1 Identification

· Product name: EpoxySet Resin - Part A
· Part number:
  145-20000
  145-20005, -20015
· Application of the substance / the mixture Epoxy resin
· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier:
    Allied High Tech Products Inc.
    2376 East Pacifica Place
    USA-RANCHO DOMINGUEZ, CA 90220
    USA
    info@alliehightech.com
· Information department: Product safety department
· Emergency telephone number:
  During normal opening times: +1 (310) 635-2466
  Chemtrec: +1 (202) 483-7616

2 Hazard(s) identification

· Classification of the substance or mixture
  GHS08 Health hazard
  Muta. 2 H341 Suspected of causing genetic defects.
  Carc. 2 H351 Suspected of causing cancer.

  GHS09 Environment
  Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

  GHS07
  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2A H319 Causes serious eye irritation.
  Skin Sens. 1 H317 May cause an allergic skin reaction.
  STOT SE 3 H335 May cause respiratory irritation.

(Contd. on page 2)
Flam. Liq. 4 H227 Combustible liquid.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**

![GHS07](image1) ![GHS08](image2) ![GHS09](image3)

- **Signal word** Warning

- **Hazard-determining components of labeling:**
  reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \( \leq 700 \))
  butyl glycidyl ether

- **Hazard statements**
  Combustible liquid.
  Causes skin irritation.
  Causes serious eye irritation.
  May cause an allergic skin reaction.
  Suspected of causing genetic defects.
  Suspected of causing cancer.
  May cause respiratory irritation.
  Toxic to aquatic life with long lasting effects.

- **Precautionary statements**
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Keep away from flames and hot surfaces. – No smoking.
  Avoid breathing dust/fume/gas/mist/vapors/spray
  Wash thoroughly after handling.
  Use only outdoors or in a well-ventilated area.
  Contaminated work clothing must not be allowed out of the workplace.
  Avoid release to the environment.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If on skin: Wash with plenty of water.
  If INHALED: Remove person to fresh air and keep comfortable for breathing.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
  Continue rinsing.
  If exposed or concerned: Get medical advice/attention.
  Call a poison center/doctor if you feel unwell.
  Specific treatment (see on this label).
  Take off contaminated clothing and wash it before reuse.
  If skin irritation or rash occurs: Get medical advice/attention.
  If eye irritation persists: Get medical advice/attention.
  Wash contaminated clothing before reuse.
  In case of fire: Use for extinction: CO2, powder or water spray.
  Collect spillage.
  Store in a well-ventilated place. Keep container tightly closed.
  Store in a well-ventilated place. Keep cool.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.
3 Composition/Information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>25068-38-6</td>
<td>reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)</td>
<td>50-100%</td>
</tr>
<tr>
<td></td>
<td>Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317</td>
<td></td>
</tr>
<tr>
<td>2426-08-6</td>
<td>butyl glycidyl ether</td>
<td>10-25%</td>
</tr>
<tr>
<td></td>
<td>Flam. Liq. 3, H226; Mut. 2, H341; Carc. 2, H351; Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335; Aquatic Chronic 3, H412</td>
<td></td>
</tr>
</tbody>
</table>

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**
  Supply fresh air and to be sure call for a doctor.
  In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
  - **Most important symptoms and effects, both acute and delayed:** Coughing
  - **Indication of any immediate medical attention and special treatment needed**
    No further relevant information available.

(Contd. on page 4)
5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
- Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions:
  Do not allow product to reach sewage system or any water course.
  Do not allow to enter sewers/surface or ground water.
  Prevent seepage into sewage system, workpits and cellars.
  Inform respective authorities in case of seepage into water course or sewage system.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

  PAC-1:
  25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) 90 mg/m³
  2426-08-6 butyl glycidyl ether 9 ppm

  PAC-2:
  25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) 990 mg/m³
  2426-08-6 butyl glycidyl ether 580 ppm

  PAC-3:
  25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) 5,900 mg/m³
  2426-08-6 butyl glycidyl ether 3,500 ppm

7 Handling and storage

- Handling:
- Precautions for safe handling
  Open and handle receptacle with care.
  Prevent formation of aerosols.
- Information about protection against explosions and fires:
  Keep ignition sources away - Do not smoke.
  Keep respiratory protective device available.
Conditions for safe storage, including any incompatibilities

Storage:
- Requirements to be met by storerooms and receptacles:
  - Protect from sunlight.
- Store in a dry place. Store in a closed container.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions:
  - Keep receptacle tightly sealed.
  - Store receptacle in a well ventilated area.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
  - Components with limit values that require monitoring at the workplace:
    - The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
    - At this time, the remaining constituent has no known exposure limits.

<table>
<thead>
<tr>
<th>2426-08-6 butyl glycidyl ether</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL</td>
</tr>
<tr>
<td>REL</td>
</tr>
<tr>
<td>*15-min</td>
</tr>
<tr>
<td>TLV</td>
</tr>
<tr>
<td>Skin; DSEN</td>
</tr>
</tbody>
</table>

- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
  - Personal protective equipment:
  - General protective and hygienic measures:
    - Keep away from foodstuffs, beverages and feed.
    - Immediately remove all soiled and contaminated clothing.
    - Wash hands before breaks and at the end of work.
    - Store protective clothing separately.
    - Avoid contact with the eyes and skin.
  - Breathing equipment: Use suitable respiratory protective device when high concentrations are present.

- Protection of hands:
  - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

   Protective gloves

   The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

   Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

   Material of gloves

   The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
## 9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Information</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Appearance:</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Light yellow</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>Characteristic</td>
</tr>
<tr>
<td><strong>Odor threshold:</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>pH-value:</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range:</td>
<td>Undetermined</td>
</tr>
<tr>
<td>Boiling point/Boiling range:</td>
<td>Undetermined</td>
</tr>
<tr>
<td><strong>Flash point:</strong></td>
<td>73 °C (163.4 °F) (Pensky-Martens Closed Cup)</td>
</tr>
<tr>
<td><strong>Flammability (solid, gaseous):</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Decomposition temperature:</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Auto igniting:</strong></td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td><strong>Danger of explosion:</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Explosion limits:</strong></td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Vapor pressure at 25 °C (77 °F):</strong></td>
<td>400 hPa (300 mm Hg)</td>
</tr>
<tr>
<td><strong>Density:</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>4.5 (Air = 1)</td>
</tr>
<tr>
<td><strong>Specific gravity:</strong></td>
<td>1.13</td>
</tr>
<tr>
<td><strong>Evaporation rate:</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with Water:</strong></td>
<td>Not miscible or difficult to mix.</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water):</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Viscosity:</strong></td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not determined</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Solvent content:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>VOC content:</strong></td>
<td>0.00 %</td>
</tr>
<tr>
<td><strong>VOC content:</strong></td>
<td>0.0 g/l / 0.00 lb/gl</td>
</tr>
</tbody>
</table>
10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: Reacts with considerable heat release with some curing agents.
- Conditions to avoid
  Do not mix with alkalis.
  Keep away from oxidising agents and acidic substances.
  Keep away from heat.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: Carbon monoxide and carbon dioxide

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values that are relevant for classification:
    | Reaction Product                  | Oral LD50 | Dermal LD50 |
    |----------------------------------|-----------|-------------|
    | 25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) | 30,000 mg/kg (rat) | 23,000 mg/kg (rabbit) |
    | 2426-08-6 butyl glycidyl ether | Oral LD50 2,050 mg/kg (rat) | Dermal LD50 2,520 mg/kg (rabbit) |
    |                                  | Inhalative LC50/4 h 11 mg/l (ATE) |
- Primary chemical irritant effect:
  - on the skin: Irritant to skin and mucous membranes.
  - on the eye: Irritating effect.
  - Sensitization: Sensitization possible through skin contact.
- Additional toxicological information:
  This material contains Butyl Glycidyl Ether which is suspected of causing cancer - Carc 2 and suspected of causing genetic defects - Muta 2.
- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    None of the ingredients is listed.
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.
12 Ecological information

- **Toxicity**
  - **Aquatic toxicity:**
    - EC50 (48 h): 2.1 mg/l (water flea)
    - LC50 (96 h): 1.3 mg/l (daphnia)
  - **Persistence and degradability** No further relevant information available.
  - **Behavior in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.

- **Ecotoxic effects:**
  - **Remark:** Toxic for fish
  - **Additional ecological information:**
    - **General notes:**
      - Water hazard class 2 (Self-assessment): hazardous for water
      - Do not allow product to reach ground water, water course or sewage system.
      - Danger to drinking water if even small quantities leak into the ground.
      - Also poisonous for fish and plankton in water bodies.
      - Toxic for aquatic organisms
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation:** Contact waste processors for recycling information.

- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**
  - DOT, ADN, IMDG, IATA not regulated

- **UN proper shipping name**
  - DOT, ADN, IMDG, IATA not regulated

- **Transport hazard class(es)**
  - **DOT, IATA** not regulated
    - **Class**
        - not regulated
    - **Label**
        - not regulated
  - **ADN/R Class:** not regulated

- **Packing group**
  - DOT, IMDG, IATA not regulated

- **Environmental hazards:**
  - **Marine pollutant:** Yes
<table>
<thead>
<tr>
<th>15 Regulatory information</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Safety, health and environmental regulations/legislation specific for the substance or mixture</td>
</tr>
<tr>
<td>· Sara</td>
</tr>
<tr>
<td>· Section 355 (extremely hazardous substances): None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Section 313 (Specific toxic chemical listings): None of the ingredients is listed.</td>
</tr>
<tr>
<td>· TSCA (Toxic Substances Control Act): All ingredients are listed.</td>
</tr>
<tr>
<td>· Proposition 65</td>
</tr>
<tr>
<td>· Chemicals known to cause cancer: None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Chemicals known to cause reproductive toxicity for females: None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Chemicals known to cause reproductive toxicity for males: None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Chemicals known to cause developmental toxicity: None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Carcinogenic categories</td>
</tr>
<tr>
<td>· EPA (Environmental Protection Agency) None of the ingredients is listed.</td>
</tr>
<tr>
<td>· TLV (Threshold Limit Value established by ACGIH) None of the ingredients is listed.</td>
</tr>
<tr>
<td>· NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.</td>
</tr>
</tbody>
</table>

**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environment protection department.
· **Contact:** Kim Dermit
· **Date of preparation / last revision** 06/04/2018 / -
· **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
Product name: EpoxySet Resin - Part A

IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flam. Liq. 3: Flammable liquids – Category 3
Flam. Liq. 4: Flammable liquids – Category 4
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
1 Identification

· Product name: EpoxySet Hardener - Part B

· Part number:
  145-20000
  145-20010, -20020

· CAS Number:
  112-24-3

· EC number:
  203-950-6

· Index number:
  612-059-00-5

· Application of the substance / the mixture: Epoxy curing agent

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier:
  Allied High Tech Products Inc.
  2376 East Pacifica Place
  USA-RANCHO DOMINGUEZ, CA 90220
  USA
  info@alliedhightech.com

· Information department: Product safety department

· Emergency telephone number:
  During normal opening times: +1 (310) 635-2466
  Chemtrec: +1 (202) 483-7616

2 Hazard(s) identification

· Classification of the substance or mixture

  GHS08 Health hazard

  STOT SE 1 H370 Causes damage to the eyes.
  STOT RE 1 H372 Causes damage to the kidneys, the liver and the skin through prolonged or repeated exposure.

  GHS05 Corrosion

  Skin Corr. 1B H314 Causes severe skin burns and eye damage.

(Contd. on page 2)
Product name: EpoxySet Hardener - Part B

GHS07

Acute Tox. 4 H312 Harmful in contact with skin.
Skin Sens. 1 H317 May cause an allergic skin reaction.
Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

Label elements

GHS label elements
The substance is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms

GHS05 GHS07 GHS08

Signal word Danger

Hazard-determining components of labeling:
triethylenetetramine

Hazard statements
Harmful in contact with skin.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Causes damage to the eyes.
Causes damage to the kidneys, the liver and the skin through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects.

Precautionary statements
Do not breathe dusts or mists.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing must not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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/doctor.
Specific treatment (see on this label).
Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
Product name: EpoxySet Hardener - Part B

- Classification system:
  - NFPA ratings (scale 0 - 4)
    
    ![Image of NFPA ratings]
    Health = 3
    Fire = 1
    Reactivity = 0
  
  - HMIS-ratings (scale 0 - 4)
    
    ![Image of HMIS ratings]
    Health = 3
    Fire = 1
    Reactivity = 0

- Other hazards
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

### 3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  - 112-24-3 triethylenetetramine
- Identification number(s)
  - EC number: 203-950-6
  - Index number: 612-059-00-5

### 4 First-aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation:
  Supply fresh air and to be sure call for a doctor.
  In case of unconsciousness place patient stably in side position for transportation.
- After skin contact:
  Immediately wash with water and soap and rinse thoroughly.
- After eye contact:
  Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing:
  Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- Information for doctor:
  - Most important symptoms and effects, both acute and delayed: Nausea
  - Indication of any immediate medical attention and special treatment needed
    No further relevant information available.

### 5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture
  During heating or in case of fire poisonous gases are produced.
6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures
  Mount respiratory protective device.
  Wear protective equipment. Keep unprotected persons away.
· Environmental precautions:
  Do not allow to enter sewers/ surface or ground water.
  Inform respective authorities in case of seepage into water course or sewage system.
· Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Use neutralizing agent.
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.
· Protective Action Criteria for Chemicals

| PAC-1: | 3 ppm |
| PAC-2: | 14 ppm |
| PAC-3: | 83 ppm |

7 Handling and storage

· Handling:
  · Precautions for safe handling Prevent formation of aerosols.
  · Information about protection against explosions and fires: Keep respiratory protective device available.
· Conditions for safe storage, including any incompatibilities
  · Storage:
    · Requirements to be met by storerooms and receptacles: Store in a dry place.
    · Information about storage in one common storage facility: Not required.
    · Further information about storage conditions:
      Keep receptacle tightly sealed.
      Store receptacle in a well ventilated area.
  · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.
47. Control parameters

Components with limit values that require monitoring at the workplace:

- 112-24-3 triethylenetetramine
  - WEEL Long-term value: 6 mg/m³, 1 ppm

Skin

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:
- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respiratory protective device when high concentrations are present.

Protection of hands:
- Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves
- The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material
- The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:
- Form: Liquid
- Color: Clear
- Odor: Amine-like
- Odor threshold: Not determined.
- pH-value: Not determined.

Change in condition
- Melting point/Melting range: 12 °C (53.6 °F)
### 47.0 Boiling point/Boiling range:

~278 °C (~532.4 °F)

### Flash point:

135 °C (275 °F) (Pensky-Martens Closed Cup)

### Flammability (solid, gaseous):

Not applicable.

### Ignition temperature:

335 °C (635 °F)

### Decomposition temperature:

Not determined.

### Auto igniting:

Not determined.

### Danger of explosion:

Product does not present an explosion hazard.

### Explosion limits:

| Lower: | Not determined. |
| Upper: | Not determined. |

### Vapor pressure at 20 °C (68 °F):

0.01 hPa (0 mm Hg)

### Density at 20 °C (68 °F):

0.982 g/cm³ (8.19479 lbs/gal)

### Relative density:

Not determined.

### Vapor density:

5 (Air = 1)

### Specific gravity:

0.98

### Evaporation rate:

Not determined.

### Solubility in / Miscibility with Water:

Fully miscible.

### Partition coefficient (n-octanol/water):

Not determined.

### Viscosity:

| Dynamic: | Not determined. |
| Kinematic: | Not determined. |

### VOC content:

0.00 %

0.0 g/l / 0.00 lb/gl

### Other information:

No further relevant information available.

### 10 Stability and reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid**
  - Keep away from oxidising agents and acidic substances.
  - Keep away from heat.
  - Keep away from alkaline solutions.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
  - Nitrogen oxides
  - Carbon monoxide
- **Additional information:** Unidentified organic compounds may be formed during combustion.
11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values that are relevant for classification:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>112-24-3 triethylenetetramine</td>
<td>2,500 mg/kg (rat)</td>
<td>805 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- Primary chemical irritant effect:
  - on the skin: Caustic effect on skin and mucous membranes.
  - on the eye: Strong caustic effect.
  - Sensitization: Sensitization possible through skin contact.
  - Additional toxicological information:
    Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- Carcinogenic categories

  - IARC (International Agency for Research on Cancer)
    Substance is not listed.

  - NTP (National Toxicology Program)
    Substance is not listed.

  - OSHA-Ca (Occupational Safety & Health Administration)
    Substance is not listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity:
    | EC50 (96 h) | EC50 (48 h) (static) |
    |-------------|----------------------|
    | 3.7 mg/l (selenastrum capricornutum) | 33.9 mg/l (daphnia) |

  - Persistence and degradability: No further relevant information available.
  - Behavior in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
  - Ecotoxicological effects:
  - Remark: Harmful to fish
  - Additional ecological information:
  - General notes:
    Water hazard class 2 (Assessment by list): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Must not reach bodies of water or drainage ditch undiluted or unneutralized.
    Danger to drinking water if even small quantities leak into the ground.
    Harmful to aquatic organisms
  - Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
  - Other adverse effects: No further relevant information available.
13 Disposal considerations

- Waste treatment methods
  - Recommendation: Contact waste processors for recycling information.

- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
  - DOT, IMDG, IATA: UN2259

- UN proper shipping name
  - DOT: Triethylenetetramine
  - IMDG, IATA: TRIETHYLENETETRAMINE

- Transport hazard class(es)
  - DOT
    - Class: 8 Corrosive substances
    - Label: 8
  
  - IMDG, IATA
    - Class: 8 Corrosive substances
    - Label: 8

- Packing group
  - DOT, IMDG, IATA: II

- Environmental hazards:
  - Marine pollutant: No

- Special precautions for user
  - Warning: Corrosive substances
  - EMS Number: 80
  - Segregation groups: Alkalis
  - Segregation Category: B
  - Segregation Code: SW2 Clear of living quarters.

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  - Not applicable.
Product name: EpoxySet Hardener - Part B

- Transport/Additional information:
  - DOT
    - Quantity limitations
      On passenger aircraft/rail: 1 L
      On cargo aircraft only: 30 L

- IMDG
  - Limited quantities (LQ): 1L
  - Excepted quantities (EQ): Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml

- UN "Model Regulation": UN 2259 TRIETHYLENETETRAMINE, 8, II

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
    - Section 355 (extremely hazardous substances):
      Substance is not listed.
    - Section 313 (Specific toxic chemical listings):
      Substance is not listed.
    - TSCA (Toxic Substances Control Act):
      Substance is listed.
    - Proposition 65
      - Chemicals known to cause cancer:
        Substance is not listed.
      - Chemicals known to cause reproductive toxicity for females:
        Substance is not listed.
      - Chemicals known to cause reproductive toxicity for males:
        Substance is not listed.
      - Chemicals known to cause developmental toxicity:
        Substance is not listed.
    - Carcinogenic categories
      - EPA (Environmental Protection Agency)
        Substance is not listed.
      - TLV (Threshold Limit Value established by ACGIH)
        Substance is not listed.
      - NIOSH-Ca (National Institute for Occupational Safety and Health)
        Substance is not listed.
    - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Product name: EpoxySet Hardener - Part B

- **Department issuing SDS:** Environment protection department.
- **Contact:** Kim Dermit
- **Date of preparation / last revision:** 06/04/2018 / -
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Acute Tox. 4: Acute toxicity – Category 4
  - Skin Corr. 1B: Skin corrosion/irritation – Category 1B
  - Skin Sens. 1: Skin sensitisation – Category 1
  - STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
  - STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
  - Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3