

SAFETY DATA SHEET

EPIBOND® 1544-1 A-82 US

Section 1. Identification

GHS product identifier : EPIBOND® 1544-1 A-82 US
Product code : 00068696
Other means of identification : Not available.
Product type : Liquid.
Material uses : Epoxy adhesive
Supplier's details : Huntsman Advanced Materials Americas LLC
P.O. Box 4980
The Woodlands, TX 77387

Non-Emergency phone: (800) 257-5547

e-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
AQUATIC HAZARD (ACUTE) - Category 3
AQUATIC HAZARD (LONG-TERM) - Category 2
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 3.2%
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 3.2%

GHS label elements

Hazard pictograms



Signal word

: Warning

Hazard statements

: Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
Toxic to aquatic life with long lasting effects.

Section 2. Hazards identification

Precautionary statements : Wear protective gloves: > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL). Wear eye or face protection. Avoid release to the environment. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Collect spillage. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical 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 attention. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

| Ingredient name | % | CAS number |
|--|---------|------------|
| Bisphenol A epoxy resin | 30 - 60 | 25068-38-6 |
| Bis (1,2,2,6,6,-pentamethyl- 4-piperidiny) ester of decanedioic acid | 0.1 - 1 | 41556-26-7 |
| ((1,2,2,6,6-pentamethyl), methyl-4-piperidiny) sebacate | 0.1 - 1 | 82919-37-7 |

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Flash point** : Closed cup: >180°C (>356°F) [Estimated]

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- 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.

Section 6. 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
- Methods and materials for containment and cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. 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.
- Conditions for safe storage, including any incompatibilities** :

Section 7. Handling and storage

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.

Section 8. Exposure controls/personal protection

Control parameters

- Appropriate engineering controls** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL)
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Thermal hazards** : Not available.

Section 9. Physical and chemical properties

Appearance

| | |
|---|---|
| Physical state | : Liquid. |
| Color | : Gray. |
| Odor | : Not available. |
| Odor threshold | : Not available. |
| pH | : Not available. |
| Melting point/Freezing point | : Not available. |
| Boiling/condensation point | : Not available. |
| Flash point | : Closed cup: >180°C (>356°F) [Estimated] |
| Evaporation rate | : Not available. |
| Flammability (solid, gas) | : Not available. |
| Lower and upper explosive (flammable) limits | : Not available. |
| Vapor pressure | : Not available. |
| Vapor density | : Not available. |
| Relative density | : 1.25 |
| Solubility in water | : Not available. |
| Partition coefficient: n-octanol/water | : Not available. |
| Auto-ignition temperature | : Not available. |
| Decomposition temperature | : Not available. |
| Viscosity | : Not available. |

Section 10. Stability and reactivity

| | |
|---|--|
| Reactivity | : No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | : The product is stable. |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur. |
| Conditions to avoid | : No specific data. |
| Incompatible materials | : No specific data. |
| Hazardous decomposition products | : Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

| Product/ingredient name | Test | Endpoint | Species | Result |
|--|--|----------------------|--------------------|--------------------|
| Bisphenol A epoxy resin | - | LC0 Inhalation Vapor | Rat - Male | 0.00001 ppm |
| | OECD 402 Acute Dermal Toxicity | LD50 Dermal | Rat - Male, Female | >2000 mg/kg |
| | OECD 420 Acute Oral Toxicity - Fixed Dose Method | LD50 Oral | Rat - Female | >2000 mg/kg |
| Bis (1,2,2,6,6,-pentamethyl-4-piperidinyl) ester of decanedioic acid | - | LD50 Dermal | Rabbit | >2000 mg/kg |
| | - | LD50 Oral | Rat | 2369 to 3920 mg/kg |

Irritation/Corrosion

| Product/ingredient name | Test | Species | Result |
|--|--|---------|------------------------|
| Bisphenol A epoxy resin | OECD 404 Acute Dermal Irritation/Corrosion | Rabbit | Skin - Mild irritant |
| | OECD 405 Acute Eye Irritation/Corrosion | Rabbit | Eyes - Mild irritant |
| Bis (1,2,2,6,6,-pentamethyl-4-piperidinyl) ester of decanedioic acid | - | Rabbit | Skin - Severe irritant |
| | - | Rabbit | Eyes - Mild irritant |

Conclusion/Summary

- Skin** :
- Bisphenol A epoxy resin Irritating to skin.
 - Bis (1,2,2,6,6,-pentamethyl-4-piperidinyl) ester of decanedioic acid Severely irritating to the skin.
 - ((1,2,2,6,6-pentamethyl), methyl-4-piperidinyl) sebacate No additional information.
- Eyes** :
- Bisphenol A epoxy resin Irritating to eyes.
 - Bis (1,2,2,6,6,-pentamethyl-4-piperidinyl) ester of decanedioic acid Non-irritating to the eyes.
 - ((1,2,2,6,6-pentamethyl), methyl-4-piperidinyl) sebacate No additional information.
- Respiratory** :
- Bisphenol A epoxy resin No additional information.
 - Bis (1,2,2,6,6,-pentamethyl-4-piperidinyl) ester of decanedioic acid No additional information.
 - ((1,2,2,6,6-pentamethyl), methyl-4-piperidinyl) sebacate No additional information.

Sensitization

Section 11. Toxicological information

| Product/ingredient name | Test | Route of exposure | Species | Result |
|---|------|-------------------|------------|-------------|
| Bisphenol A epoxy resin Bis (1,2,2,6,6,-pentamethyl-4-piperidiny) ester of decanedioic acid ((1,2,2,6,6-pentamethyl), methyl-4-piperidiny) sebacate | - | skin | Mouse | Sensitizing |
| | - | skin | Guinea pig | Sensitizing |
| | - | skin | Guinea pig | Sensitizing |

Mutagenicity

| Product/ingredient name | Test | Result |
|---|---|----------|
| Bisphenol A epoxy resin | Experiment: In vitro Subject: Bacteria Metabolic activation: +/- | Positive |
| | Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: +/- | Positive |
| | Experiment: In vivo Subject: Mammalian-Animal Cell: Germ | Negative |
| | Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic | Negative |
| Bis (1,2,2,6,6,-pentamethyl-4-piperidiny) ester of decanedioic acid | Experiment: In vitro Subject: Bacteria Metabolic activation: +/- | Negative |

Carcinogenicity

| Product/ingredient name | Test | Species | Dose | Exposure | Result/Result type |
|-------------------------|--|-----------------------|-----------|-----------------------------|-----------------------------|
| Bisphenol A epoxy resin | OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies | Rat - Male, Female | 15 mg/kg | 2 years; 7 days per week | Negative - Oral - NOEL |
| | OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies | Rat - Female | 1 mg/kg | 2 years; 5 days per week | Negative - Dermal - NOEL |
| | OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies | Mouse - Male | 0.1 mg/kg | 2 years; 3 days per week | Negative - Dermal - NOEL |

Reproductive toxicity

Section 11. Toxicological information

| Product/ingredient name | Test | Species | Maternal toxicity | Fertility | Developmental effects |
|-------------------------|---|--------------------|-------------------|-----------|-----------------------|
| Bisphenol A epoxy resin | OECD 416 Two-Generation Reproduction Toxicity Study | Rat - Male, Female | Negative | Negative | Negative |

Teratogenicity

| Product/ingredient name | Test | Species | Result/Result type |
|-------------------------|--|-----------------|--------------------|
| Bisphenol A epoxy resin | OECD 414 Prenatal Developmental Toxicity Study | Rat - Female | Negative - Oral |
| | EPA CFR | Rabbit - Female | Negative - Dermal |
| | OECD 414 Prenatal Developmental Toxicity Study | Rabbit - Female | Negative - Oral |

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.

Section 11. Toxicological information

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

| Product/ingredient name | Test | Endpoint | Species | Result |
|-------------------------|--|--------------------------|--------------------|-----------|
| Bisphenol A epoxy resin | OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents | Sub-chronic NOAEL Oral | Rat - Male, Female | 50 mg/kg |
| | OECD 411 Subchronic Dermal Toxicity: 90-day Study | Sub-chronic NOEL Dermal | Rat - Male, Female | 10 mg/kg |
| | OECD 411 Subchronic Dermal Toxicity: 90-day Study | Sub-chronic NOAEL Dermal | Mouse - Male | 100 mg/kg |

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Other information : Not available.

Section 12. Ecological information

Toxicity

| Product/ingredient name | Test | Endpoint | Exposure | Species | Result |
|-------------------------|---|--------------|---------------------|----------|-----------|
| Bisphenol A epoxy resin | EPA CFR | Acute EC50 | 72 hours Static | Algae | 9.4 mg/l |
| | OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test | Acute EC50 | 48 hours Static | Daphnia | 1.7 mg/l |
| | Unknown guidelines | Acute IC50 | 3 hours Static | Bacteria | >100 mg/l |
| | OECD 203 Fish, Acute Toxicity Test | Acute LC50 | 96 hours Static | Fish | 1.5 mg/l |
| | OECD 211 <i>Daphnia Magna</i> | Chronic NOEC | 21 days Semi-static | Daphnia | 0.3 mg/l |

Section 12. Ecological information

| | | | | | | | |
|---|--|-------|------|----------|----------|-----------|------|
| Bis (1,2,2,6,6,-pentamethyl-4-piperidiny) ester of decanedioic acid | Reproduction Test OECD 209 Activated Sludge, Respiration Inhibition Test | Acute | EC50 | 3 hours | Bacteria | >100 | mg/l |
| | OECD 202 <i>Daphnia</i> sp. Acute | Acute | EC50 | 24 hours | Daphnia | 20 | mg/l |
| | Immobilisation Test OECD 203 Fish, Acute Toxicity Test | Acute | LC50 | 96 hours | Fish | 0.97 to 1 | mg/l |

Persistence and degradability

| Product/ingredient name | Test | Period | Result |
|---|--|---------|--------|
| Bisphenol A epoxy resin | OECD Derived from OECD 301F (Biodegradation Test) | 28 days | 5 % |
| Bis (1,2,2,6,6,-pentamethyl-4-piperidiny) ester of decanedioic acid | OECD 301E Ready Biodegradability - Modified OECD Screening Test | 28 days | 38 % |

Conclusion/Summary : Bisphenol A epoxy resin Not readily biodegradable.

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|---|--|------------|------------------|
| Bisphenol A epoxy resin | Fresh water 4.83 days Fresh water 3.58 days Fresh water 7.1 days | - | Not readily |
| Bis (1,2,2,6,6,-pentamethyl-4-piperidiny) ester of decanedioic acid | Fresh water >182 days | - | Not readily |
| ((1,2,2,6,6-pentamethyl), methyl-4-piperidiny) sebacate | Fresh water >182 days | - | - |

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|---|--------------------|-------|-----------|
| Bisphenol A epoxy resin | 3.242 | 31 | low |
| Bis (1,2,2,6,6,-pentamethyl-4-piperidiny) ester of decanedioic acid | 0.37 | 75.39 | low |
| ((1,2,2,6,6-pentamethyl), methyl-4-piperidiny) sebacate | - | 75.39 | low |

Mobility in soil

Not available.

Other adverse effects : No known significant effects or critical hazards.

Other ecological information

BOD5 : Not determined.
COD : Not determined.
TOC : Not determined.

Section 13. Disposal considerations

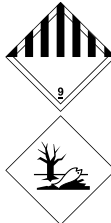
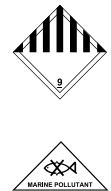
Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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





Section 14. Transport information

Proper shipping name

DOT : Environmentally hazardous substance, liquid, n.o.s. (Bisphenol a epoxy resin). Marine pollutant
TDG : Environmentally hazardous substance, liquid, n.o.s. (Bisphenol a epoxy resin). Marine pollutant
IMDG : Environmentally hazardous substance, liquid, n.o.s. (Bisphenol a epoxy resin). Marine pollutant
IATA : Environmentally hazardous substance, liquid, n.o.s. (Bisphenol a epoxy resin)

| Regulatory information | UN number | Classes | PG* | Label | Additional information |
|---------------------------|-----------|---------|-----|--|---|
| DOT Classification | UN3082 | 9 | III |  | Non-bulk packages of this product are not regulated as hazardous materials unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg. |
| TDG Classification | UN3082 | 9 | III |  | The product is not regulated as a dangerous good when transported by road or rail. |
| | | | | | |

Section 14. Transport information

| | | | | | |
|----------------------------|--------|---|-----|--|---|
| IMDG Classification | UN3082 | 9 | III |   | <p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p>Emergency schedules (EmS) F-A S-F</p> |
| IATA Classification | UN3082 | 9 | III |   | <p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p>Passenger and Cargo Aircraft Quantity limitation: 450 L Packaging instructions: 964 Cargo Aircraft Only Quantity limitation: 450 L Packaging instructions: 964</p> |

PG* : Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

- TSCA 8(b) inventory** : All components are listed or exempted.
- TSCA 5(a)2 final significant new use rule (SNUR)** : No ingredients listed.
- TSCA 5(e) substance consent order** : No ingredients listed.
- TSCA 12(b) export notification** : No ingredients listed.
- SARA 311/312** : Immediate (acute) health hazard
- Clean Air Act - Ozone Depleting Substances (ODS)** : This product does not contain nor is it manufactured with ozone depleting substances.
- SARA 313** : No ingredients listed.
- CERCLA Hazardous substances** : No ingredients listed.

Section 15. Regulatory information

State regulations

PENNSYLVANIA - RTK : No ingredients listed.

California Prop 65 : This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canadian regulations

CEPA DSL : All components are listed or exempted.

WHMIS Classes : Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Brazil Regulations

Classification system used : Norma ABNT-NBR 14725-2:2012

International lists

Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: At least one component is not listed.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): At least one component is not listed.
Philippines inventory (PICCS): Not determined.
Taiwan inventory (CSNN): Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.) :

| | |
|----------------------------|---|
| Health | 2 |
| Flammability | 1 |
| Physical hazards | 0 |
| Personal protection | |

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.) :



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Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Further information :
Date of printing : 3/27/2015.
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Date of previous issue : No previous validation.
Version : 1

✔ Indicates information that has changed from previously issued version.

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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SAFETY DATA SHEET

EPIBOND® 1544 D US

Section 1. Identification

GHS product identifier : EPIBOND® 1544 D US
Product code : 00054975
Other means of identification : Not available.
Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Hardener for adhesive systems

Supplier's details : Huntsman Advanced Materials Americas LLC
P.O. Box 4980
The Woodlands, TX 77387
Non-Emergency phone: (800) 257-5547

e-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : ACUTE TOXICITY: INHALATION - Category 3
SKIN CORROSION/IRRITATION - Category 1B
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] - Category 3

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : Toxic if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.

Section 2. Hazards identification

Precautionary statements : Wear protective gloves: > 8 hours (breakthrough time): Ethyl Vinyl Alcohol Laminate (EVAL), butyl rubber. Wear eye or face protection. Wear protective clothing. Use only outdoors or in a well-ventilated area. Avoid breathing dust. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

| Ingredient name | % | CAS number |
|--------------------|---------|------------|
| Diethylenetriamine | 30 - 60 | 111-40-0 |

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Toxic if inhaled. May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes severe burns. May cause an allergic skin reaction.
- Ingestion** : May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Flash point : Closed cup: >100°C (>212°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

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.

Section 6. 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 appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.
- Conditions for safe storage, including any incompatibilities** : 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. Store locked up. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|--------------------|--|
| Diethylenetriamine | ACGIH TLV (United States, 3/2012). Absorbed through skin. TWA: 4.2 mg/m ³ 8 hours. TWA: 1 ppm 8 hours. |

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eyeface protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): Ethyl Vinyl Alcohol Laminate (EVAL), butyl rubber
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Thermal hazards** : Not available.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Solid. [Paste.]
- Color** :
- Odor** : Amine-like.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point/Freezing point** : Not available.
- Boiling/condensation point** : >200°C (>392°F)
- Flash point** : Closed cup: >100°C (>212°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : <0.05 kPa (<0.375 mm Hg) [room temperature]
- Vapor density** : Not available.
- Relative density** : Not available.
- Solubility in water** : partially soluble
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : >200°C (>392°F)
- Density** : 1 g/cm³ [25°C (77°F)]
- Viscosity** : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Test | Endpoint | Species | Result |
|-------------------------|------------------------------------|---------------------------------|--------------------|------------|
| Diethylenetriamine | OECD 403 Acute Inhalation Toxicity | LC50 Inhalation Dusts and mists | Rat - Male, Female | 0.185 mg/l |
| | No official guidelines | LD50 Dermal | Rabbit | 1045 mg/kg |
| | No official guidelines | LD50 Oral | Rat - Male | 1620 mg/kg |

Irritation/Corrosion

| Product/ingredient name | Test | Species | Result |
|-------------------------|------------------------|---------|------------------|
| Diethylenetriamine | No official guidelines | Rabbit | Skin - Corrosive |
| | No official guidelines | Rabbit | Eyes - Corrosive |

Conclusion/Summary

- Skin** : Diethylenetriamine Corrosive to the skin.
- Eyes** : Diethylenetriamine Corrosive to eyes.
- Respiratory** : Diethylenetriamine No additional information.

Sensitization

| Product/ingredient name | Test | Route of exposure | Species | Result |
|-------------------------|---|-------------------|------------|-----------------|
| Diethylenetriamine | OECD 406 Skin Sensitization No official guidelines | skin | Guinea pig | Sensitizing |
| | | Respiratory | Mouse | Not sensitizing |

Mutagenicity

Section 11. Toxicological information

| Product/ingredient name | Test | Result |
|-------------------------|---|----------|
| Diethylenetriamine | Experiment: In vivo Subject: Insect | Negative |
| | Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic | Negative |

Conclusion/Summary :
Diethylenetriamine No mutagenic effect.

Carcinogenicity

| Product/ingredient name | Test | Species | Dose | Exposure | Result/Result type |
|-------------------------|------------------------|--------------|------------|-----------------|--------------------------|
| Diethylenetriamine | No official guidelines | Mouse - Male | 56.3 mg/kg | 3 days per week | Negative - Dermal - NOEL |

Reproductive toxicity

| Product/ingredient name | Test | Species | Maternal toxicity | Fertility | Developmental effects |
|-------------------------|--|-----------------------|-------------------|-----------|-----------------------|
| Diethylenetriamine | OECD 421 Reproduction/ Developmental Toxicity Screening Test | Rat - Male, Female | Positive | Positive | Negative |

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|------------------------------|
| Diethylenetriamine | Category 3 | Not applicable. | Respiratory tract irritation |

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact :** Causes serious eye damage.
- Inhalation :** Toxic if inhaled. May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact :** Causes severe burns. May cause an allergic skin reaction.
- Ingestion :** May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

| Product/ingredient name | Test | Endpoint | Species | Result |
|-------------------------|------------------------|------------------------------------|-----------------------|-----------------------|
| Diethylenetriamine | OECD | Sub-chronic NOEL Oral | Rat - Male, Female | 70 to 80 mg/kg/d |
| | No official guidelines | Chronic NOAEL Dermal | Rat - Male, Female | 114 mg/kg/d |
| | No official guidelines | Sub-acute NOEC Inhalation Vapor | Rat - Male, Female | 550 mg/m ³ |

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

| Route | ATE value |
|------------------------------|--------------|
| Oral | 4836.7 mg/kg |
| Dermal | 3119.9 mg/kg |
| Inhalation (dusts and mists) | 0.5523 mg/l |

Section 11. Toxicological information

Other information : Not available.

Section 12. Ecological information

Toxicity

| Product/ingredient name | Test | Endpoint | Exposure | Species | Result |
|-------------------------|--|-----------------------|-------------------------|----------|-----------|
| Diethylenetriamine | No official guidelines | Acute EC50 | 48 hours Static | Daphnia | 32 mg/l |
| | OECD 201 Alga, Growth Inhibition Test | Acute EbC50 (biomass) | 72 hours Static | Algae | 1164 mg/l |
| | EU EC C.1 Acute Toxicity for Fish | Acute LC50 | 96 hours Semi-static | Fish | 430 mg/l |
| | OECD 201 Alga, Growth Inhibition Test | Chronic NOEC | 72 hours Static | Algae | 10 mg/l |
| | No official guidelines | Chronic NOEC | 3 hours Static | Bacteria | 6 mg/l |
| | EU | Chronic NOEC | 21 days Semi-static | Daphnia | 5.6 mg/l |
| | OECD OECD 210 - Fish, Early-Life Stage Toxicity Test | Chronic NOEC | 28 days Semi-static | Fish | 10 mg/l |

Persistence and degradability

| Product/ingredient name | Test | Period | Result |
|-------------------------|---|---------|--------|
| Diethylenetriamine | OECD 301D Ready Biodegradability - Closed Bottle Test | 21 days | 87 % |

Conclusion/Summary : Diethylenetriamine Siloxanes and Silicones, di-Me, reaction products with silica

Readily biodegradable
Eliminated by adsorption onto effluent treatment sludge.

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------------|------------------|
| Diethylenetriamine | - | 50%; 0.11 day(s) | Readily |

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------|--------------------|------------|-----------|
| Diethylenetriamine | -1.58 | 0.3 to 6.3 | low |

Mobility in soil

Not available.

Other adverse effects : No known significant effects or critical hazards.

Other ecological information

BOD₅ : Not determined.
COD : Not determined.
TOC : Not determined.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

Section 14. Transport information

Proper shipping name

DOT : AMINES, SOLID, CORROSIVE, N.O.S. (DIETHYLENE TRIAMINE)
 TDG : AMINES, SOLID, CORROSIVE, N.O.S. (DIETHYLENE TRIAMINE)
 IMDG : AMINES, SOLID, CORROSIVE, N.O.S. (DIETHYLENE TRIAMINE)
 IATA : AMINES, SOLID, CORROSIVE, N.O.S. (DIETHYLENE TRIAMINE)

| Regulatory information | UN number | Classes | PG* | Label | Additional information |
|------------------------|-----------|---------|-----|-------|---|
| DOT Classification | UN3259 | 8 | II | | - |
| TDG Classification | UN3259 | 8 | II | | - |
| IMDG Classification | UN3259 | 8 | II | | Emergency schedules (EmS) F-A, S-B |
| IATA Classification | UN3259 | 8 | II | | Passenger and Cargo Aircraft Quantity limitation: 15 kg Packaging instructions: 859 Cargo Aircraft Only Quantity limitation: 50 kg Packaging instructions: 863 |

Section 14. Transport information

PG* : Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

- TSCA 8(b) inventory : All components are listed or exempted.
- TSCA 5(a)2 final significant new use rule (SNUR) : No ingredients listed.
- TSCA 5(e) substance consent order : No ingredients listed.
- TSCA 12(b) export notification : No ingredients listed.
- SARA 311/312 : Immediate (acute) health hazard
- Clean Air Act - Ozone Depleting Substances (ODS) : This product does not contain nor is it manufactured with ozone depleting substances.
- SARA 313 : No ingredients listed.
- CERCLA Hazardous substances : No ingredients listed.

State regulations

- PENNSYLVANIA - RTK : Diethylenetriamine
- California Prop 65 : This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canadian regulations

- CEPA DSL : At least one component is not listed.
- WHMIS Classes : Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class D-2B: Material causing other toxic effects (Toxic).
Class E: Corrosive material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Brazil Regulations

- Classification system used : Norma ABNT-NBR 14725-2:2012

Section 15. Regulatory information

International lists :

- Australia inventory (AICS):** At least one component is not listed.
- China inventory (IECSC):** All components are listed or exempted.
- Japan inventory:** Not determined.
- Korea inventory:** At least one component is not listed.
- Malaysia Inventory (EHS Register):** Not determined.
- New Zealand Inventory of Chemicals (NZIoC):** At least one component is not listed.
- Philippines inventory (PICCS):** At least one component is not listed.
- Taiwan inventory (CSNN):** Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.) :

| | |
|---------------------|---|
| Health | 3 |
| Flammability | 1 |
| Physical hazards | 1 |
| Personal protection | |

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.) :



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Date of previous issue : No previous validation.
Version : 1

☑ Indicates information that has changed from previously issued version.

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