg/m³</td>
<td>3000 mg/m³</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering measures
Sufficient ventilation, in volume and pattern, should be provided through both local and general exhaust to keep the air contaminant concentration below current applicable OSHA Permissible Exposure Limits (PEL) and ACGIH’s Threshold Limit Values (TLV). Appropriate ventilation should be employed to remove hazardous decomposition products formed during welding or flame cutting operations of surfaces coated with this product.

Individual protection measures, such as personal protective equipment

Eye/face protection
Safety glasses with side-shields If splashes are likely to occur, wear face-shield.

Skin and body protection
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection
Use only with adequate ventilation. Do not breathe vapors, spray mist, or dust. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates vapor/mist or dust levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH/MSHA approved) during and after application. Follow respirator manufacturer’s directions for respirator use.

General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice.
Avoid breathing dust created by cutting, sanding, or grinding.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>liquid</th>
<th>Odor</th>
<th>Slight aromatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>opaque</td>
<td>Odor threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>Color</td>
<td>No information available</td>
<td>Odor threshold</td>
<td>No information available</td>
</tr>
</tbody>
</table>
### Property Values Remarks

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>100 °C / 212.0 °F</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>110 °C / 230.0 °F</td>
<td>Pensky Martens - Closed Cup</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.35456</td>
<td>g/cm³</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Insoluble in cold water</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>600 centipoises</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>11.29705 lbs/gal</td>
<td></td>
</tr>
<tr>
<td>Volatile organic compounds (VOC) content</td>
<td>1.17397 lbs/gal</td>
<td></td>
</tr>
<tr>
<td>Total volatiles weight percent</td>
<td>39.78 %</td>
<td></td>
</tr>
<tr>
<td>Total volatiles volume percent</td>
<td>54.9 %</td>
<td></td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**Reactivity**
No data available

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
None under normal processing.

**Conditions to avoid**
Heat, flames and sparks.

**Incompatible materials**
No information available

**Hazardous decomposition products**
Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. Carbon dioxide (CO2). Hydrocarbons.

### 11. TOXICOLOGICAL INFORMATION

**Information on Likely Routes of Exposure**

<table>
<thead>
<tr>
<th>Route of Exposure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Irritating to eyes.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Irritating to skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.</td>
</tr>
</tbody>
</table>
Ingestion
Harmful if swallowed.

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral (mg/kg)</th>
<th>LD50 Dermal (mg/kg)</th>
<th>LC50 Inhalation (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7</td>
<td>&gt; 10000 (Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER 111-76-2</td>
<td>470 (Rat)</td>
<td>99 (Rabbit)</td>
<td>450 ppm (Rat) 4 h</td>
</tr>
<tr>
<td>AMORPHOUS SILICA 7631-86-9</td>
<td>&gt; 5000 (Rat)</td>
<td>&gt; 2000 (Rabbit)</td>
<td>&gt; 2.2 mg/L (Rat) 1 h</td>
</tr>
<tr>
<td>AROMATIC PETROLEUM DISTILLATE 64742-95-6</td>
<td>8400 (Rat)</td>
<td>&gt; 2000 (Rabbit)</td>
<td>3400 ppm (Rat) 4 h</td>
</tr>
</tbody>
</table>

Information on toxicological effects

Symptoms
Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Skin disorders.

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

Chronic Toxicity
Contains ethylene glycol monobutyl ether which may cause blood damage based on animal data.

Sensitization
May cause sensitization of susceptible persons.

Mutagenicity
Substances which should be regarded as being mutagenic to man.

Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7</td>
<td></td>
<td>Group 2B</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER 111-76-2</td>
<td>A3</td>
<td>Group 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMORPHOUS SILICA 7631-86-9</td>
<td></td>
<td>Group 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reproductive effects
Suspected of damaging fertility or the unborn child.

STOT - single exposure
Skin, blood

STOT - repeated exposure
Causes damage to organs through prolonged or repeated exposure

Target organ effects
blood, Central nervous system, Eyes, hematopoietic system, kidney, liver, Lungs, respiratory system, Skin.

Aspiration hazard
Based on product level data, this product does not meet the requirement to be classified as an aspiration hazard. However, this product contains an ingredient that may cause aspiration if swallowed.

Acute Toxicity
22.67578187 % of the mixture consists of ingredient(s) of unknown toxicity.
The following values are calculated based on chapter 3.1 of the GHS document.

12. ECOLOGICAL INFORMATION

Ecotoxicity
29.89254 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Component</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish</th>
<th>Toxicity to daphnia</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER 111-76-2</td>
<td></td>
<td>2950: 96 Lepomis macrochirus mg/L LC50 1490: 96 Lepomis macrochirus mg/L LC50 static</td>
<td>1698 - 1940: 24 h Daphnia magna mg/L EC50 1000: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>AMORPHOUS SILICA 7631-86-9</td>
<td>440: 72 h Pseudokirchneriella subcapitata mg/L EC50</td>
<td>5000: 96 h Brachydanio rerio mg/L LC50 static</td>
<td>7600: 48 h Ceriodaphnia dubia mg/L EC50</td>
</tr>
<tr>
<td>AROMATIC PETROLEUM DISTILLATE 64742-95-6</td>
<td>9.22: 96 h Oncomelania mykiss mg/L LC50</td>
<td></td>
<td>6.14: 48 h Daphnia magna mg/L EC50</td>
</tr>
</tbody>
</table>
Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility in Environmental Media

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER</td>
<td>0.81</td>
</tr>
<tr>
<td>111-76-2</td>
<td></td>
</tr>
</tbody>
</table>

Other Adverse Effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Methods
Keep container tightly closed. If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT
Proper Shipping Name
paint, water base freezable Not regulated

IATA
Proper Shipping Name
Not regulated

IMDG/IMO
Proper Shipping Name
paint, water base freezable, Not regulated

Additional information
Call TNEMEC Traffic Department - 816-474-3400 for additional information or other modes of Transportation.

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Complies</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>Does not comply</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>Does not comply</td>
</tr>
<tr>
<td>ENCS</td>
<td>Does not comply</td>
</tr>
<tr>
<td>IECS</td>
<td>Does not comply</td>
</tr>
<tr>
<td>KECL</td>
<td>Does not comply</td>
</tr>
<tr>
<td>PICCS</td>
<td>Does not comply</td>
</tr>
<tr>
<td>AICS</td>
<td>Does not comply</td>
</tr>
</tbody>
</table>

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECS - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

Component: ETHYLENE GLYCOL MONOBUTYL ETHER

United States of America

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372:

<table>
<thead>
<tr>
<th>Component</th>
<th>SARA 313 - Threshold Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER - 111-76-2</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous

<table>
<thead>
<tr>
<th>Categorization</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

CERCLA

United States of America

California Prop. 65
WARNING! This product contains a chemical known in the State of California to cause cancer:

<table>
<thead>
<tr>
<th>Component</th>
<th>California Prop. 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITANIUM DIOXIDE (TOTAL DUST) - 13463-67-7</td>
<td>Carcinogen</td>
</tr>
</tbody>
</table>

California SCAQMD Rule 443
Contains Photochemically Reactive Solvent

State Right-to-Know

<table>
<thead>
<tr>
<th>Component</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITANIUM DIOXIDE (TOTAL DUST) - 13463-67-7</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER - 111-76-2</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>AMORPHOUS SILICA - 7631-86-9</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

NFPA

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>

HMIS (Hazardous Material Information System)

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2*</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Prepared By: Tnemec Regulatory Dept: 816-474-3400
Revision Date: 09-Dec-2014
Revision Summary: 9 4 5 8 11 14
Disclaimer
For specific information regarding occupational safety and health standards, please refer to the Code of Federal Regulations, Title 29, Part 1910.
To the best of our knowledge, the information contained herein is accurate. However, neither the Tnemec Company or any of its subsidiaries assume any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

End of MSDS
1. IDENTIFICATION

Product identifier
Product Code                  S297-0297B
Product Name                  ENVIRO-GLAZE CONVERTER

Other means of identification
Common Name                   SERIES 297 PART B

Recommended use of the chemical and restrictions on use
Recommended Use                industrial paint.
Uses advised against           Consumer use, For professional use only. Not for residential use.

Details of the supplier of the safety data sheet
Manufacturer Address           Tnemec Company, Inc. 6800 Corporate Drive, Kansas City, MO 64120-1372
Emergency telephone number
Company Phone Number           Tnemec Regulatory Dept: 816-474-3400
24 Hour Emergency Phone Number 800-535-5053 (Infotrac)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Inhalation (Vapors)</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2A</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>Category 1</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

Label elements

EMERGENCY OVERVIEW

Danger

Hazard statements
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
Precautionary Statements

Prevention
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace

Response
Get medical advice/attention 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
IF INHALED: 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

Storage
Store locked up
Keep away from children

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Other information
Acute Toxicity
35.8 % of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEXAMETHYLENE DIISOCYANATE (HDI) POLYMER</td>
<td>28182-81-2</td>
<td>60 - 100%</td>
</tr>
<tr>
<td>POLYISOCYANATE PREPOLYMER</td>
<td>-</td>
<td>30 - 60%</td>
</tr>
<tr>
<td>HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER</td>
<td>822-06-0</td>
<td>0.1 - 1%</td>
</tr>
</tbody>
</table>

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

4. FIRST AID MEASURES

Description of first aid measures

General advice
If symptoms persist, call a physician.

Eye contact
Rinse thoroughly with plenty of water for at least 15 minutes.
Skin contact
Wash affected area with soap and water. Remove contaminated clothing. Dispose of or launder accordingly. Consult a physician if skin irritation persists.

Inhalation
Remove to fresh air. Oxygen or artificial respiration if needed.

Ingestion
If swallowed, do not induce vomiting. Get medical attention immediately.

Self-protection of the first aider
Use personal protective equipment. Avoid contact with eyes, skin and clothing.

Most important symptoms and effects, both acute and delayed
Asthma-like and/or skin allergy-like symptoms.

Notes to physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
Water.

Specific hazards arising from the chemical
Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. In the event of fire and/or explosion do not breathe fumes

Protective equipment and precautions for firefighters
Use water spray to cool unopened containers. In the event of fire, wear self-contained breathing apparatus. Keep away from heat/sparks/open flames/hot surfaces. MAY CAUSE HEAT AND PRESSURE BUILD-UP IN CLOSED CONTAINERS.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with eyes, skin and clothing. Use personal protective equipment.

Environmental Precautions

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up

Methods for containment
Spills may be collected with inert, absorbent material for proper disposal. Use protective gloves, goggles and clothing, adequate ventilation, avoid the breathing of vapors and use respiratory protective devices. Transfer absorbent material to suitable container for disposal.

Methods for cleaning up
If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations. Use personal protective equipment.

7. HANDLING AND STORAGE

Precautions for safe handling
Handling

Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product. When used in a mixture, read the labels and safety data sheets of all components. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage

Close container after each use. Prevent build-up of vapors by opening all windows and doors to achieve cross ventilation.

Incompatible products


---

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER 822-06-0</td>
<td>TWA: 0.005 ppm</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering measures

Sufficient ventilation, in volume and pattern, should be provided through both local and general exhaust to keep the air contaminant concentration below current applicable OSHA Permissible Exposure Limits (PEL) and ACGIH’s Threshold Limit Values (TLV). Appropriate ventilation should be employed to remove hazardous decomposition products formed during welding or flame cutting operations of surfaces coated with this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Safety glasses with side-shields If splashes are likely to occur, wear face-shield.

Skin and body protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

INDIVIDUALS WITH LUNG OR BREATHING PROBLEMS OR PRIOR REACTION TO ISOCYANATES MUST NOT BE EXPOSED TO VAPOR OR SPRAY MIST. Do not breathe vapor or spray mist. Wear an appropriate, properly fitted respirator (NIOSH/MSHA approved) during and after application unless air monitoring demonstrates vapor/mist levels are below applicable limits. An airline respirator (TC 19C NIOSH/MSHA) is recommended. A vapor-particulate respirator (TC 23C NIOSH/MSHA) may be appropriate where air monitoring demonstrates vapors are less than ten times the applicable exposure limits and the isocyanate concentration is less than its applicable exposure limit. The use of an air-supplied respirator is mandatory whenever the airborne concentration of isocyanate monomer is unknown.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Avoid breathing dust created by cutting, sanding, or grinding.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colorless</td>
</tr>
<tr>
<td>Color</td>
<td>clear</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight Organic</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>Property</td>
<td>Values</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>No data available</td>
</tr>
</tbody>
</table>
**10. STABILITY AND REACTIVITY**

**Reactivity**
- Water reactive, Amines, Alcohols

**Chemical stability**
- Stable under recommended storage conditions.

**Possibility of hazardous reactions**
- None under normal processing.

**Conditions to avoid**
- Heat, flames and sparks.

**Incompatible materials**
- Water, Amines, Strong bases, copper, Alcohols

**Hazardous decomposition products**

**11. TOXICOLOGICAL INFORMATION**

**Information on Likely Routes of Exposure**

- **Inhalation**
  Contains isocyanate monomer. If subject to spray application, engineering and administrative controls must be instituted to maintain an exposure level below .005ppm. If these controls are not adequate, the use of an air-supplied respirator is mandatory. May cause sensitization of susceptible persons.

- **Eye contact**
  Irritating to eyes.

- **Skin contact**
  Irritating to skin. May cause sensitization of susceptible persons.

- **Ingestion**
  Harmful if swallowed.
<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEXAMETHYLENE DIISOCYANATE (HDl) POLYMER 28182-81-2</td>
<td>= 18500 mg/m³ (Rat) 1 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEXAMETHYLENE DIISOCYANATE (HDl) MONOMER 822-06-0</td>
<td>= 738 mg/kg (Rat)</td>
<td>= 593 mg/kg (Rabbit)</td>
<td>= 0.06 mg/L (Rat) 4 h</td>
</tr>
</tbody>
</table>

**Information on toxicological effects**

**Symptoms**  
Respiratory disorders. Skin disorders.

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

- **Skin corrosion/irritation**: May cause irritation.
- **Eye damage/irritation**: Irritating to eyes.
- **Chronic Toxicity**: Avoid repeated exposure. Contains isocyanates. May produce an allergic reaction.
- **Sensitization**: May cause sensitization of susceptible persons.
- **Carcinogenicity**: There are no known carcinogenic chemicals in this product.
- **Reproductive effects**: No information available.
- **STOT - single exposure**: No information available.
- **STOT - repeated exposure**: No information available.
- **Target organ effects**: Respiratory system. Skin.
- **Aspiration hazard**: Based on product level data, this product does not meet the requirement to be classified as an aspiration hazard. However, this product contains an ingredient that may cause aspiration if swallowed.

**Acute Toxicity**  
35.8 % of the mixture consists of ingredient(s) of unknown toxicity.

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

99.8 % of the mixture consists of components(s) of unknown hazards to the aquatic environment.

<table>
<thead>
<tr>
<th>Component</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish</th>
<th>Toxicity to daphnia</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEXAMETHYLENE DIISOCYANATE (HDl) MONOMER 822-06-0</td>
<td>26.1: 96 h Brachydanio rerio mg/L LC50 static</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Persistence and degradability**  
No information available.

**Bioaccumulation**  
No information available.

**Mobility in Environmental Media**  
No information available.

**Other Adverse Effects**  
No information available.

### 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

- **Disposal Methods**: Keep container tightly closed. If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

- **Contaminated packaging**: Empty containers should be taken to an approved waste handling site for recycling or disposal.
14. TRANSPORT INFORMATION

**DOT**
Proper Shipping Name: paint in oil Not regulated

**IATA**
Proper Shipping Name: Not regulated

**IMDG/IMO**
Proper Shipping Name: paint, Not regulated

Additional information: Call TNEMEC Traffic Department - 816-474-3400 for additional information or other modes of Transportation.

15. REGULATORY INFORMATION

International Inventories
- TSCA: Complies
- DSL/NDSL: Complies
- EINECS/ELINCS: Complies
- ENCS: Does not comply
- IECSC: Complies
- KECL: Complies
- PICCS: Complies
- AICS: Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

Component: HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER

United States of America

**SARA 313**
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372:

<table>
<thead>
<tr>
<th>Component</th>
<th>SARA 313 - Threshold Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER - 822-06-0</td>
<td>1.0</td>
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</tbody>
</table>

**SARA 311/312 Hazardous**

<table>
<thead>
<tr>
<th>Categorization</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**CERCLA**
<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
<th>RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER</td>
<td>100 lb</td>
<td>RQ 100 lb final RQ</td>
<td></td>
</tr>
<tr>
<td>822-06-0</td>
<td></td>
<td>RQ 45.4 kg final RQ</td>
<td></td>
</tr>
</tbody>
</table>

**United States of America**

**California Prop. 65**
None of the ingredients are listed with California Proposition 65.

**California SCAQMD Rule 443**
Does Not Contain Photochemically Reactive Solvent

**State Right-to-Know**

<table>
<thead>
<tr>
<th>Component</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>822-06-0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**16. OTHER INFORMATION**

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS (Hazardous Material Information System)</th>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2*</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Prepared By: Tnemec Regulatory Dept: 816-474-3400
Revision Date: 22-Jun-2015
Revision Summary: 9 4 5 6 7 10 8 11 14 15
Disclaimer:
For specific information regarding occupational safety and health standards, please refer to the Code of Federal Regulations, Title 29, Part 1910.
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End of MSDS