1 Identification

- **Product identifier**
  - **Trade name**: EPOFIX HARDENER
  - **Article number**: 1232-B, 1232-H, 1232-SP
  - **CAS Number**: 112-24-3
  - **EC number**: 203-950-6
  - **Index number**: 612-059-00-5

- **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier**: Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: sgkcck@aol.com
    www.emsdiasum.com

- **Information department**: Product safety department

- **Emergency telephone number**: ChemTrec 1-800-424-9300 Contract CCN7661
  1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS05 Corrosion
    - Skin Corr. 1B H314 Causes severe skin burns and eye damage.
  - GHS07
    - Acute Tox. 4 H312 Harmful in contact with skin.
    - Skin Sens. 1 H317 May cause an allergic skin reaction.

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

- **Hazard pictograms**
  - GHS05
  - GHS07

- **Signal word** Danger

- **Hazard-determining components of labeling**
  - 3,6-diazaoctanethylenediamin

- **Hazard statements**
  - Harmful in contact with skin.

(Contd. on page 2)
Trade name: EPOFIX HARDENER

Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

- **Precautionary statements**
- Do not breathe dusts or mists.
- Wash thoroughly after handling.
- Contaminated work clothing must not be allowed out of the workplace.
- 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).
- 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.

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**
  - Health = 3
  - Fire = 1
  - Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**
  - 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 3,6-diazaoctanethylenediamin
- **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.
Trade name: EPOFIX HARDENER

- 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: No further relevant information available.
  - 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: 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:
  Inform respective authorities in case of seepage into water course or sewage system.
  Dilute with plenty of water.
  Do not allow to enter sewers/surface or ground water.
- 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
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
Trade name: EPOFIX HARDENER

- Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
- Storage:
- Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- 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:
  - 112-24-3 3,6-diazaoctanethylenediamin
    - 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.
    - Avoid contact with the eyes and skin.
  - Breathing equipment:
    - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
  - Protection of hands:

    Protective gloves

    The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
    Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
    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.
Trade name: EPOFIX HARDENER

**9 Physical and chemical properties**

- **General Information**
  - Appearance:
    - Form: Liquid
    - Color: Light yellow
  - Odor: Amine-like
  - Odor threshold: Not determined.
  - pH-value: Not determined.

- **Change in condition**
  - Melting point/Melting range: 12 °C (53.6 °F)
  - Boiling point/Boiling range: ~278 °C (~532.4 °F)

- **Flammability (solid, gaseous):** Not flammable.
  - 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: Not determined.
  - 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/gal

- **Solids content:** 0.0 %
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: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values that are relevant for classification:
    - 112-24-3 3,6-diazaocanethylenediamin
      - Oral LD50 2,500 mg/kg (rat)
      - Dermal LD50 805 mg/kg (rabbit)
    - Primary irritant effect:
      - on the skin: Strong 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: No further relevant information available.
  - 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
Trade name: EPOFIX HARDENER

- 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:
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- 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, ADR, IMDG, IATA UN2259
- UN proper shipping name
  - DOT Triethylenetetramine
  - ADR 2259 Triethylenetetramine
  - IMDG, IATA TRIETHYLENETETRAMINE
- Transport hazard class(es)
  - DOT
    - Class 8 Corrosive substances
    - Label 8
  - ADR, IMDG, IATA
    - Class 8 Corrosive substances
    - Label 8
  - Packing group
    - DOT, ADR, IMDG, IATA II
### Trade name: EPOFIX HARDENER

<table>
<thead>
<tr>
<th>Environmental hazards:</th>
<th>Not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special precautions for user</td>
<td>Warning: Corrosive substances</td>
</tr>
<tr>
<td>Danger code (Kemler):</td>
<td>80</td>
</tr>
<tr>
<td>EMS Number:</td>
<td>80-05</td>
</tr>
<tr>
<td>Segregation groups</td>
<td>Alkalis</td>
</tr>
<tr>
<td>Stowage Category</td>
<td>B</td>
</tr>
<tr>
<td>Stowage Code</td>
<td>SW2 Clear of living quarters.</td>
</tr>
<tr>
<td>Segregation Code</td>
<td>SG35 Stow &quot;separated from&quot; acids.</td>
</tr>
</tbody>
</table>

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |

- Transport/Additional information:
  - DOT
    - Quantity limitations
      - On passenger aircraft/rail: 1 L
      - On cargo aircraft only: 30 L
  - ADR
    - Exected quantities (EQ)
      - Code: E2
        - Maximum net quantity per inner packaging: 30 ml
        - Maximum net quantity per outer packaging: 500 ml
  - IMDG
    - Limited quantities (LQ)
      - 1L
    - Exected 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.
Trade name: EPOFIX HARDENER

- 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.

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

- Hazard pictograms
  - GHS05
  - GHS07

- Signal word: Danger

- Hazard-determining components of labeling:
  3,6-diazaoctanethylenediamin

- Hazard statements
  Harmful in contact with skin.
  Causes severe skin burns and eye damage.
  May cause an allergic skin reaction.

- Precautionary statements
  Do not breathe dusts or mists.
  Wash thoroughly after handling.
  Contaminated work clothing must not be allowed out of the workplace.
  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).
  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.

- 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.

- Date of preparation / last revision: 10/08/2018 / -

- 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
Trade name: EPOFIX HARDENER

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
1 Identification

- Product identifier
- Trade name: EPOFIX HARDENER
- Article number: 1232-B, 1232-H, 1232-SP
- CAS Number:
  112-24-3
- EC number:
  203-950-6
- Index number:
  612-059-00-5
- Relevant identified uses of the substance or mixture and uses advised against
  No further relevant information available.
- Application of the substance / the mixture
  Laboratory chemicals

2 Hazard(s) Identification

- Classification of the substance or mixture

  GHS05 corrosion
  Skin Corr. 1B H314 Causes severe skin burns and eye damage.

  GHS07
  Acute Tox. 4 H312 Harmful in contact with skin.
  Skin Sens. 1 H317 May cause an allergic skin reaction.
Trade name: EPOFIX HARDENER

- Label elements
- GHS label elements
  The substance is classified and labelled according to the Globally Harmonised System (GHS).
- Hazard pictograms

GHS05  GHS07

- Hazard word Danger

- Hazard-determining components of labelling:
  3,6-diazaoctanethylenediamin

- Hazard statements
  Harmful in contact with skin.
  Causes severe skin burns and eye damage.
  May cause an allergic skin reaction.

- Precautionary statements
  Do not breathe dusts or mists.
  Wash thoroughly after handling.
  Contaminated work clothing should not be allowed out of the workplace.
  Wear protective gloves/protective clothing/eye protection/face protection.
  IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
  IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF INHALED: Remove victim to fresh air and keep at rest in a position 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).
  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.

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

3 Composition and Information on Ingredients

- Chemical characterisation: Substances
- CAS No. Description
  112-24-3 3,6-diazaoctanethylenediamin
- 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 plenty of water and provide fresh air. Call for a doctor immediately.
  · Information for doctor:
    · Most important symptoms and effects, both acute and delayed: No further relevant information available.
    · 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 extinguishing methods suitable to surrounding conditions.
  · 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:
  · Inform respective authorities in case of seepage into water course or sewage system.
  · Dilute with plenty of water.
  · Do not allow to enter sewers/surface or ground water.

· Methods and material for containment and cleaning up:
  · Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  · Use neutralising 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.

7 Handling and Storage

· Handling:
  · Precautions for safe handling
    · Ensure good ventilation/exhaustion at the workplace.
    · Prevent formation of aerosols.

· Information about fire - and explosion protection: No special measures required.
Conditions for safe storage, including any incompatibilities

· Storage:
  · Requirements to be met by storerooms and receptacles: No special requirements.
  · Information about storage in one common storage facility: Not required.
  · Further information about storage conditions: Keep container tightly sealed.
  · Specific end use(s) No further relevant information available.

8 Exposure controls and personal protection

· Additional information about design of technical facilities: No further data; see item 7.

· Control parameters
  · Ingredients with limit values that require monitoring at the workplace: Not required.
  · Additional information: The lists valid during the making 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.
      Avoid contact with the eyes and skin.
    · Respiratory protection:
      In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
    · Protection of hands:

      Protective gloves

      The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
      Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
      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
    - Colour: Light yellow
  - Odour: Amine-like
  - Odour threshold: Not determined.
- **pH-value:** Not determined.
- **Change in condition**
  - Melting point/freezing point: 12 °C
  - Initial boiling point and boiling range: ~278 °C
- **Flash point:** 135 °C
- **Flammability (solid, gas):** Not applicable.
- **Ignition temperature:** 335 °C
- **Decomposition temperature:** Not determined.
- **Auto-ignition temperature:** Not determined.
- **Explosive properties:** Product does not present an explosion hazard.
- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.
- **Vapour pressure at 20 °C:** 0.01 hPa
- **Density at 20 °C:** 0.982 g/cm³
- **Relative density**
  - Not determined.
- **Vapour density**
  - Not determined.
- **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.
- **Solvent content:**
  - VOC (EC): 0.00 %
- **Solids content:** 0.0 %
- **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**
  - No further relevant information available.
Trade name: EPOFIX HARDENER

- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**

<table>
<thead>
<tr>
<th>LD/LEC50 values relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>T12-24-3 3,6-diazaoctanethylenediamin</strong></td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - Skin corrosion/irritation: Strong caustic effect on skin and mucous membranes.
  - Serious eye damage/irritation: Strong caustic effect.
  - Respiratory or skin sensitisation: Sensitisation 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.

### 12 Ecological Information

- **Toxicity**
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
- **Behaviour in environmental systems:**
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- **Ecotoxic effects:**
  - Remark: Harmful to fish
- **Additional ecological information:**
  - General notes:
    - Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water
    - Do not allow product to reach ground water, water course or sewage system.
    - Must not reach sewage water or drainage ditch undiluted or unneutralised.
    - 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:**
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:**
  Disposal must be made according to official regulations.
### 14 Transport information

| · UN-Number  | UN2259 |
| · ADG, IMDG, IATA | 2259 TRIETHYLENETETRAMINE |
| · UN proper shipping name  | TRIETHYLENETETRAMINE |
| · ADG | 8 Corrosive substances. |
| · IMDG, IATA | 8 |
| · Packing group  | II |
| · ADG, IMDG, IATA | Not applicable. |
| · Environmental hazards: | Warning: Corrosive substances. |
| · Special precautions for user  | 80 |
| · Danger code (Kemler): | 8-05 |
| · EMS Number: | Alkalies |
| · Segregation groups  | B |
| · Stowage Category | SW2 Clear of living quarters. |
| · Stowage Code | SG35 Stow "separated from" acids. |
| · Segregation Code | |
| · Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. |
| · Transport/Additional information: | 1L |
| · ADG | Code: E2 |
| · Limited quantities (LQ) | Maximum net quantity per inner packaging: 30 ml |
| · Excepted quantities (EQ) | Maximum net quantity per outer packaging: 500 ml |
| · Transport category  | 2 |
| · Tunnel restriction code | E |
| · IMDG | 1L |
| · Limited quantities (LQ) | Code: E2 |
| · Excepted quantities (EQ) | Maximum net quantity per inner packaging: 30 ml |
| · UN "Model Regulation":  | Maximum net quantity per outer packaging: 500 ml |
| | UN 2259 TRIETHYLENETETRAMINE, 8, II |
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Australian Inventory of Chemical Substances
  Substance is listed.
- Standard for the Uniform Scheduling of Medicines and Poisons
  Substance is not listed.
- GHS label elements
  The substance is classified and labelled according to the Globally Harmonised System (GHS).
- Hazard pictograms
  ![GHS05](image1) ![GHS07](image2)

- Signal word Danger

- Hazard-determining components of labelling:
  3,6-diazaoctanethylenediamin
- Hazard statements
  Harmful in contact with skin.
  Causes severe skin burns and eye damage.
  May cause an allergic skin reaction.
- Precautionary statements
  Do not breathe dusts or mists.
  Wash thoroughly after handling.
  Contaminated work clothing should not be allowed out of the workplace.
  Wear protective gloves/protective clothing/eye protection/face protection.
  IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
  IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF INHALED: Remove victim to fresh air and keep at rest in a position 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).
  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.

- Directive 2012/18/EU
  - Named dangerous substances - ANNEX I 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.

- 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)
Trade name: EPOFIX HARDENER

IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
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
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Sens. 1: Skin sensitisation – Category 1
1 Identification

- Product identifier
  - Trade name: **EPOFIX HARDENER**
  - Article number: 1232-B, 1232-H, 1232-SP
  - CAS Number: 112-24-3
  - EC number: 203-950-6
  - Index number: 612-059-00-5
- Application of the substance / the mixture: Laboratory chemicals
- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier: Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: sgkcck@aol.com
    www.emsdiasum.com
  - Information department: Product safety department
  - Emergency telephone number:
    ChemTrec 1-800-424-9300 Contract CCN7661
    1-703-527-3887

2 Hazard(s) identification

- Classification of the substance or mixture
  - GHS05 Corrosion
    Skin Corrosion - Category 1B  H314  Causes severe skin burns and eye damage.
  - GHS07
    Acute Toxicity (Dermal) – Category 4  H312  Harmful in contact with skin.
    Skin Sensitizer - Category 1  H317  May cause an allergic skin reaction.
- Label elements
  - GHS label elements: The substance is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms
  - GHS05
  - GHS07
- Signal word: Danger
- Hazard-determining components of labeling:
  - 3,6-diazaoctanethylenediamin
- Hazard statements
  Harmful in contact with skin.
Causes severe skin burns and eye damage. May cause an allergic skin reaction.

Precautionary statements
Do not breathe dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. 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 [or 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. Take off contaminated clothing and wash it before reuse. Specific measures (see on this label). 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.

Classification system:
- NFPA ratings (scale 0 - 4)
  Health = 3  Fire = 1  Reactivity = 0
- HMIS-ratings (scale 0 - 4)
  HEALTH  Health = 3  FIRE  Fire = 1  REACTIVITY  Reactivity = 0

3 Composition/information on ingredients
- Chemical characterization: Substances
  CAS No. Description
  112-24-3 3,6-diazaoctanethylenediamin
- 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.
Trade name: EPOFIX HARDENER

- 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: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguising media
  - Suitable extinguishing agents: Use fire fighting measures that suit the environment.
  - 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:
  - Inform respective authorities in case of seepage into water course or sewage system.
  - Dilute with plenty of water.
  - Do not allow to enter sewers/surface or ground water.
- 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.

7 Handling and storage

- Handling:
  - Precautions for safe handling
    - Ensure good ventilation/exhaustion at the workplace.
    - Prevent formation of aerosols.
  - Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
- Storage:
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep receptacle tightly sealed.
  - 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.
Trade name: EPOFIX HARDENER

Control parameters

Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>112-24-3 3,6-diazoctanethylenediamin</th>
<th>EV Long-term value: 3 mg/m³, 0.5 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td></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.
- Avoid contact with the eyes and skin.

Breathing equipment:

- In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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: Light yellow
  - Odor: Amine-like
  - Odor threshold: Not determined.

- pH-value: Not determined.
### 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:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50 Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>2,500 mg/kg (rat)</td>
</tr>
</tbody>
</table>
Trade name: EPOFIX HARDENER

Dermal LD50 805 mg/kg (rabbit)

- Primary irritant effect:
  - on the skin: Strong 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.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - 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: 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:
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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

(CA)
## Transport information

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT, TDG, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-Number</td>
<td>UN2259</td>
</tr>
</tbody>
</table>

### UN proper shipping name

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT</th>
<th>TDG</th>
<th>IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethyleneetramine</td>
<td>2259 Triethyleneetramine</td>
<td>TRIETHYLENETETRAMINE</td>
<td></td>
</tr>
</tbody>
</table>

### Transport hazard class(es)

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>8 Corrosive substances</td>
</tr>
<tr>
<td>Label</td>
<td>8</td>
</tr>
</tbody>
</table>

### Packing group

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT, TDG, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td></td>
</tr>
</tbody>
</table>

### Environmental hazards:

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT, TDG, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable.</td>
<td></td>
</tr>
</tbody>
</table>

### Special precautions for user

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT, TDG, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning: Corrosive substances</td>
<td></td>
</tr>
<tr>
<td>EMS Number: 8-05</td>
<td></td>
</tr>
</tbody>
</table>

### Segregation groups

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT, TDG, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkalis</td>
<td></td>
</tr>
</tbody>
</table>

### Stowage Category

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT, TDG, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td></td>
</tr>
</tbody>
</table>

### Stowage Code

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT, TDG, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW2 Clear of living quarters.</td>
<td></td>
</tr>
<tr>
<td>SG35 Stow &quot;separated from&quot; acids.</td>
<td></td>
</tr>
</tbody>
</table>

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT, TDG, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable.</td>
<td></td>
</tr>
</tbody>
</table>

### Transport/Additional information:

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity limitations</td>
<td>On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exempted quantities (EQ)</td>
<td>Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>DOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited quantities (LQ)</td>
<td>1L</td>
</tr>
</tbody>
</table>

(Contd. on page 8)
**Trade name:** EPOFIX HARDENER

<table>
<thead>
<tr>
<th>Excepted quantities (EQ)</th>
<th>Code: E2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td></td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 500 ml</td>
<td></td>
</tr>
</tbody>
</table>

**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.

- **Canadian substance listings:**
  - **Canadian Domestic Substances List (DSL)**
    - Substance is listed.
  - **Canadian Ingredient Disclosure list (limit 0.1%)**
    - Substance is listed.
  - **Canadian Ingredient Disclosure list (limit 1%)**
    - Substance is not listed.

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

- **Hazard pictograms**
  - GHS05
  - GHS07

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - 3,6-diazaoctanethylenediamin

- **Hazard statements**
  - Harmful in contact with skin.
  - Causes severe skin burns and eye damage.
  - May cause an allergic skin reaction.

- **Precautionary statements**
  - Do not breathe dust/plume/gas/mist/vapours/spray.
  - Wash thoroughly after handling.
  - Contaminated work clothing should not be allowed out of the workplace.
  - 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 [or 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.
Take off contaminated clothing and wash it before reuse.
Specific measures (see on this label).
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.

· **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.

· **Date of the latest revision of the safety data sheet** 10/08/2018 / -

· **Abbreviations and acronyms:**
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - 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)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
1 Identification of the substance/mixture and of the company/undertaking

· Product identifier

· Trade name: **EPOFIX HARDENER**
· Article number: 1232-B, 1232-H, 1232-SP
· CAS Number: 112-24-3
· EC number: 203-950-6
· Index number: 612-059-00-5
· Relevant identified uses of the substance or mixture and uses advised against
  No further relevant information available.
· Application of the substance / the mixture Laboratory chemicals
· Details of the supplier of the safety data sheet

· Manufacturer/Supplier:
  Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkck@aol.com
  www.emsdiasum.com
· Further information obtainable from: Product safety department
· Emergency telephone number:
  ChemTrec 1-800-424-9300 Contract CCN7661
  1-703-527-3887

2 Hazards identification

· Classification of the substance or mixture

  ![Corrosion symbol]
  **Skin Corr. 1B H314** Causes severe skin burns and eye damage.

  ![Acute Tox. 4 symbol]
  **Acute Tox. 4 H312** Harmful in contact with skin.
  **Skin Sens. 1 H317** May cause an allergic skin reaction.

  ![Aquatic Chronic 3 symbol]
  **Aquatic Chronic 3 H412** Harmful to aquatic life with long lasting effects.

· Label elements

· GHS label elements
  The substance is classified and labelled according to the Globally Harmonised System (GHS).
· Hazard pictograms

  ![GHS05 and GHS07 symbols]

· Signal word Danger
· Hazard-determining components of labelling:
  3,6-diazaoctanethylenediamin

· Hazard statements
  Harmful in contact with skin.
  Causes severe skin burns and eye damage.
  May cause an allergic skin reaction.
  Harmful to aquatic life with long lasting effects.

· Precautionary statements
  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  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).
  Take off contaminated clothing and wash it before reuse.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

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

3 Composition/information on ingredients

· Chemical characterisation: Substances
· CAS No. Description
  112-24-3 3,6-diazaoctanethylenediamin
· 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 plenty of water and provide fresh air. Call for a doctor immediately.
· Information for doctor:
  · Most important symptoms and effects, both acute and delayed: No further relevant information available.
  · Indication of any immediate medical attention and special treatment needed: No further relevant information available.
5 Firefighting measures

- **Extinguishing media**
  - **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
  - **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:**
  - Inform respective authorities in case of seepage into water course or sewage system.
  - Dilute with plenty of water.
  - Do not allow to enter sewers/surface or ground water.

- **Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Use neutralising 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.

7 Handling and storage

- **Handling:**
  - **Precautions for safe handling**
    - Ensure good ventilation/exhaustion at the workplace.
    - Prevent formation of aerosols.
  - **Information about fire - and explosion protection:** No special measures required.

- **Conditions for safe storage, including any incompatibilities**
  - **Storage:**
    - **Requirements to be met by storerooms and receptacles:** No special requirements.
    - **Information about storage in one common storage facility:** Not required.
    - **Further information about storage conditions:** Keep container tightly sealed.

- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **Control parameters**
  - **Ingredients with limit values that require monitoring at the workplace:** Not required.
  - **Additional information:** The lists valid during the making were used as basis.

- **Exposure controls**
  - **Personal protective equipment:**
    - **General protective and hygienic measures:**
      - Keep away from foodstuffs, beverages and feed.
Trade name: EPOFIX HARDENER

Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

- **Respiratory protection:**
  In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

- **Protection of hands:**

  **Protective gloves**

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

  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
      - Colour: Light yellow
      - Odour: Amine-like
      - Odour threshold: Not determined.
    
    - **pH-value:** Not determined.

  - **Change in condition**

    - Melting point/freezing point: 12 °C
    - Initial boiling point and boiling range: ~278 °C

  - **Flash point:** 135 °C

  - **Flammability (solid, gas):** Not applicable.

  - **Ignition temperature:** 335 °C

  - **Decomposition temperature:** Not determined.

  - **Auto-ignition temperature:** Not determined.

  - **Explosive properties:** Product does not present an explosion hazard.
Trade name: EPOFIX HARDENER

- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.

- Vapour pressure at 20 °C: 0.01 hPa

- Density at 20 °C: 0.982 g/cm³
  - Relative density: Not determined.
  - Vapour density: Not determined.
  - 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.

- Solvent content:
  - VOC (EC): 0.00 %

- Solids content: 0.0 %

- 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: No further relevant information available.
  - Incompatible materials: No further relevant information available.
  - Hazardous decomposition products: No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**

<table>
<thead>
<tr>
<th>LD/LC50 values relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>112-24-3 3,6-diazaoctanethylenediamin</td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - Skin corrosion/irritation: Strong caustic effect on skin and mucous membranes.
  - Serious eye damage/irritation: Strong caustic effect.
  - Respiratory or skin sensitisation: Sensitisation 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.

(Contd. on page 6)
12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.

- Behaviour 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 (German Regulation) (Assessment by list): hazardous for water
    - Do not allow product to reach ground water, water course or sewage system.
    - Must not reach sewage water or drainage ditch undiluted or unneutralised.
    - Danger to drinking water if even small quantities leak into the ground.
    - Harmful to aquatic organisms

13 Disposal considerations

- Waste treatment methods
- Recommendation
  - Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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

- Recommended cleansing agents: Water, if necessary together with cleansing agents.

14 Transport information

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

- UN proper shipping name
  - ADR: 2259 TRIETHYLENETETRAMINE
  - IMDG, IATA: TRIETHYLENETETRAMINE

- Transport hazard class(es)
  - ADR, IMDG, IATA

  - Class: 8 Corrosive substances.
  - Label: 8
### Safety data sheet
#### according to 1907/2006/EC, Article 31

**Trade name:** EPOFIX HARDENER

<table>
<thead>
<tr>
<th>Packing group</th>
<th>ADR, IMDG, IATA</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental hazards:</td>
<td>Not applicable.</td>
<td></td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Warning: Corrosive substances.</td>
<td></td>
</tr>
<tr>
<td>Danger code (Kemler):</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>EMS Number:</td>
<td>8-05</td>
<td></td>
</tr>
<tr>
<td>Segregation groups</td>
<td>Alkalis</td>
<td></td>
</tr>
<tr>
<td>Stowage Category</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Stowage Code</td>
<td>SW2 Clear of living quarters.</td>
<td></td>
</tr>
<tr>
<td>Segregation Code</td>
<td>SG35 Stow &quot;separated from&quot; acids.</td>
<td></td>
</tr>
</tbody>
</table>

**Transport in bulk according to Annex II of Marpol and the IBC Code:**

<table>
<thead>
<tr>
<th>ADR</th>
<th>Limited quantities (LQ)</th>
<th>1L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exempted quantities (EQ)</td>
<td>Code: E2</td>
<td></td>
</tr>
<tr>
<td>Transport category</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Tunnel restriction code</td>
<td>E</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMDG</th>
<th>Limited quantities (LQ)</th>
<th>1L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exempted quantities (EQ)</td>
<td>Code: E2</td>
<td></td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 500 ml</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**UN "Model Regulation":**

| UN 2259 TRIETHYLENETETRAMINE, 8, II |

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **GHS label elements**
  
  The substance is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**
  
  GHS05  
  GHS07

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  3,6-diazaoctanethylenediamin

- **Hazard statements**
  Harmful in contact with skin.
  Causes severe skin burns and eye damage.
  May cause an allergic skin reaction.
  Harmful to aquatic life with long lasting effects.
Safety data sheet  
according to 1907/2006/EC, Article 31  

Printing date 08.10.2018  
Revision: 08.10.2018

Trade name: EPOFIX HARDENER

(Contd. of page 7)

· Precautionary statements
  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  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).
  Take off contaminated clothing and wash it before reuse.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

· Directive 2012/18/EU
  · Named dangerous substances - ANNEX I 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.

· 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
  IATA: International Air Transport Association
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  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
  Acute Tox. 4: Acute toxicity – Category 4
  Skin Corr. 1B: Skin corrosion/irritation – Category 1B
  Skin Sens. 1: Skin sensitisation – Category 1
  Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Trade name: EPOFIX HARDENER
- Article number: 1232-B, 1232-H, 1232-SP
- CAS Number: 112-24-3
- EC number: 203-950-6
- Index number: 612-059-00-5

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

No further relevant information available.

1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier: Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkck@aol.com
  www.emsdiasum.com

- Further information obtainable from: Product safety department

1.4 Emergency telephone number:

ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

GHS05 corrosion

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

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.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS05  GHS07

(Contd. on page 2)
### 2.3 Other hazards

- Results of PBT and vPvB assessment
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation:** Substances
  - **CAS No. Description**
    - 112-24-3 3,6-diazaoctanethylenediamin
  - **Identification number(s)**
    - **EC number:** 203-950-6
    - **Index number:** 612-059-00-5

### SECTION 4: First aid measures

- **4.1 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 plenty of water and provide fresh air. Call for a doctor immediately.
  - **4.2 Most important symptoms and effects, both acute and delayed**
    No further relevant information available.
  - **4.3 Indication of any immediate medical attention and special treatment needed**
    No further relevant information available.

(Contd. on page 3)
SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture: No further relevant information available.
- 5.3 Advice for firefighters
- Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
- 6.2 Environmental precautions:
  Inform respective authorities in case of seepage into water course or sewage system.
  Dilute with plenty of water.
  Do not allow to enter sewers/surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Use neutralising agent.
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- 6.4 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.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling
  Ensure good ventilation/exhaustion at the workplace.
  Prevent formation of aerosols.
- Information about fire - and explosion protection: No special measures required.
- 7.2 Conditions for safe storage, including any incompatibilities
- Storage:
  Requirements to be met by storerooms and receptacles: No special requirements.
  Information about storage in one common storage facility: Not required.
  Further information about storage conditions: Keep container tightly sealed.
- 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.
- 8.1 Control parameters
- Ingredients with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists valid during the making were used as basis.
- 8.2 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. Avoid contact with the eyes and skin.

**Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

**Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

---

### SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
  - **General Information**
    - **Appearance:**
      - Form: Liquid
      - Colour: Light yellow
      - Odour: Amine-like
      - Odour threshold: Not determined.
    - **pH-value:** Not determined.
  
    - **Change in condition**
      - Melting point/freezing point: 12 °C
      - Initial boiling point and boiling range: 278 °C
    
    - **Flash point:** 135 °C
  
    - **Flammability (solid, gas):** Not applicable.
  
    - **Ignition temperature:** 335 °C
  
    - **Decomposition temperature:** Not determined.
  
    - **Auto-ignition temperature:** Not determined.

    - **Explosive properties:** Product does not present an explosion hazard.
  
    - **Explosion limits**
      
      - **Lower:** Not determined.

---

(Contd. on page 5)
Trade name: EPOFIX HARDENER

Upper:

- Vapour pressure at 20 °C: 0.01 hPa
- Density at 20 °C: 0.982 g/cm³
- Relative density: Not determined.
- Vapour density: Not determined.
- 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.

- Solvent content:
  - VOC (EC): 0.00 %
  - Solids content: 0.0 %

- 9.2 Other information
  No further relevant information available.

SECTION 10: Stability and reactivity

- 10.1 Reactivity
  No further relevant information available.

- 10.2 Chemical stability
  No further relevant information available.

- Thermal decomposition / conditions to be avoided:
  No decomposition if used according to specifications.

- 10.3 Possibility of hazardous reactions
  No dangerous reactions known.

- 10.4 Conditions to avoid
  No further relevant information available.

- 10.5 Incompatible materials
  No further relevant information available.

- 10.6 Hazardous decomposition products:
  No dangerous decomposition products known.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
  Harmful in contact with skin.

- LD/LC50 values relevant for classification:
  112-24-3 3,6-diazaoctanethylenediamin
  Oral LD50 2,500 mg/kg (rat)
  Dermal LD50 805 mg/kg (rabbit)

- Primary irritant effect:

- Skin corrosion/irritation
  Causes severe skin burns and eye damage.

- Serious eye damage/irritation
  Causes severe skin burns and eye damage.

- Respiratory or skin sensitisation
  May cause an allergic skin reaction.

- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

- Germ cell mutagenicity
  Based on available data, the classification criteria are not met.

- Carcinogenicity
  Based on available data, the classification criteria are not met.

- Reproductive toxicity
  Based on available data, the classification criteria are not met.

(Contd. on page 6)
Trade name: EPOFIX HARDENER

- STOT-single exposure Based on available data, the classification criteria are not met.
- STOT-repeated exposure Based on available data, the classification criteria are not met.
- Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- 12.1 Toxicity
- Aquatic toxicity: No further relevant information available.
- 12.2 Persistence and degradability No further relevant information available.
- 12.3 Bioaccumulative potential No further relevant information available.
- 12.4 Mobility in soil No further relevant information available.
- Ecotoxicological effects:
  - Remark: Harmful to fish
- Additional ecological information:
  - General notes:
    Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Must not reach sewage water or drainage ditch undiluted or unneutralised.
    Danger to drinking water if even small quantities leak into the ground.
    Harmful to aquatic organisms
- 12.5 Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
- Recommendation
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- 14.1 UN-Number
- ADR, IMDG, IATA UN2259
- 14.2 UN proper shipping name
- ADR 2259 TRIETHYLENETETRAMINE
- IMDG, IATA TRIETHYLENETETRAMINE

- 14.3 Transport hazard class(es)
- ADR, IMDG, IATA
  - Class 8 Corrosive substances.
SECTION 14: Transport

14.4 Packing group
   ADR, IMDG, IATA
   II

14.5 Environmental hazards:
   Not applicable.

14.6 Special precautions for user
   Warning: Corrosive substances.
   Danger code (Kemler):
   80
   EMS Number:
   8-05
   Segregation groups
   Alkalis
   Stowage Category
   B
   Stowage Code
   SW2 Clear of living quarters.
   Segregation Code
   SG35 Stow "separated from" acids.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
   Not applicable.

Transport/Additional information:

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

- Exempted quantities (EQ)

- Transport category
  2

- Tunnel restriction code
  E

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

- Exempted quantities (EQ)

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

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I Substance is not listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

15.2 Chemical safety assessment:
   A Chemical Safety Assessment has not been carried out.

SECTION 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.

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
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
Trade name: EPOFIX HARDENER

LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Sens. 1: Skin sensitisation – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

GB
1 化学品及企业标识

- 产品识别者
  - 化学品中文(英文)名称, 化学品俗名或商品名: EPOFIX HARDENER
  - 商品编号: 1232-B, 1232-H, 1232-SP
  - CAS 编号: 112-24-3
  - 欧盟编号: 203-950-6
  - 欧盟编号: 612-059-00-5
- 相应纯物质或者混合物的相关下位用途及禁止用途: 无相关详细资料。
- 原材料的应用/准备工作进行 实验室化学物
- 安全技术说明书内供应商详细信息
  - 企业名称: Electron Microscopy Sciences
  - 地址: 1560 Industry Road
  - USA-Hatfield, PA 19440
  - Tel: 215-412-8400  Fax: 215-412-8450
  - email: sgkcek@aol.com
  - www.emsdiasum.com
  - 可获取更多资料的部门: Product safety department
  - 紧急联系电话号码: ChemTrec 1-800-424-9300 Contract CCN7661
  - 1-703-527-3887

2 危险性概述

- 紧急情况概述:
  - 浅黄色, 液体, 皮肤接触有害。造成严重皮肤灼伤和眼损伤。可能导致皮肤过敏反应。对水生生物有害并具有长期持续影响。

- GHS危险性类别
  - 腐蚀: 皮肤腐蚀/刺激 第1B类 H314 造成严重皮肤灼伤和眼损伤
  - 急性毒性(经皮肤) 第4类 H312 皮肤接触有害
  - 敏化(皮肤) 第1类 H317 可能导致皮肤过敏反应
  - 对水环境的危害(慢性) 第3类 H412 对水生生物有害并具有长期持续影响

- 标签因素
  - GHS卷标元素 本化学物质根据化学物质分类及标记全球协调制度(GHS)进行了分类及标记。

- 图示
  - GHS05  GHS07

(在 2 页继续)
化学品中文(英文)名称、化学品俗名或商品名：EPFIX HARDENER

- 名称：危险
- 标签上辨别危险的成份：
  - 三乙撑四胺
- 危险字句
  - 皮肤接触有害
  - 造成严重皮肤灼伤和眼损伤
  - 可能导致皮肤过敏反应
  - 对水生生物有害并具有长期持续影响
- 警戒字句
- 事故响应
  - 如皮肤(或头发)沾染: 立即脱掉所有沾染的衣服。用水清洗皮肤/淋浴
  - 如进入眼睛: 用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出,取出隐形眼镜。继续冲洗
  - 立即呼叫急救中心/医生
  - 脱掉沾染的衣服,清洗后方可重新使用
- 安全储存
  - 存放处须加锁
- 废弃处置
  - 处置内装物/容器按照地方/区域/国家/国际规章
- 其他有害性
  - PBT(残留性、生物浓缩性、毒性物质)及vPvB(高残留性、高生物浓缩性物质)评价结果
    - PBT(残留性、生物浓缩性、毒性物质): 不适用的
    - vPvB(高残留性、高生物浓缩性物质): 不适用的

3 成分/组成信息

- 纯品
- CAS号 化学名 通用名
  - 112-24-3 三乙撑四胺
- 鉴别编号:
  - 欧盟编号: 203-950-6
  - 欧盟编号: 612-059-00-5

4 急救措施

- 总说明
  - 马上脱下染有该产品的衣服。中毒的症状可能会在几个小时以后才出现;因此在发生事故之后起码要有 48 小时的医疗观察。
  - 吸入
    - 供给新鲜空气并且确保会叫医生。
    - 万一病人不清醒时,请让病人侧躺以便移动。
  - 皮肤接触
    - 用水和肥皂进行彻底的冲洗。
  - 眼睛接触
    - 张开眼睛在流水下冲洗数分钟。然后咨询医生。
  - 食入
    - 喝大量的清水和提供新鲜的空气。马上召唤医生。
- 给医生的资料:
  - 最重要的急慢性症状及其影响: 无相关详细资料。
  - 需要及时的医疗处理及特别处理的症状: 无相关详细资料。
化学品安全技术说明书

根据 GB/T 16483-2008, GB/T 17519-2013

化学品中文(英文)名称. 化学品俗名或商品名: EPOFIX HARDENER

(在 2 页继续)

5 消防措施

· 灭火方法
  灭火的方法和灭火剂: 使用适合四周环境的灭火措施.
  特别危险性: 无相关详细资料。
  特殊灭火方法: 消防人员特殊的防护装备: 没有要求特别的措施。

6 泄漏应急处理

· 保护措施: 带上保护仪器. 让未受到保护的人们远离.
  环境保护措施: 如果渗入了水源或污水系统, 请通知有关当局.
  把大量的水进行稀释.
  切勿让其进入下水道/水面或地下水.
  密封及净化方法和材料: 吸收液体粘合原料(沙粒、硅藻土、酸性粘合剂、通用粘合剂、锯屑).
  使用中和剂.
  根据第 13 条条条款弃置受污染物.
  确保有足够的通风装置.
  参照其他部分: 有关安全处理的资料请参阅第 7 节.
  有关个别保护装备的资料请参阅第 8 节.
  有关弃置的资料请参阅第 13 节.

7 操作处置与储存

· 操作处置
  操作: 确保工作间有良好的通风/排气装置.
  防止气溶胶的形成.
  有关火灾及防止爆炸的资料: 不需特别的措施.

· 储存: 混合危险性等安全储存条件
  储存: 没有特别的要求.
  有关使用一个普通的储存设施来储存的资料: 不需要.
  有关保存条件的更多资料: 将容器密封.
  具体的最终用户: 无相关详细资料。

8 接触控制和个体防护

· 工程控制方法: 没有进一步数据; 见第 7 项.
  控制变数: 在工作场所需要监控的限值成分 不要求.
  额外的资料: 制作期间有效的清单将作为基础来使用.

· 透漏控制
  个人防护设备: 一般保护和卫生措施: 远离食品、饮料和饲料.
### 理化特性

#### 一般说明
- **外观**
  - 形状: 液体
  - 颜色: 浅黄色
  - 气味: 类似胺
  - 嗅觉阈值: 未决定
- **pH值**: 未决定

#### 条件的更改
- 熔点: 12 °C
- 沸点/初沸点和沸程: ~278 °C
- 闪点: 135 °C

#### 可燃性 (固体、气体): 不适用的
- 点火温度: 335 °C

#### 分解温度: 未决定
- 自燃温度: 未决定

#### 爆炸的危险性: 该产品并没有爆炸的危险
- 爆炸极限:
  - 较低: 未决定
  - 较高: 未决定
- 蒸气压 在 20 °C: 0.01 hPa
- 密度 在 20 °C: 0.982 g/cm³
化学品中文(英文)名称: EPOFIX HARDENER

10. 稳定性和反应性

- 反应性: 无相关详细资料。
- 稳定性: 无相关详细资料。
- 热分解/要避免的情况: 如果遵照规格使用则不会分解。
- 有害反应可能性: 未有已知的危险反应。
- 应避免的条件: 无相关详细资料。
- 不相容的物质: 无相关详细资料。
- 危险的分解产物: 未知有危险的分解产品。

11. 毒理学信息

- 对毒性学影响的信息
- 急毒性:
  - 与分类相关的 LD/ LC50 值:
    112-24-3 三乙撑四胺
    - 口腔LD50 2,500 mg/kg (rat)
    - 皮肤LD50 805 mg/kg (rabbit)
  - 主要的刺激性影响:
    - 皮肤: 在皮肤和粘膜上造成强烈的腐蚀性影响。
    - 在眼睛上: 强烈的腐蚀性影响。
    - 敏感作用: 通过皮肤接触可能造成敏化作用。
  - 更多毒物的资料:
    吞咽该产品除了导致口部和喉咙出现强烈的腐蚀性现象外，还有对食道和胃部造成穿孔的危险。

12. 生态学信息

- 生态毒性:
  - 水生毒性: 无相关详细资料。
  - 持久性和降解性: 无相关详细资料。
- 环境系统习性:
  - 潜在的生物累积性: 无相关详细资料。
  - 土壤内移动性: 无相关详细资料。
- 生态毒性的影响: 无相关详细资料。
- 备注: 对鱼类有害
### 13. 废弃处置

- **废弃处置方法**
  - **建议**：不能将该产品和家居垃圾一起丢弃。不要让该产品接触污水系统。

- **受污染的容器和包装**
  - **建议**：必须根据官方的规章来丢弃。
  - **建议的清洗剂**：如有必要请使用水及清洁剂进行清洁。

### 14. 运输信息

<table>
<thead>
<tr>
<th><strong>联合国危险货物编号(UN号)</strong></th>
<th>UN2259</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
<td></td>
</tr>
<tr>
<td><strong>UN适当装船名</strong></td>
<td>2259 三亚乙基四胺</td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>TRIETHYLENETETRAMINE</td>
</tr>
<tr>
<td><strong>IMDG, IATA</strong></td>
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</tbody>
</table>

- **运输危险等级**
  - **ADR, IMDG, IATA**

<table>
<thead>
<tr>
<th><strong>级别</strong></th>
<th>8 腐蚀性物质</th>
</tr>
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<tbody>
<tr>
<td><strong>标签</strong></td>
<td>8</td>
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</tbody>
</table>

- **包装组别**
  - **ADR, IMDG, IATA**
    - **II**

- **危害环境**
  - 不适用的

- **用户特别预防措施**
  - **警告**：腐蚀性物质
  - **危险编码**：80
  - **EMS 号码**：8-05
  - **Segregation groups**：Alkalis
  - **Stowage Category**：B
  - **Stowage Code**：SW2 Clear of living quarters.
  - **Segregation Code**：SG35 Stow "separated from" acids.
**15. 法规信息**

- **对相应纯物质或者混合物的安全、保健及环境法规/法律**
  - 危险化学品安全管理条例
  - 新化学物质环境管理办法

- **中国现有化学物质名录**
  - 有列出物质

- **GHS标签元素** 本化学物质根据化学物质分类及标记全球协调制度(GHS)进行了分类及标记。
  - **图示**

![GHS符号](image)

- **名称** 危险
- **标签上辨别危险的成份**
  - 三乙撑四胺
- **危险字句**
  - 皮肤接触有害
  - 造成严重皮肤灼伤和眼损伤
  - 可能导致皮肤过敏反应
  - 对水生生物有害并具有长期持续影响
- **警示字句**
- **事故响应**
  - 如皮肤(或头发)沾染:立即脱掉所有沾染的衣服。用水清洗皮肤/淋浴
  - 如进入眼睛:用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出,取出隐形眼镜。继续冲洗
  - 立即呼叫急救中心/医生
  - 具体治疗(见本标签上的)
  - 脱掉沾染的衣服,清洗后方可重新使用
化学品中文(英文)名称. 化学品俗名或商品名：EPOFIX HARDENER

- 安全储存
  存放处须加锁
- 废弃处置
  处置内装物/容器按照地方/区域/国家/国际规章
- 化学物质安全性评价: 尚未进行化学物质安全性评价

16 其他信息

该资料是基于我们目前的知识. 然而, 这并不构成对任何特定产品特性的担保并且不建立一个法律上有效的合同关系.

- 缩写:
  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
  IATA: International Air Transport Association
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: 持久性生物累积性有毒物质
  vPvB: very Persistent and very Bioaccumulative
  急性毒性(经皮肤) 第4类: Acute toxicity – Category 4
  皮肤腐蚀/刺激 第1B类: Skin corrosion/irritation – Category 1B
  敏化(皮肤) 第1类: Skin sensitisation – Category 1
  对水环境的危害(慢性) 第3类: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
ODDÍL 1: Identifikace látky/směsi a společnosti/podniku

· 1.1 Identifikátor výrobku
· Obchodní označení: EPOFIX HARDENER
· Číslo výrobku: 1232-B, 1232-H, 1232-SP
· Číslo CAS: 112-24-3
· Číslo ES: 203-950-6
· Indexové číslo: 612-059-00-5
· 1.2 Příslušná určená použití látky nebo směsi a nedoporučená použití
   Další relevantní informace nejsou k dispozici.
· Použití látky / přípravku Laboratorní chemikálie
· 1.3 Podrobné údaje o dodavateli bezpečnostního listu
· Identifikace výrobce/dovozce:
   Electron Microscopy Sciences
   1560 Industry Road
   USA-Hatfield, PA 19440
   Tel: 215-412-8400 Fax: 215-412-8450
   email: sgkcck@aol.com
   www.emsdiasum.com
· Obor poskytující informace: Product safety department
· 1.4 Telefonní číslo pro naléhavé situace:
   ChemTrec 1-800-424-9300 Contract CCN7661
   1-703-527-3887

ODDÍL 2: Identifikace nebezpečnosti

· 2.1 Klasifikace látky nebo směsi
   · Klasifikace v souladu s nařízením (ES) č. 1272/2008
   
     GHS05 korozivita

     Skin Corr. 1B H314 Způsobuje těžké poleptání kůže a poškození očí.

   GHS07

     Acute Tox. 4 H312 Zdraví škodlivý při styku s kůží.
     Skin Sens. 1 H317 Může vyvolat alergickou kožní reakci.

     Aquatic Chronic 3 H412 Škodlivý pro vodní organismy, s dlouhodobými účinky.

· 2.2 Prvky označení
   · Označování v souladu s nařízením (ES) č. 1272/2008 Látka je klasifikována a označena podle nařízení CLP.
   · Výstražné symboly nebezpečnosti

     GHS05 GHS07

· Signální slovo Nebezpečí
# Bezpečnostní list

**podle 1907/2006/ES, Článek 31**

Datum vydání: 08.10.2018  
Revize: 08.10.2018

## Obchodní označení: EPOFIX HARDENER

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<th>Údaje</th>
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<td>Datum vydání:</td>
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<td>Revize:</td>
</tr>
<tr>
<td>Obchodní označení:</td>
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### Nebezpečné komponenty k etiketování:

- 2,2\(^{-}\)-(ethylendiimino)di(ethan-1-amin)

### Standardní věty o nebezpečnosti

- **H312** Zdraví škodlivý při styku s kůží.
- **H314** Způsobuje těžké poleptání kůže a poškození očí.
- **H317** Může vyvolat alergickou kožní reakci.
- **H412** Škodlivý pro vodní organismy, s dlouhodobými účinky.

### Pokyny pro bezpečné zacházení

- **P303+P361+P353** PŘI STYKU S KŮŽÍ (nebo s vlasy): Veškeré kontaminované části oděvu okamžitě svlékněte. Opláchněte kůži vodou/osprchujte.
- **P310** Okamžitě volejte TOXIKOLOGICKÉ INFORMAČNÍ STŘEDISKO/lékaře.
- **P321** Odborné ošetření (viz na tomto štítku).
- **P362+P364** Kontaminovaný oděv svlékněte a před opětovným použitím vyperte.
- **P405** Skladujte uzamčené.
- **P501** Obsah/nádobu likvidujte v souladu s místními/rezionalními/národními/mezinárodními předpisy.

### Další nebezpečnost

### Výsledky posouzení PBT a vPvB

- **PBT:** Nedá se použít.
- **vPvB:** Nedá se použít.

### Složení/informace o složkách

#### 3.1 Chemická charakteristika: Látky

- Číslo CAS: 112-24-3
- 2,2\(^{-}\)-(ethylendiimino)di(ethan-1-amin)
- Identifikační číslo(čísla)
- Číslo ES: 203-950-6
- Indexové číslo: 612-059-00-5

### Pokyny pro první pomoc

#### 4.1 Popis první pomoci

- Všeobecné pokyny:
  - Neprodleně odstranit části odevů znečištěné produktem.
- Příznaky otravy se mohou projevit až po mnoha hodinách, proto je nutný lékařský dohled nejméně 48 hodin po nehodě.
- Při nadýchaní:
  - Bohatý přívod čerstvého vzduchu a pro jistotu vyhledejte lékaře.
  - Při bezvědomí uložit a přepravit ve stabilní poloze na boku.
- Při styku s kůží:
  - Ihned omýt vodou a mýdlem a dobře opláchnout.
- Při zasažení očí:
  - Otevřené oči po více minut oplachovat pod tekoucí vodou a poradit se s lékařem.
- Při požití:
  - Bohatě zapijte vodou a dýchat čerstvý vzduch. Neprodleně vyhledejte lékaře.

#### 4.2 Nejdůležitější akutní a opožděné symptomy a účinky

- Další relevantní informace nejsou k dispozici.

#### 4.3 Pokyn týkající se okamžité lékařské pomoci a zvláštního ošetření

Další relevantní informace nejsou k dispozici.
**ODDÍL 5: Opatření pro hašení požáru**

- **5.1 Hasiva**  
  - **Vhodná hasiva:** Způsob hašení příspůsobit podmínkám v okolí.

- **5.2 Zvláštní nebezpečnost vyplývající z látky nebo směsi**  
  - Další relevantní informace nejsou k dispozici.

- **5.3 Pokyny pro hasiče**  
  - **Zvláštní ochranné prostředky pro hasiče:** Nejsou nutné žádná zvláštní opatření.

**ODDÍL 6: Opatření v případě náhodného úniku**

- **6.1 Opatření na ochranu osob, ochranné prostředky a nouzové postupy**  
  - Nosit ochrannou výstroj. Nechráněné osoby se nesmí přibližovat.

- **6.2 Opatření na ochranu životního prostředí**  
  - Při vniknutí do kanalizace nebo vodního toku informovat příslušné orgány.  
  - Zřídit velkým množstvím vody.  
  - Nenechat proniknout do kanalizace/ povrchových vod/podzemních vod.

- **6.3 Metody a materiál pro omezení úniku a pro čištění**  
  - Sebrat s materiály, vážící kapaliny (písek, štěrkový písek, pojídla kyselin, universální pojídla, pílina).  
  - Použít neutralizační prostředky.

- **6.4 Odkaz na jiné oddíly**  
  - Informace o bezpečnému zacházení viz kapitola 7.  
  - Informace o osobní ochranné výstroji viz kapitola 8.  
  - Informace k odstranění viz kapitola 13.

**ODDÍL 7: Zacházení a skladování**

- **7.1 Opatření pro bezpečné zacházení**  
  - Na pracovišti zabezpečit dobré větrání a odsávání.  
  - Zamezit vytváření aerosolů.

- **7.2 Podmínky pro bezpečné skladování látek a směsí včetně neslučitelných látek a směsí**  
  - **Pokyny pro skladování:**  
    - Požadavky na skladovací prostory a nádoby: Žádné zvláštní požadavky.  
    - **Upozornění k hromadnému skladování:** Není nutné.

- **7.3 Specifické konečné / specifická konečná použití**  
  - Další relevantní informace nejsou k dispozici.

**ODDÍL 8: Omezování expozice / osobní ochranné prostředky**

- **8.1 Kontrolní parametry**  
  - **Kontrolní parametry:** Odpadá.

- **8.2 Omezování expozice**  
  - **Osobní ochranné prostředky:**  
    - **Všeobecná ochranná a hygienická opatření:** Zdržovat od potravin, nápojů a krmiv.  
    - Zašpiněné, nasáknuté šaty ihned vysvléci.
Bezpečnostní list
podle 1907/2006/ES, Článek 31

Datum vydání: 08.10.2018
Revize: 08.10.2018

Obchodní označení: EPOFIX HARDENER

Před přestávkami a po práci umýt ruce.
Zamezit styku s pokožkou a zrakem.

- Ochrana dýchacích orgánů:
Při krátkodobém nebo nízkém zatížení použít dýchací přístroj s filtretem, při intenzivním nebo delším zatížení se musí použít dýchací přístroj nezávislý na okolním vzduchu.

- Ochrana rukou:

Ochranné rukavice

Materiál rukavic musí být nepropustný a odolný proti produktu / látce / směsi.
Vzhledem k tomu, že chybí testy, není možné doporučit materiál rukavic pro produkt / přípravek / chemickou směs.
Výběr materiálu rukavic provede podle času průniku, permeability a degradace.

- Materiál rukavic

Správný výběr rukavic je závislý jen na materiálu, ale také na dalších kritériích, která se liší podle výrobce.

- Doba průniku materiálem rukavic

Je nutno u výrobce rukavic zjistit a dodržovat přesné časy průniku materiálem ochranných rukavic.

- Ochrana očí:

Uzavřené ochranné brýle

ODDÍL 9: Fyzikální a chemické vlastnosti

- 9.1 Informace o základních fyzikálních a chemických vlastnostech

- Všeobecné údaje

- Vzhled:

<table>
<thead>
<tr>
<th>Skupenství:</th>
<th>Tekutina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barva:</td>
<td>Světležlutá</td>
</tr>
<tr>
<td>Zápach:</td>
<td>Aminovitý</td>
</tr>
<tr>
<td>Prachová hodnota zápachu:</td>
<td>Není určeno.</td>
</tr>
</tbody>
</table>

- Hodnota pH: | Není určeno. |

- Změna stavu

| Bod tání/bod tuhlnotí: | 12 °C |
| Počáteční bod varu a rozmezí bodu varu: | ~278 °C |

- Bod vzplanutí: | 135 °C |

- Hořlavost (pevné látky, plyny): | Nedá se použít. |

- Zápalná teplota: | 335 °C |

- Teplota rozkladu: | Není určeno. |

- Teplota samovznícení: | Není určeno. |

- Výbušné vlastnosti: | U produktu nehrozí nebezpečí exploze. |

- Meze výbušnosti:

| Dolní mez: | Není určeno. |
| Horní mez: | Není určeno. |

- Tlak páry při 20 °C: | 0,01 hPa |
# Obchodní označení: EPOFIX HARDENER

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hustota při 20 °C</td>
<td>0,982 g/cm³</td>
</tr>
<tr>
<td>Relativní hustota</td>
<td>Není určeno.</td>
</tr>
<tr>
<td>Hustota páry</td>
<td>Není určeno.</td>
</tr>
<tr>
<td>Rychlost odpařování</td>
<td>Není určeno.</td>
</tr>
<tr>
<td>Rozpustnost ve / směšitelnost s vodou</td>
<td>Úplně mísitelná.</td>
</tr>
<tr>
<td>Rozdělovací koeficient: n-oktanol/voda</td>
<td>Není určeno.</td>
</tr>
<tr>
<td>Viskozita:</td>
<td></td>
</tr>
<tr>
<td>Dynamicky</td>
<td>Není určeno.</td>
</tr>
<tr>
<td>Kinematicky</td>
<td>Není určeno.</td>
</tr>
<tr>
<td>Obsah ředidel:</td>
<td></td>
</tr>
<tr>
<td>VOC (EC)</td>
<td>0,00 %</td>
</tr>
<tr>
<td>Obsah netěkavých složek</td>
<td>0,0 %</td>
</tr>
<tr>
<td>9.2 Další informace</td>
<td>Další relevantní informace nejsou k dispozici.</td>
</tr>
</tbody>
</table>

## ODDÍL 10: Stálost a reaktivita

- **10.1 Reaktivita** Další relevantní informace nejsou k dispozici.
- **10.2 Chemická stabilita**
  - Termický rozklad / Podmínky, kterých je nutno se vyvarovat: Nedochází k rozkladu při doporučeném způsobu použití.
- **10.3 Možnost nebezpečných reací**
  - Žádné nebezpečné reakce nejsou známy.
- **10.4 Podmínky, kterým je třeba zabránit** Další relevantní informace nejsou k dispozici.
- **10.5 Neslučitelné materiály** Další relevantní informace nejsou k dispozici.
- **10.6 Nebezpečné produkty rozkladu** Nejsou známy žádné nebezpečné produkty při rozkladu.

## ODDÍL 11: Toxikologické informace

- **11.1 Informace o toxikologických účincích**
- **Akutní toxicita**
  - Zdraví škodlivý při styku s kůží.
- **Zařazení relevantní hodnoty LD/LC 50:**

<table>
<thead>
<tr>
<th>Hodnota</th>
<th>LD50 (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orálně</td>
<td>2,500 mg/kg (rat)</td>
</tr>
<tr>
<td>Pokožkou</td>
<td>805 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- **Primární dráždivé účinky:**
  - Žárovost / dráždivost pro kůži
  - Žárovost / dráždivost pro dýchací cesty
  - Senzibilizace dýchacích cest / senzibilizace kůže
- **Senzibilizace dýchacích cest / senzibilizace kůže**
  - Může vyvolat alergickou kožní reakci.
- **Účinky CMR (karcinogenita, mutagenita a toxicita pro reprodukci)**
  - Mutagenita v zárodečných buňkách Na základě dostupných údajů nejsou kritérium pro klasifikaci splněna.
  - Karcinogenita Na základě dostupných údajů nejsou kritérium pro klasifikaci splněna.
  - Toxicita pro reprodukci Na základě dostupných údajů nejsou kritérium pro klasifikaci splněna.
**ODDÍL 12: Ekologické informace**

- **Toxicta**
- **Aquatická toxicita:** Další relevantní informace nejsou k dispozici.
- **Perzistence a rozložitelnost** Další relevantní informace nejsou k dispozici.
- **Bioakumulační potenciál** Další relevantní informace nejsou k dispozici.
- **Mobilita v půdě** Další relevantní informace nejsou k dispozici.
- **Ekotoxické účinky:**
  - **Poznámka:** Škodlivý pro ryby.
  - Další ekologické údaje:
  - **Všeobecná upozornění:**
    - Třída ohrožení vody 2 (zařazení v listině): ohrožuje vodu
    - Nesmí vniknout do spodní vody, povodí nebo kanalizace.
    - Nesmí nezředěno nebo nezneutralizováno proniknout do odpadních vod nebo jízku.
    - Ohrožuje pitnou vodu už při proniknutí malého množství do zeminy.
    - Škodlivá pro vodní organismy
  - **12.5 Výsledky posouzení PBT a vPvB**
  - **PBT:** Nedá se použít.
  - **vPvB:** Nedá se použít.
  - **12.6 Jiné nepříznivé účinky** Další relevantní informace nejsou k dispozici.

**ODDÍL 13: Pokyny pro odstraňování**

- **13.1 Metody nakládání s odpady**
  - **Doporučení:** Nesmí se odstraňovat společně s odpady z domácností. Nepřipustit únik do kanalizace.
  - **Kontaminované obaly:**
  - **Doporučení:** Odstranění podle příslušných předpisů.
  - **Doporučený čistící prostředek:** Voda, případně s příslušnými čistícími prostředky.

**ODDÍL 14: Informace pro přepravu**

- **14.1 UN číslo**
  - **ADR, IMDG, IATA** UN2259

- **14.2 Oficiální (OSN) pojmenování pro přepravu**
  - **ADR**
  - **IMDG, IATA** 2259 TRIETHYLENTETRAMIN

  TRIETHYLENETETRAMINE
Bezpečnostní list
podle 1907/2006/ES, Článek 31

Datum vydání: 08.10.2018
Revize: 08.10.2018

Obchodní označení: EPOFIX HARDENER

14.3 Třída/třídy nebezpečnosti pro přepravu
- ADR, IMDG, IATA

<table>
<thead>
<tr>
<th>Třída</th>
<th>8 Žíravé látky</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etiketa</td>
<td>8</td>
</tr>
</tbody>
</table>

14.4 Obalová skupina
- ADR, IMDG, IATA

| Obalová skupina | II |

14.5 Nebezpečnost pro životní prostředí
- Nedá se použít.

14.6 Zvláštní nebezpečnostní opatření pro uživatele
- Varování: Žíravé látky
- Kemlerovo číslo: 80
- EMS-skupina: 8-05
- Segregation groups: Alkalis
- Stowage Category: B
- Stowage Code: SW2 Clear of living quarters.
- Segregation Code: SG35 Stow "separated from" acids.

14.7 Hromadná přeprava podle přílohy II úmluvy MARPOL a předpisu IBC
- Nedá se použít.

15.1 Předpisy týkající se bezpečnosti, zdraví a životního prostředí/specifické právní předpisy týkající se látky nebo směsi
- Rady 2012/18/EU
- Nebezpečné látky jmenovitě uvedené - PŘÍLOHA I Látka neobsažena.
- Rady (ES) č. 1907/2006 PŘÍLOHA XVII Omezující podmínky: 3
- 15.2 Posouzení chemické bezpečnosti: Posouzení chemické bezpečnosti nebylo provedeno.
**ODDÍL 16: Další informace**

Údaje se opírají o dnešní stav našich vědomostí, nepředstavují však záruku vlastností produktu a nevznikají tak žádné smluvní právní vztahy.

- **Zkratky a akronymy:**
  - 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
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - 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
  - Acute Tox. 4: Akutní toxicita – Kategorie 4
  - Skin Corr. 1B: Žíravost/dráždivost pro kůži – Kategorie 1B
  - Skin Sens. 1: Senzibilitace kůže – Kategorie 1
  - Aquatic Chronic 3: Nebezpečnost pro vodní prostředí - dlouhodobá nebezpečnost pro vodní prostředí – Kategorie 3
Veiligheidsinformatieblad
volgens 1907/2006/EG, Artikel 31

datum van de druk: 08.10.2018

RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

- 1.1 Productidentificatie
  - Handelsnaam: EPOFIX HARDENER
  - Artikelnummer: 1232-B, 1232-H, 1232-SP
  - CAS-nummer: 112-24-3
  - EC-nummer: 203-950-6
  - Catalogusnummer: 612-059-00-5

- 1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik
  - Geen verdere relevante informatie verkrijgbaar.

- 1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad
  - Fabrikant/leverancier:
    Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: sgkcck@aol.com
    www.emsdiasum.com
  - Aurion
    Binnenhaven 5
    6709 PD Wageningen
    The Netherlands
    Tel: 31 317 415094
    Fax: 31 317 415955
    email: info@aurion.nl

- 1.4 Telefoonnummer voor noodgevallen:
  - ChemTrec 1-800-424-9300 Contract CCN7661
  - 1-703-527-3887

RUBRIEK 2: Identificatie van de gevaren

- 2.1 Indeling van de stof of het mengsel
  - Indeling overeenkomstig Verordening (EG) nr. 1272/2008
    - GHS05 corrosie
      Skin Corr. 1B H314 Veroorzaakt ernstige brandwonden en oogletsel.
      GHS07
      Acute Tox. 4 H312 Schadelijk bij contact met de huid.
      Skin Sens. 1 H317 Kan een allergische huidreactie veroorzaken.
      Aquatic Chronic 3 H412 Schadelijk voor in het water levende organismen, met langdurige gevolgen.

- 2.2 Etiketteringselementen
  - Etikettering overeenkomstig Verordening (EG) nr. 1272/2008
    De stof product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.

(Vervolg op blz. 2)
Handelsnaam: EPOFIX HARDENER

· Gevarenpictogrammen

GHS05  GHS07

· Signaalwoord Gevaar

· Gevaaraanduidende componenten voor de etikettering:
  1,8-diamino-3,6-diazo-octaan

· Gevaaraanduidingen
  H312 Schadelijk bij contact met de huid.
  H314 Veroorzaakt ernstige brandwonden en oogletsel.
  H317 Kan een allergische huidreactie veroorzaken.
  H412 Schadelijk voor in het water levende organismen, met langdurige gevolgen.

· Veiligheidsaanbevelingen
  P305+P351+P338 BIJ CONTACT MET DE OGEN: voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.
  P310 Onmiddellijk een ANTIGIFCENTRUM/arts raadplegen.
  P321 Specifieke behandeling vereist (zie op dit etiket).
  P362+P364 Verontreinigde kleding uittrekken en wassen alvorens deze opnieuw te gebruiken.
  P405 Achter slot bewaren.
  P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.

· 2.3 Andere gevaren
  · Resultaten van PBT- en zPzB-beoordeling
    · PBT: Niet bruikbaar.
    · zPzB: Niet bruikbaar.

RUBRIEK 3: Samenstelling en informatie over de bestanddelen

· 3.1 Chemische karakterisering: Stoffen
  · CAS-Nr. omschrijving
    112-24-3 1,8-diamino-3,6-diazo-octaan
  · Identificatienummer(s)
  · EC-nummer: 203-950-6
  · Catalogusnummer: 612-059-00-5

RUBRIEK 4: Eerstehulpmaatregelen

· 4.1 Beschrijving van de eerstehulpmaatregelen
  · Algemene informatie:
    Verontreinigde kleding onmiddellijk uittrekken.
    Het is mogelijk dat vergiftigingssymptomen pas na vele uren optreden. Om deze reden is medische controle gedurende minstens 48 uur na een ongeval noodzakelijk.
  · Na het inademen:
    Veel verse lucht toedienen en voor alle zekerheid een arts raadplegen.
    Bij bewusteloosheid ligging en vervoer in stabiele zijligging.
  · Na huidcontact:
    Onmiddellijk met water en zeep afwassen en goed naspoelen.
  · Na oogcontact:
    Ogen met open ooglid een aantal minuten onder stromend water afspoelen en dokter raadplegen.

(Vervolg op blz. 3)
Handelsnaam: EPOFIX HARDENER

- Na inslikken: Drink zeer veel water en voer verse lucht aan. Onmiddellijk een dokter waarschuwen.
- 4.2 Belangrijkste acute en uitgestelde symptomen en effecten Geen verdere relevante informatie verkrijgbaar.
- 4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 5: Brandbestrijdingsmaatregelen

- 5.1 Blusmiddelen
- Geschikte blusmiddelen: Brandblusmaatregelen op omgeving afstemmen.
- 5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt
Geen verdere relevante informatie verkrijgbaar.
- 5.3 Advies voor brandweerlieden
- Speciale beschermende kleding: Geen bijzondere maatregelen nodig.

RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- 6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures
Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.
- 6.2 Milieuvorzorgsmaatregelen:
Bij indringen in afvalwater of riolering moet de bevoegde instantie gewaarschuwd worden.
Met veel water verdunnen.
Niet in de riolering/oppervlaktewater laten terechtkomen.
- 6.3 Insleutings- en reinigingsmethoden en -materiaal:
Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.
Neutralisatiemiddel gebruiken.
Besmet materiaal zoals afval volgens punt 13 verwijderen.
Voor voldoende ventilatie zorgen.
- 6.4 Verwijzing naar andere rubrieken
Informatie inzake veilig gebruik - zie hoofdstuk 7.
Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.
Informatie inzake berging - zie hoofdstuk 13.

RUBRIEK 7: Hantering en opslag

- 7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel
Voor goede ventilatie/afzuiging op de werkplaatsen zorgen.
Aërosolvorming vermijden.
- Informatie m.b.t. brand- en ontploffingsgevaar: Geen bijzondere maatregelen noodzakelijk.
- 7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten
- Op slag:
- Eise ten opzichte van opslagruimte en tanks: Geen bijzondere eisen.
- Informatie m.b.t. gezamenlijke opslag: Niet nodzakelijk.
- Verdere inlichtingen over eise m.b.t. de opslag: Tanks ondoorlopend gesloten houden.
- 7.3 Specifieke eindgebruik Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- Aanvullende gegevens m.b.t. de inrichting van technische installaties: Geen aanvullende gegevens. Zie 7.
- 8.1 Controleparameters
- Bestanddelen met grenswaarden die m.b.t. de werkruiint in acht genomen moeten worden: Vervalt.
Veiligheidsinformatieblad
volgens 1907/2006/EG, Artikel 31

 datum van de druk: 08.10.2018
 Herziening van: 08.10.2018

**Handelsnaam: EPOFIX HARDENER**

- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.

- **8.2 Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**
  Verwijderd houden van eet- en drinkwaren.
  Verontreinigde kleding onmiddellijk uittrekken.
  Vóór de pauze en aan het einde van werktijd handen wassen.
  Aanraking met de ogen en de huid vermijden.
- **Ademhalingsbescherming:**
  Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingstoestel gebruiken.

- **Handbescherming:**

  Veiligheidshandschoenen

  Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.
  Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliën mengsel afgegeven worden.
  Kies handschoenmateriaal rekening houdend met de penetratietijd, de permeatietijden, de degradatie.

- **Handschoenmateriaal**
  De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitenmerken en verschilt van fabrikant tot fabrikant.

- **Toedringeringsstijd van het handschoenmateriaal**
  De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

- **Oogbescherming:**

  Nauw aansluitende veiligheidsbril

---

**RUBRIEK 9: Fysische en chemische eigenschappen**

- **9.1 Informatie over fysische en chemische basiseigenschappen**
- **Algemene gegevens**
- **Voorkomen:**
  - Vorm: Vloeistof
  - Kleur: Lichtgeel
  - Geur: Amine-achtig
  - Geurdrempelwaarde: Niet bepaald.
- **pH-waarde:**
  - Niet bepaald.

- **Toestandsverandering**
  - Smelt-/vriespunt: 12 ℃
  - Beginkookpunt en kooktraject: ~278 ℃

- **Vlampunt:** 135 ℃

- **Ontvlambaarheid (vast, gas):**
  - Niet bruikbaar.

- **Ontstekingstemperatuur:** 335 ℃
Handelsnaam: EPOFIX HARDENER

| · Ontledingstemperatuur:       | Niet bepaald.         |
| · Zelfontbrandingstemperatuur: | Niet bepaald.         |
| · Ontploffingseigenschappen:   | Het produkt is niet ontploffingsgevaarlijk. |
|   · Ontploffingsgrenzen:       |                       |
|     Onderste:                  | Niet bepaald.         |
|     Bovenste:                  | Niet bepaald.         |
| · Dampspanning bij 20 °C:      | 0,01 hPa              |
| · Dichtheid bij 20 °C:         | 0,982 g/cm³           |
| · Relatieve dichtheid         | Niet bepaald.         |
| · Dampdichtheid               | Niet bepaald.         |
| · Verdampingssnelheid          | Niet bepaald.         |
| · Oplosbaarheid in/mengbaarheid met Water: | Volledig mengbaar. |
| · Verdelingscoëfficiënt: n-octanol/water: | Niet bepaald.         |
| · Viscositeit                 |                       |
|     Dynamisch:                | Niet bepaald.         |
|     Kinematisch:              | Niet bepaald.         |
| · Oplosmiddelgehalte:         |                       |
|     VOC (EG)                  | 0,00 %                |
| · Gehalte aan vaste bestanddelen: | 0,0 %                |
| · 9.2 Overige informatie      | Geen verdere relevante informatie verkrijgbaar. |

RUBRIEK 10: Stabiliteit en reactiviteit

- 10.1 Reactiviteit Geen verdere relevante informatie verkrijgbaar.
- 10.2 Chemische stabilité
- Thermische afbraak / te vermijden omstandigheden: Geen afbraak bij gebruik volgens voorschrift.
- 10.3 Mogelijke gevaarlijke reacties Geen gevaarlijke reacties bekend.
- 10.4 Te vermijden omstandigheden Geen verdere relevante informatie verkrijgbaar.
- 10.5 Chemisch op elkaar inwerkende materialen: Geen verdere relevante informatie verkrijgbaar.
- 10.6 Gevaarlijke onledingsproducten: Geen gevaarlijke onbundingsprodukten bekend.

RUBRIEK 11: Toxicologische informatie

- 11.1 Informatie over toxicologische effecten
- Acute toxiciteit
  Schadelijk bij contact met de huid.
- Indelingsrelevantie LD/LC50-waarden:

<table>
<thead>
<tr>
<th>112-24-3 1,8-diamino-3,6-diazaoctaan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oraal LD50</td>
</tr>
<tr>
<td>Dermaal LD50</td>
</tr>
</tbody>
</table>

- Primaire aandoening:
- Huidcorrosie/irritatie
  Veroorzaakt ernstige brandwonden en oogletsel.
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Herziening van: 08.10.2018

Handelsnaam: EPOFIX HARDENER

- Ernstig oogletsel/oogirritatie
  Veroorzaakt ernstige brandwonden en oogletsel.
- Sensibilisatie van de luchtwegen/de huid
  Kan een allergische huidreactie veroorzaken.
- CMR-effecten (kankerverwekkendheid, mutageeniteit en giftigheid voor de voortplanting)
  - Mutageeniteit in geslachtscellen Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
  - Kankerverwekkendheid Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- Giftigheid voor de voortplanting Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- STOT bij eenmalige blootstelling Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- STOT bij herhaalde blootstelling Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- Gevaar bij inademing Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

RUBRIEK 12: Ecologische informatie

- 12.1 Toxiciteit
  - Aquatische toxiciteit: Geen verdere relevante informatie verkrijgbaar.
- 12.2 Persistentie en afbreekbaarheid Geen verdere relevante informatie verkrijgbaar.
- 12.3 Bioaccumulatie Geen verdere relevante informatie verkrijgbaar.
- 12.4 Mobiliteit in de bodem Geen verdere relevante informatie verkrijgbaar.
- Ecotoxische effecten:
  - Opmerking: Schadelijk voor vissen.
  - Verdere ecologische informatie:
    - Algemene informatie:
      Waterbezwaarlijkheid (NL): A(3) schadelijk voor in water levende organismen kan in het aquatische milieu op lange termijn schadelijke effecten veroorzaken
      Gevaar voor water klasse 2 (D) (Lijstclassificatie): gevaar voor water
    - Persistente en afbreekbare component (D) (Lijstclassificatie): niet afbreekbaar
    - Mobiel in grondwater
    - Schadelijk voor fijnleidende waterorganismen
- 12.5 Resultaten van PBT- en zPzB-bepaling
  - PBT: Niet bruikbaar.
  - zPzB: Niet bruikbaar.
- 12.6 Andere schadelijke effecten Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 13: Instructies voor verwijdering

- 13.1 Afvalverwerkingsmethoden
  - Aanbeveling: Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
  - Niet gereinigde verpakkingen:
  - Aanbeveling: Afvalverwijdering volgens overheidsbepalingen.
  - Aanbevolen reinigingsmiddel: Water, eventueel met toevoeging van reinigingsmiddelen.

RUBRIEK 14: Informatie met betrekking tot het vervoer

- 14.1 VN-nummer
  - ADR, IMDG, IATA UN2259
- 14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN
  - ADR 2259 TRIETHYLEENTETRAMINE
**Handelsnaam:** EPOFIX HARDENER

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### 14.3 Transportgevarenklasse(n)
- IMDG, IATA

### 14.4 Verpakkingsgroep:
- ADR, IMDG, IATA

<table>
<thead>
<tr>
<th>Klasse</th>
<th>8 Bijtende stoffen</th>
</tr>
</thead>
</table>

### 14.5 Milieugevaren:
- ADR, IMDG, IATA

- Niet bruikbaar.

### 14.6 Bijzondere voorzorgen voor de gebruiker
- Kemler-getal: 80
- EMS-nummer: 8-05
- Segregation groups: Alkalis
- Stowage Category: B
- Stowage Code: SW2 Clear of living quarters.
- Segregation Code: SG35 Stow "separated from" acids.

### 14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code
- ADR
- Beperkte hoeveelheden (LQ): 1L
- Excepted quantities (EQ): Code: E2

| Maximum net quantity per inner packaging: 30 ml |
| Maximum net quantity per outer packaging: 500 ml |

### 15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel

- **SZW-lijst van kankerverwekkende stoffen**
  De stof is niet aanwezig.

- **SZW-lijst van mutagene stoffen**
  De stof is niet aanwezig.

- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**
  De stof is niet aanwezig.
Handelsnaam: EPOFIX HARDENER

(Vervolg van blz. 7)

- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling
  De stof is niet aanwezig.

- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding
  De stof is niet aanwezig.

- Richtlijn 2012/18/EU
  - Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I De stof is niet aanwezig.
  - Verordening (EG) nr. 1907/2006 BIJLAGE XVII Beperkingsvoorwaarden: 3

- Nationale voorschriften:
  - Gevaarklasse v. water:
    Waterbezaarlijkheid (NL): A(3) schadelijk voor in water levende organismen kan in het aquatische milieu op lange termijn schadelijke effecten veroorzaken
  - 15.2 Chemischeveiligheidsbeoordeling: Een chemische veiligheidsbeoordeling is niet uitgevoerd.

**RUBRIEK 16: Overige informatie**

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

- **Afkortingen en acroniemen:**
  - 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
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LDS0: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Acute Tox. 4: Acute toxiciteit – Categorie 4
  - Skin Corr. 1B: Huidcorrosie/-irritatie – Categorie 1B
  - Skin Sens. 1: Sensibilisatie van de huid – Categorie 1
  - Aquatic Chronic 3: Gevaar voor het aquatisch milieu - aquatisch gevaar op lange termijn – Categorie 3
RUBRIQUE 1: Identification de la substance/du mélange et de la société/l'entreprise

- 1.1 Identificateur de produit
  - Nom du produit: EPOFIX HARDENER
  - Code du produit: 1232-B, 1232-H, 1232-SP
  - No CAS: 112-24-3
  - Numéro CE: 203-950-6
  - Numéro index: 612-059-00-5
- 1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées
  Pas d'autres informations importantes disponibles.
- 1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité
  - Producteur/fournisseur: Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: sgkck@aol.com
    www.emsdiasum.com
  - Service chargé des renseignements: Product safety department
  - 1.4 Numéro d'appel d'urgence:
    ChemTrec 1-800-424-9300 Contract CCN7661
    1-703-527-3887

RUBRIQUE 2: Identification des dangers

- 2.1 Classification de la substance ou du mélange
  - Classification selon le règlement (CE) n° 1272/2008
    GHS05 corrosion
    Skin Corr. 1B  H314  Provoque des brûlures de la peau et des lésions oculaires graves.
    GHS07
    Acute Tox. 4  H312  Nocif par contact cutané.
    Skin Sens. 1  H317  Peut provoquer une allergie cutanée.
    Aquatic Chronic 3  H412  Nocif pour les organismes aquatiques, entraîne des effets néfastes à long terme.
- 2.2 Éléments d'étiquetage
  - Étiquetage selon le règlement (CE) n° 1272/2008 La substance est classifiée et étiquetée selon le règlement CLP.
  - Pictogrammes de danger
    GHS05  GHS07

  - Mention d'avertissement Danger
Nom du produit: EPOFIX HARDENER

- Composants dangereux déterminants pour l'étiquetage:
  3,6-diazaoctane-1,8-diamine

- Mentions de danger
  H312 Nocif par contact cutané.
  H314 Provoque des brûlures de la peau et des lésions oculaires graves.
  H317 Peut provoquer une allergie cutanée.
  H412 Nocif pour les organismes aquatiques, entraîne des effets néfastes à long terme.

- Conseils de prudence
  P305+P351+P338 EN CAS DE CONTACT AVEC LES YEUX: rincer avec précaution à l’eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
  P310 Appeler immédiatement un CENTRE ANTIPOISON/un médecin.
  P321 Traitement spécifique (voir sur cette étiquette).
  P362+P364 Enlever les vêtements contaminés et les laver avant réutilisation.
  P405 Garder sous clef.
  P501 Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale/internationale.

- 2.3 Autres dangers
- Résultats des évaluations PBT et vPvB
  - PBT: Non applicable.
  - vPvB: Non applicable.

RUBRIQUE 3: Composition/informations sur les composants

- 3.1 Caractérisation chimique: Substances
  - No CAS Désignation
    112-24-3 3,6-diazaoctane-1,8-diamine
  - Code(s) d'identification
    - Numéro CE: 203-950-6
    - Numéro index: 612-059-00-5

RUBRIQUE 4: Premiers secours

- 4.1 Description des premiers secours
  - Remarques générales:
    Enlever immédiatement les vêtements contaminés par le produit.
    Les symptômes d’intoxication peuvent apparaître après de nombreuses heures seulement; une surveillance médicale est donc nécessaire au moins 48 heures après un accident.
  - Après inhalation:
    Donner de l’air frais en abondance et consulter un médecin pour plus de sécurité.
    En cas d’inconscience, coucher et transporter la personne en position latérale stable.
  - Après contact avec la peau: Laver immédiatement à l’eau et au savon et bien rincer.
  - Après contact avec les yeux:
    Rincer les yeux, pendant plusieurs minutes, sous l’eau courante en écartant bien les paupières et consulter un médecin.
  - Après ingestion: Boire de l’eau en abondance et donner de l’air frais. Consulter immédiatement un médecin.
- 4.2 Principaux symptômes et effets, aigus et différés Pas d’autres informations importantes disponibles.
RUBRIQUE 5: Mesures de lutte contre l'incendie

- 5.1 Moyens d'extinction
  - Moyens d'extinction: Adapter les mesures d'extinction d'incendie à l'environnement.

- 5.2 Dangers particuliers résultant de la substance ou du mélange
  - Pas d'autres informations importantes disponibles.

- 5.3 Conseils aux pompiers
  - Equipement spécial de sécurité: Aucune mesure particulière n'est requise.

RUBRIQUE 6: Mesures à prendre en cas de dispersion accidentelle

- 6.1 Précautions individuelles, équipement de protection et procédures d'urgence
  - Porter un équipement de sécurité. Eloigner les personnes non protégées.

- 6.2 Précautions pour la protection de l'environnement:
  - En cas de pénétration dans les eaux ou les égouts, avertir les autorités compétentes.
  - Diluer avec beaucoup d'eau.
  - Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.

- 6.3 Méthodes et matériel de confinement et de nettoyage:
  - Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).
  - Utiliser un neutralisant.
  - Évacuer les matériaux contaminés en tant que déchets conformément au point 13.
  - Assurer une aération suffisante.

- 6.4 Référence à d'autres rubriques
  - Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.
  - Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.
  - Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

RUBRIQUE 7: Manipulation et stockage

- 7.1 Précautions à prendre pour une manipulation sans danger
  - Veiller à une bonne ventilation/aspiration du poste de travail.
  - Éviter la formation d'aérosols.

- Préventions des incendies et des explosions: Aucune mesure particulière n'est requise.

- 7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités
  - Stockage:
    - Exigences concernant les lieux et conteneurs de stockage: Aucune exigence particulière.
    - Indications concernant le stockage commun: Pas nécessaire.
    - Autres indications sur les conditions de stockage: Tenir les emballages hermétiquement fermés.

- 7.3 Utilisation(s) finale(s) particulière(s): Pas d'autres informations importantes disponibles.

RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

- Indications complémentaires pour l'agencement des installations techniques:
  - Sans autre indication, voir point 7.

- 8.1 Paramètres de contrôle
  - Composants présentant des valeurs-seuil à surveiller par poste de travail: Néant
Remarques supplémentaires:
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.

8.2 Contrôles de l'exposition

- Équipement de protection individuel:
- Mesures générales de protection et d'hygiène:
  Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.
  Retirer immédiatement les vêtements souillés ou humectés.
  Se laver les mains avant les pauses et en fin de travail.
  Eviter tout contact avec les yeux et avec la peau.
- Protection respiratoire:
  En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.

Protection des mains:

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation. A cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée. Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

Matériau des gants
Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.

Temps de pénétration du matériau des gants
Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

Protection des yeux:

Lunettes de protection hermétiques

RUBRIQUE 9: Propriétés physiques et chimiques

9.1 Informations sur les propriétés physiques et chimiques essentielles

- Indications générales
  - Aspect:
  - Forme: Liquide
  - Couleur: Jaune clair
  - Odor: Aminée
  - Seuil olfactif: Non déterminé.
  - Valeur du pH: Non déterminé.

- Changement d'état
  - Point de fusion/point de congélation: 12 °C
  - Point initial d'ébullition et intervalle d'ébullition: ~278 °C

- Point d'éclair: 135 °C

- Inflammabilité (solide, gaz): Non applicable.

- Température d'inflammation: 335 °C
Nom du produit: EPOFIX HARDENER

- Température de décomposition: Non déterminé.
- Température d'auto-inflammabilité: Non déterminé.
- Propriétés explosives: Le produit n'est pas explosif.
- Limites d'explosion:
  - Inférieure: Non déterminé.
  - Supérieure: Non déterminé.
- Pression de vapeur à 20 °C: 0,01 hPa
- Densité à 20 °C: 0,982 g/cm³
- Densité relative: Non déterminé.
- Densité de vapeur: Non déterminé.
- Taux d'évaporation: Non déterminé.
- Solubilité dans/miscibilité avec l'eau: Entièrement miscible
- Coefficient de partage: n-octanol/eau: Non déterminé.
- Viscosité:
  - Dynamique: Non déterminé.
  - Cinématique: Non déterminé.
- Teneur en solvants:
  - VOC (CE): 0,00 %
- Teneur en substances solides: 0,0 %
- 9.2 Autres informations
  - Pas d'autres informations importantes disponibles.

RUBRIQUE 10: Stabilité et réactivité

- 10.1 Réactivité
  - Pas d'autres informations importantes disponibles.
- 10.2 Stabilité chimique
  - Décomposition thermique/conditions à éviter: Pas de décomposition en cas d'usage conforme.
- 10.3 Possibilité de réactions dangereuses: Aucune réaction dangereuse connue.
- 10.4 Conditions à éviter
  - Pas d'autres informations importantes disponibles.
- 10.5 Matières incompatibles: Pas d'autres informations importantes disponibles.
- 10.6 Produits de décomposition dangereux: Pas de produits de décomposition dangereux connus

RUBRIQUE 11: Informations toxicologiques

- 11.1 Informations sur les effets toxicologiques
  - Toxicité aiguë
    - Nocif par contact cutané.
- Valeurs LD/LC50 déterminantes pour la classification:

  112-24-3 3,6-diazaoctane-1,8-diamine

  Oral LD50 2,500 mg/kg (rat)
  Dermique LD50 805 mg/kg (lapin)

- Effet primaire d'irritation:
  - Corrosion cutanée/irritation cutanée
    - Provoque des brûlures de la peau et des lésions oculaires graves.
RUBRIQUE 12: Informations écologiques

12.1 Toxicité
- Toxicité aquatique: Pas d'autres informations importantes disponibles.
- 12.2 Persistance et dégradabilité: Pas d'autres informations importantes disponibles.
- 12.3 Potentiel de bioaccumulation: Pas d'autres informations importantes disponibles.
- 12.4 Mobilité dans le sol: Pas d'autres informations importantes disponibles.

12.5 Résultats des évaluations PBT et VPVB
- PBT: Non applicable.
- vPvB: Non applicable.
- 12.6 Autres effets néfastes: Pas d'autres informations importantes disponibles.

RUBRIQUE 13: Considérations relatives à l'élimination

13.1 Méthodes de traitement des déchets
- Recommandation: Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- Emballages non nettoyés:
- Recommandation: Evacuation conformément aux prescriptions légales.
- Produit de nettoyage recommandé: Eau, éventuellement avec des produits de nettoyage

RUBRIQUE 14: Informations relatives au transport

14.1 Numéro ONU
- ADR, IMDG, IATA: UN2259

(RUBRIQUE 12: Informations écologiques contiennent les informations suivantes:

- Toxicité aquatique:
  - Pas d'autres informations importantes disponibles.

- 12.2 Persistance et dégradabilité:
  - Pas d'autres informations importantes disponibles.

- 12.3 Potentiel de bioaccumulation:
  - Pas d'autres informations importantes disponibles.

- 12.4 Mobilité dans le sol:
  - Pas d'autres informations importantes disponibles.

- Remarque:
  - Nocif pour les poissons.

- Indications générales:
  - Catégorie de pollution des eaux 2 (D) (classification selon liste): polluant.
  - Ne pas laisser pénétrer dans la nappe phréatique, les eaux ou les canalisations.
  - Ne doit pas pénétrer à l'état non dilué ou non neutralisé dans les eaux usées ou le collecteur.
  - Danger pour l'eau potable dès fuite d'une petite quantité dans le sous-sol.
  - Nocif pour les organismes aquatiques.

- 12.5 Résultats des évaluations PBT et VPVB:
  - Non applicable.
  - Non applicable.

- 12.6 Autres effets néfastes:
  - Pas d'autres informations importantes disponibles.

(RUBRIQUE 13: Considérations relatives à l'élimination contient les informations suivantes:

- 13.1 Méthodes de traitement des déchets:
  - Recommandation: Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
  - Emballages non nettoyés:
  - Recommandation: Evacuation conformément aux prescriptions légales.
  - Produit de nettoyage recommandé: Eau, éventuellement avec des produits de nettoyage.

(RUBRIQUE 14: Informations relatives au transport contient les informations suivantes:

- 14.1 Numéro ONU:
  - ADR, IMDG, IATA: UN2259.)
**Nom du produit:** EPOFIX HARDENER

- **14.2 Désignation officielle de transport de l'ONU**
  - ADR
  - IMDG, IATA
  - 2259 TRIÉTHYLÈNETÉTRAMINE
  - TRIETHYLENETETRAMINE

- **14.3 Classe(s) de danger pour le transport**
  - ADR, IMDG, IATA

  - Classe: 8 Matières corrosives.
  - Étiquette: 8

- **14.4 Groupe d'emballage**
  - ADR, IMDG, IATA
  - II

- **14.5 Dangers pour l'environnement:**
  - Non applicable.

- **14.6 Précautions particulières à prendre par l'utilisateur**
  - Attention: Matières corrosives.
  - Indice Kemler: 80
  - No EMS: 8-05
  - Segregation groups: Alkalis
  - Stowage Category: B
  - Stowage Code: SW2 Clear of living quarters.
  - Segregation Code: SG35 Stow "separated from" acids.

- **14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC**
  - Non applicable.

- **Indications complémentaires de transport:**

  - **ADR**
    - Quantités limitées (LQ): 1L
    - Quantités exceptées (EQ): Code: E2
      - Quantité maximale nette par emballage intérieur: 30 ml
      - Quantité maximale nette par emballage extérieur: 500 ml
    - Catégorie de transport: 2
    - Code de restriction en tunnels: E

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

- **"Règlement type" de l'ONU:**
  - UN 2259 TRIÉTHYLÈNETÉTRAMINE, 8, II

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**RUBRIQUE 15: Informations relatives à la réglementation**

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
- **Directive 2012/18/UE**
- **Substances dangereuses désignées - ANNEXE I** la substance n’est pas comprise
Nom du produit: EPOFIX HARDENER

- RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII Conditions de limitation: 3
- 15.2 Évaluation de la sécurité chimique: Une évaluation de la sécurité chimique n'a pas été réalisée.

RUBRIQUE 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

- Acronymes et abréviations:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  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
  Acute Tox. 4: Toxicité aiguë – Catégorie 4
  Skin Corr. 1B: Corrosion cutanée/irritation cutanée – Catégorie 1B
  Skin Sens. 1: Sensibilisation cutanée – Catégorie 1
  Aquatic Chronic 3: Dangers pour le milieu aquatique- toxicité à long terme pour le milieu aquatique – Catégorie 3
ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens

- 1.1 Produktidentifikator
  - Handelsname: EPOFIX HARDENER
  - Artikelnummer: 1232-B, 1232-H, 1232-SP
  - CAS-Nummer: 112-24-3
  - EG-Nummer: 203-950-6
  - Indexnummer: 612-059-00-5

- 1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird
  Keine weiteren relevanten Informationen verfügbar.

- 1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt
  - Hersteller/Lieferant:
    - Electron Microscopy Sciences
    - 1560 Industry Road
    - USA-Hatfield, PA 19440
    - Tel: 215-412-8400  Fax: 215-412-8450
    - email: sgkck@aol.com
    - www.emsdiasum.com
  - Science Services GmbH
    - Unterhachinger Str. 75
    - 81737 München Germany
    - Tel: +49(0)89 18 93 668-0
    - safety@scienceservices.de
    - Deutschland: +49 (0)89 19240, 24h Giftnotruf München, www.toxinfo.org
    - Österreich: +43 1406 43 43, Gesundheit Österreich GmbH, 24 h
  - Auskunftgebender Bereich: Product safety department
  - 1.4 Notrufnummer:
    - ChemTrec 1-800-424-9300 Contract   CCN7661
    - 1-703-527-3887

ABSCHNITT 2: Mögliche Gefahren

- 2.1 Einstufung des Stoffs oder Gemischs
  - Einstufung gemäß Verordnung (EG) Nr. 1272/2008

  GHS05 Ätzwirkung
  Skin Corr. 1B   H314 Verursacht schwere Verätzungen der Haut und schwere Augenschäden.

  GHS07
  Acute Tox. 4    H312 Gesundheitsschädlich bei Hautkontakt.
  Skin Sens. 1    H317 Kann allergische Hautreaktionen verursachen.

(Fortsetzung auf Seite 2)
Handelsname: EPOFIX HARDENER

- Aquatic Chronic 3 H412 Schädlich für Wasserorganismen, mit langfristiger Wirkung.

2.2 Kennzeichnungselemente
- Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008
  Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.
- Gefahrenpiktogramme
  GHS05 GHS07

- Signalwort Gefahr
- Gefahrbestimmende Komponenten zur Etikettierung:
  3,6-Diazaoctan-1,8-diamin
- Gefahrenhinweise
  H312 Gesundheitsschädlich bei Hautkontakt.
  H314 Verursacht schwere Verätzungen der Haut und schwere Augenschäden.
  H317 Kann allergische Hautreaktionen verursachen.
  H412 Schädlich für Wasserorganismen, mit langfristiger Wirkung.
- Sicherheitshinweise
  P310 Sofort GIFTINFORMATIONSZENTRUM/Arzt anrufen.
  P321 Besondere Behandlung (siehe auf diesem Kennzeichnungsetikett).
  P362+P364 Kontaminierte Kleidung ausziehen und vor erneutem Tragen waschen.
  P405 Unter Verschluss aufbewahren.

2.3 Sonstige Gefahren
- Ergebnisse der PBT- und vPvB-Beurteilung
  - PBT: Nicht anwendbar.
  - vPvB: Nicht anwendbar.

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

- 3.1 Chemische Charakterisierung: Stoffe
- CAS-Nr. Bezeichnung
  112-24-3 3,6-Diazaoctan-1,8-diamin
- Identifikationsnummer(n)
  - EG-Nummer: 203-950-6
  - Indexnummer: 612-059-00-5

ABSCHNITT 4: Erste-Hilfe-Maßnahmen

- 4.1 Beschreibung der Erste-Hilfe-Maßnahmen
- Allgemeine Hinweise:
  Mit Produkt verunreinigte Kleidungsstücke unverzüglich entfernen.
  Vergiftungssymptome können erst nach vielen Stunden auftreten, deshalb ärztliche Überwachung mindestens 48 Stunden nach einem Unfall.

(Fortsetzung auf Seite 3)
Handelsname: EPOFIX HARDENER

Nach Einatmen:
Reichlich Frischluftzufuhr und sicherheitshalber Arzt aufsuchen. Bei Bewußtlosigkeit Lagerung und Transport in stabiler Seitenlage.

Nach Hautkontakt:
Sofort mit Wasser und Seife abwaschen und gut nachspülen.

Nach Augenkontakt:
Augen bei geöffnetem Lidspalt mehrere Minuten unter fließendem Wasser abspülen und Arzt konsultieren.

Nach Verschlucken:
Reichlich Wasser nachtrinken und Frischluftzufuhr. Unverzüglich Arzt hinzuziehen.

4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen
Keine weiteren relevanten Informationen verfügbar.

4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung
Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

5.1 Löschmittel
Geeignete Löschmittel: Feuerlöschmaßnahmen auf die Umgebung abstimmen.

5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren
Keine weiteren relevanten Informationen verfügbar.

5.3 Hinweise für die Brandbekämpfung
Besondere Schutzausrüstung: Keine besonderen Maßnahmen erforderlich.

ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren
Schutzausrüstung tragen. Ungeschützte Personen fernhalten.

6.2 Umweltschutzmaßnahmen:
Bei Eindringen in Gewässer oder Kanalisation zuständige Behörden benachrichtigen.
Mit viel Wasser verdünnen. Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.

6.3 Methoden und Material für Rückhaltung und Reinigung:
Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.
Für ausreichende Lüftung sorgen.

6.4 Verweis auf andere Abschnitte
Informationen zur sicheren Handhabung siehe Abschnitt 7.
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.
Informationen zur Entsorgung siehe Abschnitt 13.

ABSCHNITT 7: Handhabung und Lagerung

7.1 Schutzmaßnahmen zur sicheren Handhabung
Für gute Belüftung/Absaugung am Arbeitsplatz sorgen. Aerosolbildung vermeiden.

Hinweise zum Brand- und Explosionsschutz: Keine besonderen Maßnahmen erforderlich.

7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten
Lagerung:
Anforderung an Lagerräume und Behälter: Keine besonderen Anforderungen.
Zusammenlagerungshinweise: Nicht erforderlich.
Weitere Angaben zu den Lagerbedingungen: Behälter dicht geschlossen halten.
**Handelsname: EPOFIX HARDENER**

- Lagerklasse:
- Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):
- 7.3 Spezifische Endanwendungen Keine weiteren relevanten Informationen verfügbar.

**ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen**

- Zusätzliche Hinweise zur Gestaltung technischer Anlagen: Keine weiteren Angaben, siehe Abschnitt 7.
- 8.1 Zu überwachende Parameter
- Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:
  112-24-3 3,6-Diazaoctan-1,8-diamin
  MAK als Dampf und Aerosol; vgl. Abschn.IV

- Zusätzliche Hinweise: Als Grundlage dienten die bei der Erstellung gültigen Listen.
- 8.2 Begrenzung und Überwachung der Exposition
- Persönliche Schutzausrüstung:
  - Allgemeine Schutz- und Hygienemaßnahmen:
    Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.
    Beschmutzte, getränkte Kleidung sofort ausziehen.
    Vor den Pausen und bei Arbeitsende Hände waschen.
    Berührung mit den Augen und der Haut vermeiden.
  - Atemschutz:
    Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition umluftunabhängiges Atemschutzgerät verwenden.
  - Handschutz:
    Schutzhandschuhe
    Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein.
    Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikalienmischung abgegeben werden.
    Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.
  - Handschuhmaterial
    Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.
  - Durchdringungszeit des Handschuhmaterials
    Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.
  - Augenschutz:
    Dichtschließende Schutzbrille
ABSCHNITT 9: Physikalische und chemische Eigenschaften

- 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften
- Allgemeine Angaben
- Aussehen:
  - Form: Flüssigkeit
  - Farbe: Hellgelb
- Geruch:
  - Geruch: Aminartig
  - Geruchsschwelle: Nicht bestimmt.
- pH-Wert:
  - pH-Wert: Nicht bestimmt.
- Zustandsänderung
  - Schmelzpunkt/Gefrierpunkt: 12 °C
  - Siedebeginn und Siedebereich: ~278 °C
- Flammstoff:
  - Flammpunkt: 135 °C
- Entzündbarkeit (fest, gasförmig):
  - Nicht anwendbar.
- Zündtemperatur:
  - 335 °C
- Zersetzungstemperatur:
  - Nicht bestimmt.
- Selbstentzündungstemperatur:
  - Nicht bestimmt.
- Explosive Eigenschaften:
  - Das Produkt ist nicht explosionsgefährlich.
- Explosionsgrenzen:
  - Untere: Nicht bestimmt.
  - Obere: Nicht bestimmt.
- Dampfdruck bei 20 °C:
  - 0,01 hPa
- Dichte bei 20 °C:
  - 0,982 g/cm³
- Relative Dichte
  - Nicht bestimmt.
- Dampfdichte
  - Nicht bestimmt.
- Verdampfungsgeschwindigkeit
  - Nicht bestimmt.
- Löslichkeit in / Mischbarkeit mit Wasser:
  - Vollständig mischbar.
- Verteilungskoeffizient: n-Octanol/Wasser: Nicht bestimmt.
- Viskosität:
  - Dynamisch: Nicht bestimmt.
  - Kinematisch: Nicht bestimmt.
- Lösemittelgehalt:
  - VOC (EU): 0,00 %
- Festkörpergehalt:
  - 0,0 %
- 9.2 Sonstige Angaben
  - Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 10: Stabilität und Reaktivität

- 10.1 Reaktivität
  - Keine weiteren relevanten Informationen verfügbar.
- 10.2 Chemische Stabilität
- Thermische Zersetzung / zu vermeidende Bedingungen:
  - Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- 10.3 Möglichkeit gefährlicher Reaktionen
  - Keine gefährlichen Reaktionen bekannt.
Handelsname: EPOFIX HARDENER

· Zu vermeidende Bedingungen: Keine weiteren relevanten Informationen verfügbar.
· Unverträgliche Materialien: Keine weiteren relevanten Informationen verfügbar.
· Gefährliche Zersetzungsprodukte: Keine gefährlichen Zersetzungsprodukte bekannt.

ABSCHNITT 11: Toxikologische Angaben

· Angaben zu toxikologischen Wirkungen
  · Akute Toxizität
    Gesundheitsschädlich bei Hautkontakt.

· Einstufungsrelevante LD/LC50-Werte:

<table>
<thead>
<tr>
<th>112-24-3 3,6-Diazaoctan-1,8-diamin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50 2.500 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50 805 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

· Primäre Reizwirkung:
  · Ätz-/Reizwirkung auf die Haut
    Verursacht schwere Verätzungen der Haut und schwere Augenschäden.
  · Schwere Augenschädigung/-reizung
    Verursacht schwere Verätzungen der Haut und schwere Augenschäden.
  · Sensibilisierung der Atemwege/Haut
    Kann allergische Hautreaktionen verursachen.

· CMR-Wirkungen (krebsverursagende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)
  · Keimzell-Mutagenität
    Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
  · Karzinogenität
    Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
  · Reproduktionstoxizität
    Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

· Spezifische Zielorgan-Toxizität bei einmaliger Exposition
  · Keine weiteren relevanten Informationen verfügbar.

· Spezifische Zielorgan-Toxizität bei wiederholter Exposition
  · Keine weiteren relevanten Informationen verfügbar.

· Aspirationsgefahr
  · Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 12: Umweltbezogene Angaben

· Toxizität
  · Aquatische Toxizität: Keine weiteren relevanten Informationen verfügbar.
  · Persistenz und Abbaubarkeit: Keine weiteren relevanten Informationen verfügbar.
  · Bioakkumulationspotential: Keine weiteren relevanten Informationen verfügbar.

· Mobilität im Boden: Keine weiteren relevanten Informationen verfügbar.

· Ökotoxische Wirkungen:
  · Bemerkung: Schädlich für Fische.

· Weitere ökologische Hinweise:
  · Allgemeine Hinweise:
    Wassergefährdungsklasse 2 (Listeneinstufung): deutlich wassergefährdend
    Nicht in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
    Darf nicht unverdünnt bzw. unneutralisiert ins Abwasser bzw. in den Vorfluter gelangen.
    Trinkwassergefährdung bereits beim Auslaufen geringer Mengen in den Untergrund.
    schädlich für Wasserorganismen
  · Ergebnisse der PBT- und vPvB-Beurteilung
    · PBT: Nicht anwendbar.
    · vPvB: Nicht anwendbar.
**Handelsname:** EPOFIX HARDENER

**ABSCHNITT 13: Hinweise zur Entsorgung**

- **13.1 Verfahren der Abfallbehandlung**
  - **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.

- **Ungereinigte Verpackungen:**
  - **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.
  - **Empfohlenes Reinigungsmittel:** Wasser, gegebenenfalls mit Zusatz von Reinigungsmitteln.

**ABSCHNITT 14: Angaben zum Transport**

- **14.1 UN-Nummer**
  - ADR, IMDG, IATA: UN2259

- **14.2 Ordnungsgemäße UN-Versandbezeichnung**
  - ADR: 2259 TRIETHYLENTETRAMIN
  - IMDG, IATA: TRIETHYLENETETRAMINE

- **14.3 Transportgefahrenklassen**
  - ADR, IMDG, IATA:
    - Klasse: 8 Ätzende Stoffe
    - Gefahrzettel: 8

- **14.4 Verpackungsgruppe**
  - ADR, IMDG, IATA: II

- **14.5 Umwelteffekte:**
  - Nicht anwendbar.

- **14.6 Besondere Vorsichtsmaßnahmen für den Verwender**
  - Achtung: Ätzende Stoffe
  - Kemler-Zahl: 80
  - EMS-Nummer: 8-05
  - Segregation groups: Alkalis
  - Stowage Category: B
  - Stowage Code: SW2 Clear of living quarters.
  - Segregation Code: SG35 Stow "separated from" acids.

- **14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code**
  - Nicht anwendbar.

- **Transport/weitere Angaben:**
  - ADR
    - Begrenzte Menge (LQ): 1L
    - Freigestellte Mengen (EQ): Code: E2
    - Höchste Nettomenge je Innenverpackung: 30 ml
    - Höchste Nettomenge je Außenverpackung: 500 ml
  - Beförderungskategorie: 2

(Fortsetzung auf Seite 8)
Handelsname: EPOFIX HARDENER

· Tunnelbeschränkungscode: E
· IMDG
· Limited quantities (LQ): 1L
· Exempted 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 TRIETHYLENTETRAMIN, 8, II

**ABSCHNITT 15: Rechtsvorschriften**

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
- **Richtlinie 2012/18/EU**
- **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.
- **VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII**Beschränkungsbedingungen: 3
- **Nationale Vorschriften:**
- **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

**ABSCHNITT 16: Sonstige Angaben**

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

· **Abkürzungen und Akronymen:**
  - 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
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - 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
  - Acute Tox. 4: Akute Toxizität – Kategorie 4
  - Skin Corr. 1B: Hautreizende/-ätzende Wirkung – Kategorie 1B
  - Skin Sens. 1: Sensibilisierung der Haut – Kategorie 1
  - Aquatic Chronic 3: Gewässergefährdend - langfristig gewässergefährdend – Kategorie 3
SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

1.1 Identificatore del prodotto

Denominazione commerciale: EPOFIX HARDENER

Articolo numero: 1232-B, 1232-H, 1232-SP

Numero CAS: 112-24-3

Numeri CE: 203-950-6

Numero indice: 612-059-00-5

1.2 Usi identificati pertinenti della sostanza o della miscela e usi sconsigliati

Non sono disponibili altre informazioni.

1.3 Informazioni sul fornitore della scheda di dati di sicurezza

Produttore/fornitore:
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkce@aol.com
www.emsdiasum.com

Società Italiana Chimici
Via Rio Nell Ellba 140
00138 Rome, Italy
Tel: 39 06 8800211
Fax: 39 30 06 8815313
Web: www.sichim.com

Informazioni fornite da: Product safety department

1.4 Numero telefonico di emergenza:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

SEZIONE 2: Identificazione dei pericoli

2.1 Classificazione della sostanza o della miscela

Classificazione secondo il regolamento (CE) n. 1272/2008

GHS05 corrosione

Skin Corr. 1B H314 Provoca gravi ustioni cutanee e gravi lesioni oculari.

GHS07

Acute Tox. 4 H312 Nocivo per contatto con la pelle.
Skin Sens. 1 H317 Può provocare una reazione allergica cutanee.

Aquatic Chronic 3 H412 Nocivo per gli organismi acquatici con effetti di lunga durata.

2.2 Elementi dell’etichetta

Etichettatura secondo il regolamento (CE) n. 1272/2008
La sostanza è classificata ed etichettata conformemente al regolamento CLP.

(continua a pagina 2)
Denominazione commerciale: EPOFIX HARDENER

- Pittogrammi di pericolo

GHS05 GHS07

- Avvertenza Pericolo

- Componenti pericolosi che ne determinano l'etichettatura:
  3,6-diazaottano-1,8-diamina

- Indicazioni di pericolo
  H312 Nocivo per contatto con la pelle.
  H314 Provoca gravi ustioni cutanee e gravi lesioni oculari.
  H317 Può provocare una reazione allergica cutanea.
  H412 Nocivo per gli organismi acquatici con effetti di lunga durata.

- Consigli di prudenza
  P303+P361+P353 IN CASO DI CONTATTO CON LA PELLE (o con i capelli): togliere immediatamente tutti gli indumenti contaminati. Sciacquare la pelle/fare una doccia.
  P305+P351+P338 IN CASO DI CONTATTO CON GLI OCCHI: sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.
  P310 Contattare immediatamente un CENTRO ANTIVELENI/un medico.
  P321 Trattamento specifico (vedere su questa etichetta).
  P362+P364 Togliere tutti gli indumenti contaminati e lavarli prima di indossarli nuovamente.
  P405 Conservare sotto chiave.
  P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

- 2.3 Altri pericoli
  - Risultati della valutazione PBT e vPvB
    - PBT: Non applicabile.
    - vPvB: Non applicabile.

SEZIONE 3: Composizione/informazioni sugli ingredienti

- 3.1 Caratteristiche chimiche: Sostanze
  - Numero CAS
    112-24-3 3,6-diazaottano-1,8-diamina
  - Numeri di identificazione
    - Numeri CE: 203-950-6
    - Numero indice: 612-059-00-5

SEZIONE 4: Misure di primo soccorso

- 4.1 Descrizione delle misure di primo soccorso
  - Indicazioni generali:
    Allontanare immediatamente gli abiti contaminati dal prodotto.
    I sintomi di avvelenamento possono comparire dopo molte ore, per tale motivo è necessaria la sorveglianza di un medico nelle 48 ore successive all’incidente.
  - Inalazione:
    Portare il soggetto in zona molto ben areata e per sicurezza consultare un medico.
    Se il soggetto è svenuto provvedere a tenerlo durante il trasporto in posizione stabile su un fianco.
  - Contatto con la pelle: Lavare immediatamente con acqua e sapone sciacquare accuratamente.

(continua a pagina 3)
Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 08.10.2018
Revisione: 08.10.2018

Denominazione commerciale: EPOFIX HARDENER

· Contatto con gli occhi:
  Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte e consultare il medico.
· Ingestione:
  Bere abbondante acqua e sostare in zona ben areata. Richiedere immediatamente l'intervento del medico.
· 4.2 Principali sintomi ed effetti, sia acute che ritardate
  Non sono disponibili altre informazioni.
· 4.3 Indicazione dell'eventuale necessità di consultare immediatamente un medico e di trattamenti speciali
  Non sono disponibili altre informazioni.

SEZIONE 5: Misure antincendio

· 5.1 Mezzi di estinzione
  · Mezzi di estinzione idonei: Adottare provvedimenti antincendio nei dintorni della zona colpita.
  · 5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela
  · 5.3 Raccomandazioni per gli addetti all'estinzione degli incendi
  · Mezzi protettivi specifici: Non sono richiesti provvedimenti particolari.

SEZIONE 6: Misure in caso di rilascio accidentale

· 6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza
  Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.
· 6.2 Precauzioni ambientali:
  In caso di infiltrazione nei corpi d'acqua o nelle fognature avvertire le autorità competenti.
  Diluire abbondantemente con acqua.
  Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.
· 6.3 Metodi e materiali per il contenimento e per la bonifica:
  Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).
  Utilizzare mezzi di neutralizzazione.
  Smaltimento del materiale contaminato conformemente al punto 13.
  Provvedere ad una sufficiente areazione.
· 6.4 Riferimento ad altre sezioni
  Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.
  Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.
  Per informazioni relative allo smaltimento vedere Capitolo 13.

SEZIONE 7: Manipolazione e immagazzinamento

· 7.1 Precauzioni per la manipolazione sicura
  Accurata ventilazione/ aspirazione nei luoghi di lavoro.
  Evitare la formazione di aerosol.
· Indicazioni in caso di incendio ed esplosione: Non sono richiesti provvedimenti particolari.
· 7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità
  · Stoccaggio:
    · Requisiti dei magazzini e dei recipienti: Non sono richiesti requisiti particolari.
    · Indicazioni sullo stoccaggio misto: Non necessario.
    · Ulteriori indicazioni relative alle condizioni di immagazzinamento: Mantenere i recipienti ermeticamente chiusi.
· 7.3 Usi finali particolari
  Non sono disponibili altre informazioni.

SEZIONE 8: Controllo dell'esposizione/protezione individuale

· Ulteriori indicazioni sulla struttura di impianti tecnici: Nessun dato ulteriore, vedere punto 7.

(continua a pagina 4)
8.1 Parametri di controllo
- Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro: Non Necessario.
- Ulteriori indicazioni: Le liste valide alla data di compilazione sono state usate come base.

8.2 Controlli dell'esposizione
- Mezzi protettivi individuali:
  - Norme generali protettive e di igiene del lavoro:
    - Tenere lontano da cibo, bevande e foraggi.
    - Togliere immediatamente gli abiti contaminati.
    - Lavarsi le mani prima dell'intervallo o a lavoro terminato.
    - Evitare il contatto con gli occhi e la pelle.
  - Maschera protettiva:
    - Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.
- Guanti protettivi:
  - Guanti protettivi

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/la sostanza/la formulazione. A causa della mancanza di test non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto/la formulazione/la miscela di sostanze chimiche. Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.
- Materiale dei guanti
  - La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.
- Tempo di permeazione del materiale dei guanti
  - Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.
- Occhiali protettivi:
  - Occhiali protettivi a tenuta

SEZIONE 9: Proprietà fisiche e chimiche

9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali
- Indicazioni generali
- Aspetto:
  - Forma: Liquido
  - Colore: Giallo chiaro
- Odore: Amminico
- Soglia olfattiva: Non definito.
- Valori di pH: Non definito.
- Cambiamento di stato
  - Punto di fusione/punto di congelamento: 12 °C
  - Punto di ebollizione iniziale e intervallo di ebollizione: ~278 °C
### SEZIONE 10: Stabilità e reattività

- **10.1 Reattività** Non sono disponibili altre informazioni.
- **10.2 Stabilità chimica**
- **Decomposizione termica/condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- **10.3 Possibilità di reazioni pericolose** Non sono note reazioni pericolose.
- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili** Non sono disponibili altre informazioni.
- **10.6 Prodotti di decomposizione pericolosi** Non sono noti prodotti di decomposizione pericolosi.

### SEZIONE 11: Informazioni tossicologiche

- **11.1 Informazioni sugli effetti tossicologici**
- **Tossicità acuta**
  Nocivo per contatto con la pelle.
- **Valori LD/LC50 rilevanti per la classificazione:**
  - **112-24-3 3,6-diazaottano-1,8-diamina**
    - **Orale** **LD50** 2.500 mg/kg (rat)

(continua a pagina 6)
<table>
<thead>
<tr>
<th>Denominazione commerciale: EPOFIX HARDENER</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>SEZIONE 12: Informazioni ecologiche</th>
</tr>
</thead>
</table>

- **12.1 Tossicità**
  - Tossicità acquatica: Non sono disponibili altre informazioni.
- **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Effetti tossici per l'ambiente:**
  - **Osservazioni:** Nocivo per i pesci.
  - **Ulteriori indicazioni in materia ambientale:**
  - **Ulteriori indicazioni:**
    - Pericolosità per le acque classe 2 (D) (Classif. secondo le liste): pericoloso
    - Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature.
    - Non immettere il prodotto non diluito o non neutralizzato nelle acque di scarico e nei canali di raccolta.
    - Pericolo per le acque potabili anche in caso di perdite nel sottosuolo di piccole quantità di prodotto. nocivo per gli organismi acquatici
- **12.5 Risultati della valutazione PBT e vPvB**
  - **PBT:** Non applicabile.
  - **vPvB:** Non applicabile.
- **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.

<table>
<thead>
<tr>
<th>SEZIONE 13: Considerazioni sullo smaltimento</th>
</tr>
</thead>
</table>

- **13.1 Metodi di trattamento dei rifiuti**
  - **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
  - **Imballaggi non puliti:**
    - **Consigli:** Smaltimento in conformità con le disposizioni amministrative.
    - **Detergente consigliato:** Acqua eventualmente con l'aggiunta di detergivi.

(continua a pagina 7)
SEZIONE 14: Informazioni sul trasporto

<table>
<thead>
<tr>
<th>14.1 Numero ONU</th>
<th>ADR, IMDG, IATA</th>
<th>UN2259</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 Nome di spedizione dell'ONU</td>
<td>ADR</td>
<td>2259 TRIETILENTETRAMMINA</td>
</tr>
<tr>
<td>IMDG, IATA</td>
<td>TRIETHYLENETETRAMINE</td>
<td></td>
</tr>
<tr>
<td>14.3 Classi di pericolo connesso al trasporto</td>
<td>ADR, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>Classe</td>
<td>8 Materie corrosive</td>
<td></td>
</tr>
<tr>
<td>Etichetta</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>14.4 Gruppo di imballaggio</td>
<td>ADR, IMDG, IATA</td>
<td>II</td>
</tr>
<tr>
<td>14.5 Pericoli per l'ambiente:</td>
<td>Non applicabile</td>
<td></td>
</tr>
<tr>
<td>14.6 Precauzioni speciali per gli utilizzatori</td>
<td>Atenzione: Materie corrosive</td>
<td></td>
</tr>
<tr>
<td>Numero Kemler:</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Numero EMS:</td>
<td>8-05</td>
<td></td>
</tr>
<tr>
<td>Segregation groups</td>
<td>Alkalis</td>
<td></td>
</tr>
<tr>
<td>Stowage Category</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Stowage Code</td>
<td>SW2 Clear of living quarters</td>
<td></td>
</tr>
<tr>
<td>Segregation Code</td>
<td>SG35 Stow &quot;separated from&quot; acids</td>
<td></td>
</tr>
<tr>
<td>14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL ed il codice IBC</td>
<td>Non applicabile</td>
<td></td>
</tr>
<tr>
<td>14.7 Trasporto/ulteriori indicazioni:</td>
<td>ADR</td>
<td></td>
</tr>
<tr>
<td>Quantità limitate (LQ)</td>
<td>1L</td>
<td></td>
</tr>
<tr>
<td>Quantità esenti (EQ)</td>
<td>Codice: E2</td>
<td></td>
</tr>
<tr>
<td>Quantità massima netta per imballaggio interno: 30 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantità massima netta per imballaggio esterno: 500 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Categoría di trasporto</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Codice di restrizione in galleria</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>IMDG</td>
<td>Limited quantities (LQ)</td>
<td></td>
</tr>
<tr>
<td>Quantità limitate (LQ)</td>
<td>1L</td>
<td></td>
</tr>
<tr>
<td>Exected quantities (EQ)</td>
<td>Code: E2</td>
<td></td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 500 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
<td>UN 2259 TRIETILENTETRAMMINA, 8, II</td>
<td></td>
</tr>
</tbody>
</table>
Denominazione commerciale: EPOFIX HARDENER

SEZIONE 15: Informazioni sulla regolamentazione

- 15.1 Disposizioni legislative e regolamentari su salute, sicurezza e ambiente specifiche per la sostanza o la miscela
  - Direttiva 2012/18/UE
  - Sostanze pericolose specificate - ALLEGATO I La sostanza non è contenuta
  - REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII Restrizioni: 3

- 15.2 Valutazione della sicurezza chimica: Una valutazione della sicurezza chimica non è stata effettuata.

SEZIONE 16: Altre informazioni

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

- Abbreviazioni e acronimi:
  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
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  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
  Acute Tox. 4: Toxicità acuta – Categoria 4
  Skin Corr. 1B: Corrosione/irritazione della pelle – Categoria 1B
  Skin Sens. 1: Sensibilizzazione della pelle – Categoria 1
  Aquatic Chronic 3: Pericoloso per l’ambiente acquatico - pericolo a lungo termine per l’ambiente acquatico – Categoria 3
1 화학제품과 회사에 관한 정보

제품 식별자
- 제품명: EPOFIX HARDENER
- 상품번호: 1232-B, 1232-H, 1232-SP
- CAS-번호: 112-24-3
- EC 의번호: 203-950-6
- 색인 번호: 612-059-00-5
- 해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도 추가적인 정보가 존재하지 않습니다.
- 제품의 권고용도와 사용상의 제한: 실험실 화학품
- 안전데이터표(Safety Data Sheet) 내 공급업체 관련 상세 정보
- 제조자/수입자/유통업자 정보:
  Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkcck@aol.com
  www.emsdiasum.com
  Samchang Commercial Co., Ltd.
  Yeo Eui Do
  PO Box 1110
  Seoul, Korea
  Tel: 82 2 703 3040
  Fax: 82 2 717 3298

Daedok Science, Co. Ltd.
34141 E10 Korea Advanced Institute of Science
Guseong-Dong, Yuseong-gu, Daejeon,
Korea
Phone: 82 42 710 2091
Fax: 82 42 367 0005
Website: www.labsmro.com

추가적인 정보 획득 가능: Product safety department
비상연락 전화번호: ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 유해성・위험성

순물질 또는 혼합물의 분류

피부 부식
- 부식
  피부 부식성/피부 자극성 - 구분 1 H314 피부에 심한 화상과 눈 손상을 일으킴

경피
- 급성 독성 - 경피 - 구분 4 H312 피부와 접촉하면 유해함
(2 쪽에계속)
제품명: EPOFIX HARDENER

피부 과민성 - 구분 1
수생환경 유해성 - 만성3

라벨표기 요소
GHS 라벨 요소
본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

신호어 위험

상표상에명확히위험성표시된성분 상표상에명확히위험성표시된성분 상표상에명확히위험성표시된성분 상표상에명확히위험성표시된성분
3,6-diazaoctanethylenediamin

안전장치 요령

3 구성성분의 명칭 및 함유량

화학적 특성: 화학물질
CAS-번호표시: 112-24-3 3,6-diazaoctanethylenediamin
식별 번호: EC 의번호: 203-950-6 식인 번호: 612-059-00-5

4 응급조치 요령

응급조치요령 내용
일반적 정보:
이 제품에 의한 인체상해는 즉시 제거한다.
중독 증상은 몇 시간이 지난 뒤에 발생할 수 있다. 따라서 사고가 발생한 후에 적어도 48 시간동안 의사진의 관찰을 받아야 한다.
제품명: EPOFIX HARDENER

## 5 폭발·화재시 대처방법

- 소화제
  - 적절한 소화제: 주 변 환 경에 맞는 화 재 진화방법을 사용한다.
  - 본 화학물질이나 혼합물에서 발생하는 특별 유해성 추가적인 정보가 존재하지 않습니다.
  - 소방관에 대한 권고사항
    - 화재 전반 시 사용할 보호구 및 예방조치: 특 별 한 조 치가 필요없음.

## 6 누출 사고 시 대처방법

- 개인적 예방조치, 보호장비 및 응급처치 절차 안 전장 비착용하고, 무방 비 의사 함은 격 리 시킨다.
- 환경 관련 예방조치:
  - 하천이나수로로유입되었을경우해당관청에보고한다.
  - 합 을 물 로 희석 시킨다.
  - 하수도방/해수면위의물/지하수로도달하지 않게한다.
- 밀폐 및 정화방법과 소재:
  - 액체가 혼합된 물질 (모래, 규 조토, 산성 결합 물, 일반 결합 물, 톡 밥)에 흡입되도록 한다.
  - 중성제를 사용한다.
  - 항목 13에 따라 오염된 물질을 쓰레기로 처분한다.
  - 충분한 환기가 되도록 한다.
- 패색성 참조
  - 안 전 관 리에 대한 정보는 제 7 장 을 참고하시오.
  - 개인 보호 장비에 대한 정보는 제 8 장 을 참고하시오.
  - 쓰레기 처리 리에 대한 정보는 제 13 장 을 참고하시오.

## 7 취급 및 저장방법

- 취급:
  - 안전 취급을 위한 예방조치
    - 작업장에서는 통풍이 잘되고/습기체거가 잘되게 주의한다.
    - 연무질이 형성되는 것을 피한다.
  - 화재 및 폭발 사고 예방대책에 관한 정보: 특 별 한 조 치가 필요없음.
  - 혼합위험성 등 안전 저장 조건
    - 보관:
      - 안전한 저장 방법: 특 별 한 요구사항이 없음.
      - 화학물질 보관 시설에 대한 보관 관련 정보: 필요없음.
      - 보관 조건 예외한 추가적인 정보: 용기를 세지 않도록 밀폐한 체 보관한다.
      - 구체적 취급 사용자 추가적인 정보가 존재하지 않습니다.
제품명: EPOFIX HARDENER

8 노출방지 및 개인보호구

- 화장실시 대안에 대한 추가정보: 더 이상 의 자료는 없음. 항 목 7 을 참고하시오.
- 통제 변수
  - 화학물질 노출기준, 생물학적 노출기준 등:
    - 112-24-3 3,6-diazaoctanethylenediamin
      - WEEL (US) 장기간값: 6 mg/m³, 1 ppm
  - 추가정보: 제 조항 당시에 유효 한 목록을 기초로 사용했다.
- 노출 통제
  - 개인보호구
    - 일반적보호조치 및 위생조치:
      - 식료품, 음료수와 사료로 부터 멀리 멀어뜨려 놓는다.
      - 다른 위지 거나 음료 수가 묻은 곳은 즉시 사산한다.
      - 화학 물질이 작업이 끝날때마다 손을 씻는다.
      - 눈과 피부와의 접촉은 피한다.
    - 호흡기 보호:
      - 단시간 또는 긴 기간의 경우에는 호흡을 자리를 선택한다.
      - 심각한 또는 장기간 노출시에는 보호장비를 사용한다.
    - 손보호:
  - 보호용 장갑
    - 장갑재질은 제품/원료/조제물투과시키지 않아야하고, 내구성이되어야한다.
    - 테스트를 하지 않았기 때문에 제품/조제/화학 혼합물에 적합한 장갑재질에 대한 추천이 없다.
    - 투과 시간, 침투 속도의 저하를 고려해서 장갑 재료를 선택한다.
  - 눈보호:
    - 꽉리는 보안경

9 물리화학적 특성

- 기본 물리 및 화학적 특성에 대한 정보
- 일반정보
- 의형
  - 물리적 상태: 액체
  - 색: 연한 노랑
  - 녹시: 아미노종류의
  - 후각약취: 알맞지 않다.
- pH: 알맞지 않다.
제품명: EPOFIX HARDENER

<table>
<thead>
<tr>
<th>상태변화</th>
<th>녹는점/여리는점: 12 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>초기 녹는점과 끓는점 범위: ~278 °C</td>
<td></td>
</tr>
<tr>
<td>인화점: 135 °C</td>
<td></td>
</tr>
<tr>
<td>인화성(고체, 기체): 해당사항 없음.</td>
<td></td>
</tr>
<tr>
<td>점화온도: 335 °C</td>
<td></td>
</tr>
<tr>
<td>분해 온도: 알맞지 않다.</td>
<td></td>
</tr>
<tr>
<td>자기점화: 알맞지 않다.</td>
<td></td>
</tr>
<tr>
<td>폭발위험: 이제품은 폭발위험성이 없다.</td>
<td></td>
</tr>
<tr>
<td>인화 또는 폭발 범위의 상한/하한</td>
<td>야외: 알맞지 않다.</td>
</tr>
<tr>
<td></td>
<td>위로: 알맞지 않다.</td>
</tr>
<tr>
<td>중기압 의경우 20 °C: 0.01 hPa</td>
<td></td>
</tr>
<tr>
<td>밀도 의경우 20 °C: 0.982 g/cm³</td>
<td></td>
</tr>
<tr>
<td>비중: 알맞지 않다.</td>
<td></td>
</tr>
<tr>
<td>중기밀도: 알맞지 않다.</td>
<td></td>
</tr>
<tr>
<td>중발 속도: 알맞지 않다.</td>
<td></td>
</tr>
<tr>
<td>용해도: 물: 완전히 혼합할 수 있는</td>
<td></td>
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<tr>
<td>n 육탄올/물 분배계수: 알맞지 않다.</td>
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<td>젤도: 역학성: 알맞지 않다.</td>
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<tr>
<td>통질성: 알맞지 않다.</td>
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<tr>
<td>용매내용물</td>
<td>VOC (EU) 0.00 %</td>
</tr>
<tr>
<td>고체의 함량: 0.0 %</td>
<td></td>
</tr>
<tr>
<td>기타 정보: 추가적인 정보가 존재하지 않습니다.</td>
<td></td>
</tr>
</tbody>
</table>

10 안정성 및 반응성

· 반응성 추가적인 정보가 존재하지 않습니다.
· 화학적 안정성
· 화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건: 규정에따라 사 용할경우해체는없다
· 유해반응 가능성 위험한반응으로는알려지지 않았다.
· 피해야 할 조건 추가적인정보가 존재하지 않습니다.
· 혼합 급지 물질: 추가적인 정보가 존재하지 않습니다.
· 유해분해물질: 위험성있는분해물들은알려지지 않았다.
물질안전보건자료

제품명: EPOFIX HARDENER

11 독성에 관한 정보

- 특성학적 영향에 대한 정보
- 급성 독성:
  - LD/LC50-수치에 따른 분류:
    - 112-24-3 3,6-diazoocanethylenediamin
      - 구강의 LD50: 2,500 mg/kg (rat)
      - 피부의 LD50: 805 mg/kg (rabbit)

- 피부 자극 효과:
- 피부 부식성 또는 자극성: 피부와 접촉시의 부식작용
- 피부의 자극성: 피부와 접촉시의 자극작용
- 피부의 자극성: 피부와 접촉시의 자극작용

- 심한 눈 손상 또는 자극성: 심한 눈 손상 또는 자극성
- 심한 눈 손상 또는 자극성: 심한 눈 손상 또는 자극성

- 감각화:
- 피부접촉을 통해 감각화가능성이다.

- 신키경우 식도나 위의 내장기관의 상처를 주는 위험과 마찬가지로 입주변이나 구강에 강한 부식작용을 한다.

12 환경에 미치는 영향

- 수생독성:
- 수생독성: 추가적인 정보가 존재하지 않습니다.
- 지속성 및 분해성: 추가적인 정보가 존재하지 않습니다.
- 환경 시스템에 의한 영향:
- 생물농축: 추가적인 정보가 존재하지 않습니다.
- 토양 이동성: 추가적인 정보가 존재하지 않습니다.
- 생태독성:
- 생태독성: 추가적인 정보가 존재하지 않습니다.

- 유기체에 해가 되는 것:
- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
  - PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
  - vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.
- 기타 부작용: 추가적인 정보가 존재하지 않습니다.

13 폐기시 주의사항

- 폐기물 처리 방법:
- 수질오염물질 2급(목록분류): 수질오염이 된다.
- 지하수나, 하천으로 도는 하수도와도 달리 불가능하다.
- 홍수시 지장은 없으며, 지하수는 홍수시 홍수도 복수로도 달하지 않게해야 한다.
- 지하수로 정비한 위생이 유입되었을 경우 안전진 행해야 한다.
- 물속의 유기체에 해를 끼치는 것을.

- 비위생적 포장:
- 당국의 지시에 입각한 쓰레기처리.
- 주 체 세정제: 경우에 따라서 세제가 청결된 물
제품명: EPOFIX HARDENER

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<td>· UN 적정 선적명</td>
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<td>2259 TRIETHYLENETETRAMINE</td>
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<td>TRIETHYLENETETRAMINE</td>
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<td>ADR, IMDG, IATA</td>
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<td>· 등급</td>
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<td>8 부식작용하는물질</td>
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<td>· 위험물 라벨</td>
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<td>· 응기등급</td>
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<td>ADR, IMDG, IATA</td>
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<td>· 환경적 유해물질</td>
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<td>해당사항 없음</td>
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<tr>
<td>· 이용자 특별 예방조치</td>
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<td>경고: 부식작용하는물질</td>
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<td>EMS-번호:</td>
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<tr>
<td>8-05</td>
</tr>
<tr>
<td>Segregation groups</td>
</tr>
<tr>
<td>Alkalis</td>
</tr>
<tr>
<td>Stowage Category</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>Stowage Code</td>
</tr>
<tr>
<td>SW2 Clear of living quarters.</td>
</tr>
<tr>
<td>SG35 Stow &quot;separated from&quot; acids.</td>
</tr>
<tr>
<td>· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송</td>
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<td>해당사항 없음</td>
</tr>
<tr>
<td>· 운송/추가 정보</td>
</tr>
<tr>
<td>ADR</td>
</tr>
<tr>
<td>한정 수량 (LQ)</td>
</tr>
<tr>
<td>1L</td>
</tr>
<tr>
<td>Code: E2</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 500 ml</td>
</tr>
<tr>
<td>Excepted quantities (EQ)</td>
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<tr>
<td>· 운송 구분</td>
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<td>터널 제한 코드</td>
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<td>· IMDG</td>
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<td>Limited quantities (LQ)</td>
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<tr>
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<tr>
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<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
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<td>Maximum net quantity per outer packaging: 500 ml</td>
</tr>
<tr>
<td>Excepted quantities (EQ)</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>· UN &quot;모범 규제&quot;</td>
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<td>UN 2259 TRIETHYLENETETRAMINE, 8, II</td>
</tr>
</tbody>
</table>

(8쪽에계속)
제품명: EPOFIX HARDENER

15 법적 규제현황

· 산업안전보건법에 의한 규제:
  · 제조 등 금지물질:
    성분이 포함되어있지 않다
  · 허가대상물질:
    성분이 포함되어있지 않다
  · 관리대상유해물질:
    성분이 포함되어있지 않다
  · 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률
    · GHS 라벨 요소
      본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
      · 그림문자
        GHS05  GHS07
      · 신호어 위험
        · 상표상성명학 허위접합성이 표시된 성분:
          3,6-diazaoctanethylenediamin
        · 유해 위험 문구
          피부와 접촉하면 유해함
          피부에 심한 화상과 눈 손상을 일으킬 수 있으며
          알레르기성 피부 반응을 일으킬 수 있음
          장기적인 영향에 의해 수생생물에게 유해함
        · 예방조치 문구
          피부 또는 머리카락에 묻으면 오염된 모든 의복은 벗으시오. 피부를 물로 씻으시고/사용하시오.
          눈에 묻으면 몇 분간 물로 깨끗하게 씻으시오. 가능하면콘택트렌즈를 제거하시고. 계속 씻으시오.
          즉시 독성물질센터/병원 연락 필요. (라벨 참조) 처치를 하시오.
          오염된 의복은 벗고 다시 사용 전 세척하시오.
          점검장치가 있는 저장장소에 저장하시오.
          현지/지역/국가/국제 규정에 따라서 내용물/용기 노출
제품명: EPOFIX HARDENER

화학물질 안전성 평가: 화학물질 안전성 평가가 수행되지 않음

16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다. 하지만이보고서는생산특성에관한보증은

최초 작성일자: 2018.10.08
개정 횟수 및 최종 개정일자: 1 / 2018.10.08
약어와 두문자어:
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
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
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
Avsnitt 1: Identifikasjon av stoffet/stoffblandingen og av selskapet/foretaket

- **1.1 Produktidentifikator**

**Handelsnavn:** EPOFIX HARDENER

**Artikkelnummer:** 1232-B, 1232-H, 1232-SP

**CAS-nummer:**

112-24-3

**EC nummer:**

203-950-6

**EF-nummer:**

612-059-00-5

- **1.2 Relevante identifiserte bruksområder for stoffet eller stoffblanding og bruk som frarådes**

Ikke noe mer relevant informasjon tilgjengelig.

- **1.3 Opplysninger om leverandøren av sikkerhetsdatabladet**

**Produsent/leverandør:**

Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400  Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com

**Avdeling for nærmere informasjoner:** Product safety department

- **1.4 Nødtelefonnummer**

ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

Avsnitt 2: Fareidentifikasjon

- **2.1 Klassifisering av stoffet eller stoffblandingen**

**Klassifisering i henhold til EC-forskrift nr.1272/2008**

GHS05 Etsende virkning

Skin Corr. 1B    H314  Gir alvorlige etseskader på hud og øyne.

GHS07

Acute Tox. 4    H312  Farlig ved hudkontakt.
Skin Sens. 1    H317  Kan utløse en allergisk hudreaksjon.

Aquatic Chronic 3 H412  Skadelig, med langtidsvirkning, for liv i vann.

- **2.2 Merkingselementer**

**Merking iht. bestemmelse (EC) Nr. 1272/2008**

Substansen er klassifisert og merket i henhold til CLP-forordningen.

**Farepiktogrammer**

GHS05  GHS07
Handelsnavn: EPOFIX HARDENER

- **Varselord Fare**
- **Farebestemmelser ved etikettering:**
  - 3,6-diazaoktan-1,8-diamin
- **Faresetninger**
  - H312 Farlig ved hudkontakt.
  - H314 Gir alvorlige etseskader på hud og øyne.
  - H317 Kan utløse en allergisk hudreaksjon.
  - H412 Skadelig, med langtidsvirkning, for liv i vann.
- **Sikkerhetssetninger**
  - P310 Kontakt umiddelbart et GIFTINFORMASJONSSENTER/en lege.
  - P321 Særlig behandling (se på etiketten).
  - P362+P364 Tilsølte klær må fjernes og vaskes før bruk.
  - P405 Oppbevares innelåst.
  - P501 Innholdet / emballasjen skal avhendes i henhold til de lokale / regionale / nasjonale / internasjonale forskrifter.

- **2.3 Andre farer**
- **Resultater av PBT- og vPvB-vurdering**
  - PBT: Ikke brukbar.
  - vPvB: Ikke brukbar.

### Avsnitt 3: Sammensetning/opplysninger om bestanddeler

- **3.1 Kjemisk karakterisering: Stoffer**
- **CAS-nr. betegnelse**
  - 112-24-3 3,6-diazaoktan-1,8-diamin
- **Identifikasjonsnummer(numre)**
  - EC nummer: 203-950-6
  - EF-nummer: 612-059-00-5

### Avsnitt 4: Forstehjelpstiltak

- **4.1 Beskrivelse av forstehjelpstiltak**
- **Generelle informasjoner:**
  Kler som er tilsølt med produktet må fjernes omgående. Forgiftningssymptomer kan også oppstå etter mange timer. Personer må derfor ha legetilsyn i minst 48 timer etter etterlykke.
- **Etter innånding:**
  Rikelig frisklufttilførsel, søk legehjelp for sikkerhets skyld.
  Ved bevisstløshet lagring og transport i stabil sidesetting.
- **Etter hudkontakt:** Vask straks med vann og sepe og skyll godt etterpå.
- **Etter øyekontakt:** Skyll øynene med åpne øyenlokk i flere minutter under rennende vann og tilkall lege.
- **Etter svelging:** Drik rikelig med vann og sørg for frisk luft. Tilkall lege omgående.
- **4.2 De viktigste symptomene og virkningene, både akutte og forsinkede**
  Ikke noe mer relevant informasjon tilgjengelig.
- **4.3 Angivelse av om umiddelbar legehjelp og spesialbehandling er nødvendig**
  Ikke noe mer relevant informasjon tilgjengelig.
Avsnitt 5: Brannslokkningstiltak

· 5.1 Slokingsmidler
· Egna slokingsmidler: Brannslokningstiltak tilpasses omgivelsene.
· 5.2 Særlige farer knyttet til stoffet eller stoffblandingen Ikke noe mer relevant informasjon tilgjengelig.
· 5.3 Råd til brannmannskaper
· Spesielt verneutstyr: Ingen spesielle tiltak nødvendig.

Avsnitt 6: Tiltak ved utilsiktede utslipp

· 6.1 Personlige forsikthetsregler, personlig verneutstyr og nødrutiner
Ta på beskyttelsedrakt. Hold ubeskyttede personer borte.
· 6.2 Forsikthetsregler med hensyn til miljø
Ansvarte myndigheter varsles hvis produktet er kommet ned i vassdrag eller kloakk.
Fortynn med rikelig med vann.
· 6.3 Metoder og materialer for oppsamling og rensing
Ta opp stoffet med væskebindende materiale (sand, kiselgur, syrebindemiddel, universalbindemiddel, sagflis).
Bruk nøytraliseringsmiddel.
Bortskaff kontaminert materiale som avfall i.h.t. punkt 13.
Sørg for tilstrekkelig ventilation.
· 6.4 Henvisning til andre avsnitt
Informasjoner om sikker håndtering, se kapittel 7.
Informasjoner om personlig beskyttelsesutstyr, se kapittel 8.
Informasjoner om bortskaffelse/deponering, se kapittel 13.

Avsnitt 7: Håndtering og lagring

· 7.1 Forsikthetsregler for sikker håndtering
Sørg for god ventilasjon/avsugning på arbeidsplassen.
Unngå aerosoldannelse.
· Henvisninger om brann- og eksplosjonsvern: Ingen særlige tiltak nødvendig.
· 7.2 Vilkår for sikker lagring, herunder eventuelle uforenligheter
· Lagring:
· Krav til lagerrom og beholdere: Ingen spesielle krav.
· Informasjoner om felles lagring: Ikke nødvendig.
· Ytterligere informasjoner om lagervilkårene: Hold beholderne tett tillukket.
· 7.3 Særlig(e) sluttanvendelse(r) Ikke noe mer relevant informasjon tilgjengelig.

Avsnitt 8: Eksponeringskontroll / personlig verneutstyr

· Ytterligere informasjoner om utforming av tekniske anlegg: Ingen ytterligere informasjoner, se punkt 7.
· 8.1 Kontrollparameter
· Komponenter med grenseverdier for arbeidsplass som må overholdes:
  112-24-3 3,6-diazaoktan-1,8-diamin
  AG Langtidsverdi: 6 mg/m³, 1 ppm
  A
· Ytterligere informasjoner: Basis: listene som var gyldige ved oppstillingen.
Handelsnavn: EPOFIX HARDENER

- 8.2 Eksponeringskontroll
- Personlig verneutstyr:
  - Generelle verne- og hygienetiltak:
    Holdes adskilt fra næringsmidler, drikkevarer og forstoffer.
    Fjern omgående forurensede, gjennomvætede klær.
    Vask hendene før arbeidspauser og ved arbeidets slutt.
    Unngå berøring med øyne og hud.
- Åndedrettsvern:
  Ved korttidig eller liten belastning åndedrettsfilterapparat; ved intensiv eller lengre utsetting: bruk omluft-\n  uavhengig åndedrettsbeskyttelsesapparat.
- Håndvern:
  Beskyttelseshansker
  Hanskematerialet må være uøgjennomtrengelig og bestandig overfor produktet /stoffet /blandingen.
  På grunn av manglende tester kan det ikke gis noen anbefaling om hanskemateriale for produktet /\n  tilberedningsprosessen/kjemikaliblandingen.
  Hanskematerialet velges under hensyntagen til holdbarhetstid, gjennomtrengelighet og degradering.
- hanskemateriale
  Valget av egnet hanske er ikke bare avhengig av materiale, men også av andre kvalitetskjennetegn og er\n  forskjellig fra produsent til produsent.
- gjennomtrengingstid for hanskemateriale
  Den nyaktige holdbarhetstiden må bringes på det rene hos hanskeprodusenten og overholdes.
- Øyevern:
  Tettsittende vernebrille

Avsnitt 9: Fysiske og kjemiske egenskaper

- 9.1 Opplysninger om grunnleggende fysiske og kjemiske egenskaper
- alminnelige opplysninger
- Utseende:
  Form: Væske
  Farge: Lysegul
  Lukt: Aminlignende
  Luktterskel: Ikke bestemt.
- pH-verdi: Ikke bestemt.
- Tilstandsendring
  Smeltepunkt/frysepunkt: 12 °C
  Startkokepunkt og kokeområde: ~278 °C
- Flammepunkt: 135 °C
- Antennelighet (fast stoff, gass): Ikke brukbar.
- Antennelsestemperatur: 335 °C
- Nedbrytingstemperatur: Ikke bestemt.
Handelsnavn: EPOFIX HARDENER

- Selvantennelsestemperatur: Ikke bestemt.
- Eksplosive egenskaper: Produktet er ikke eksplosjonsfarlig.
- Eksplosjonsgrenser: 
  Nedre: Ikke bestemt.
  Øvre: Ikke bestemt.
- Damptrykk ved 20 °C: 0,01 hPa
- Tettethet ved 20 °C: 0,982 g/cm³
- Relativ tetthet: Ikke bestemt.
- Damptettethet: Ikke bestemt.
- Fordampingshastighet: Ikke bestemt.
- Löslichkeit i / blandbarhet med vann: Fullstendig blandbar.
- Fordelingskoeffisient; n-oktanol/vann: Ikke bestemt.
- Viskositet: 
  Dynamisk: Ikke bestemt.
  Kinematisk: Ikke bestemt.
- Løsningsmiddelandel: 
  VOC (EF) 0,00 %
- Andel faste stoffer: 0,0 %
- 9.2 Andre opplysninger Ikke noe mer relevant informasjon tilgjengelig.

Avsnitt 10: Stabilitet og reaktivitet
- 10.1 Reaktivitet Ikke noe mer relevant informasjon tilgjengelig.
- 10.2 Kjemisk stabilitet
  Termisk spaltning / vilkår som må unngås: Ingen spaltning ved formålsrikt bruk.
- 10.3 Risiko for farlige reaksjoner Det kjennes ingen farlige reaksjoner.
- 10.4 Forhold som skal unngås Ikke noe mer relevant informasjon tilgjengelig.
- 10.5 Uforenlige materialer Ikke noe mer relevant informasjon tilgjengelig.
- 10.6 Farlige nedbrytingsprodukter Ingen farlige spalttingsprodukter kjente.

Avsnitt 11: Toksikologiske opplysninger
- 11.1 Opplysninger om toksikologiske virkninger
  Akutt giftighet
  Farlig ved hudkontakt.
- Klassifiseringsrelevante LD/LC50-verdier:
  112-24-3 3,6-diazaoktan-1,8-diamin
  Oral LD₅₀ 2,500 mg/kg (rat)
  Dermal LD₅₀ 805 mg/kg (rabbit)
- Primær irritasjonsvirkning:
  Hudetsing/hudirritasjon
  Gir alvorlige etseskader på hud og øyne.
  Alvorlig øyeskade/øyeirritasjon
  Gir alvorlige etseskader på hud og øyne.
Handelsnavn: EPOFIX HARDENER

- Sensibilisering ved innånding eller hudkontakt
  Kan utløse en allergisk hudreaksjon.
- Informasjon om følgende grupper med potensielle virkninger:
- CMR-virkninger (kreftfremkallende virkninger, arvestoffskadelige og reproduksjonsskadelige virkninger)
- Arvestoffskadelig virkning på kjønnscceller Basert på tilgjengelige data, klassifiseringskriteriene ikke oppfylt.
- Kreesfrankallende egenskap Basert på tilgjengelige data, klassifiseringskriteriene ikke oppfylt.
- STOT – enkelteksponering Basert på tilgjengelige data, klassifiseringskriteriene ikke oppfylt.
- STOT – gjentatt eksponering Basert på tilgjengelige data, klassifiseringskriteriene ikke oppfylt.
- Aspirasjonsfare Basert på tilgjengelige data, klassifiseringskriteriene ikke oppfylt.

Avsnitt 12: Økologiske opplysninger

- 12.1 Giftighet
  - Akvatisk toksisitet: Ikke noe mer relevant informasjon tilgjengelig.
- 12.2 Persistens og nedbrytbarhet Ikke noe mer relevant informasjon tilgjengelig.
- 12.3 Bioakkumuleringsevne Ikke noe mer relevant informasjon tilgjengelig.
- 12.4 Mobilitet i jord Ikke noe mer relevant informasjon tilgjengelig.
- Økotoksiske virkninger:
  - Bemerkning: skadelig for fisk
- Ytterligere økologiske informasjoner:
  - Generelle informasjoner:
    - Vannfareklasse 2 (D) (listeklassifisering): farlig for vann
    - Ikke la stoffet komme ned i grunnvannet, i vassdrag eller i kloaker.
    - Må ikke komme ufortynnet eller unøytralisert ned i spillvann eller i avløpsgrøft.
    - Fare for drikkevann allerede ved utstrømning av små mengder i marken.
    - skadelig for vannorganismer
  - 12.5 Resultater av PBT- og vPvB-vurdering
    - PBT: Ikke brukbar.
    - vPvB: Ikke brukbar.
- 12.6 Andre skadevirkninger Ikke noe mer relevant informasjon tilgjengelig.

Avsnitt 13: Sluttbehandling

- 13.1 Avfallsbehandlingsmetoder
  - Anbefaling: Må ikke bortskaffes sammen med husholdningsavfall. Må ikke komme ned i kloakk.
  - Ikke rengjort emballasje:
    - Anbefaling: Deponering i henhold til myndighetenes forskrifter.
    - Anbefalt rengjøringsmiddel: Vann, eventuelt med tilsetning av rengjøringsmidler.

Avsnitt 14: Transportopplysninger

- 14.1 FN-nummer
  - ADR, IMDG, IATA UN2259
- 14.2 FN-forsendelsesnavn
  - ADR 2259 TRIETYLENTETRAMIN
  - IMDG, IATA TRIETHYLENETETRAMINE

(fortsatt på side 7)
## Avsnitt 15: Opplysninger om regelverk

### 15.2 Vurdering av kjemikaliesikkerhet

En kjemisk sikkerhetsvurdering er ikke utført.

## Avsnitt 16: Andre opplysninger

Opplysningene er basert på vårt kjennskap i dag. De utgjør dog ingen forsikring om produktenskaper og er ikke grunnlag for noen kontraktmessig rettsforhold.

### Forkortelser og akronymer:

- **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

(fortsatt på side 8)
Handelsnavn: EPOFIX HARDENER

IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
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
Acute Tox. 4: Akutt giftighet – Kategori 4
Skin Corr. 1B: Hudensiping/hudirritasjon – Kategori 1B
Skin Sens. 1: Hudensibilisering – Kategori 1
Aquatic Chronic 3: Farlig for vannmiljøet - langsiktig fare for vannmiljøet – Kategori 3
SECÇÃO 1: Identificação da substância/mistura e da sociedade/empresa

- 1.1 Identificador do produto
  - Nome comercial: EPOFIX HARDENER
  - Código do produto: 1232-B, 1232-H, 1232-SP
  - N° CAS: 112-24-3
  - Número CE: 203-950-6
  - Número de índice: 612-059-00-5

- 1.2 Utilizações identificadas relevantes da substância ou mistura e utilizações desaconselhadas
  - Não existe mais nenhuma informação relevante disponível.

- 1.3 Identificação do fornecedor da ficha de dados de segurança
  - Fabricante/fornecedor: Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: sgkck@aol.com
    www.emsdiasum.com

- 1.4 Entidade para obtenção de informações adicionais: Product safety department

- 1.5 Número de telefone de emergência:
  - ChemTrec 1-800-424-9300 Contract CCN7661
  - 1-703-527-3887

SECÇÃO 2: Identificação dos perigos

- 2.1 Classificação da substância ou mistura
  - Classificação em conformidade com o Regulamento (CE) n.º 1272/2008

  GHS05 corrosão
  Skin Corr. 1B H314 Provoca queimaduras na pele e lesões oculares graves.

  GHS07
  Acute Tox. 4 H312 Nocivo em contacto com a pele.
  Skin Sens. 1 H317 Pode provocar uma reacção alérgica cutânea.

  Aquatic Chronic 3 H412 Nocivo para os organismos aquáticos com efeitos duradouros.

- 2.2 Elementos do rótulo
  - Rotulagem em conformidade com o Regulamento (CE) n.º 1272/2008
  - A substância classificou-se e está etiquetado em conformidade com o regulamento CLP.

- Pictogramas de perigo

  GHS05
  GHS07

(continuação na página 2)
 Nome comercial: EPOFIX HARDENER

- Palavra-sinal Perigo
- Componentes determinantes para os perigos constantes do rótulo:
  3,6-diazaoctano-1,8-diamina
- Advertências de perigo
  H312 Nocivo em contacto com a pele.
  H314 Provoca queimaduras na pele e lesões oculares graves.
  H317 Pode provocar uma reacção alérgica cutânea.
  H412 Nocivo para os organismos aquáticos com efeitos duradouros.
- Recomendações de prudência
  P303+P361+P353 SE ENTRAR EM CONTACTO COM A PELE (ou o cabelo): retirar imediatamente toda a roupa contaminada. Enxaguar a pele com água/tomar um duche.
  P310 Contacte imediatamente um CENTRO DE INFORMAÇÃO ANTIVENENOS/médico.
  P321 Tratamento específico (ver no presente rótulo).
  P362+P364 Retirar a roupa contaminada e lavá-la antes de a voltar a usar.
  P405 Armazenar em local fechado à chave.
  P501 Eliminar o conteúdo/recipiente de acordo com a legislação local/regional/nacional/internacional.

- 2.3 Outros perigos
  - Resultados da avaliação PBT e mPmB
    - PBT: Não aplicável.
    - mPmB: Não aplicável.

SECÇÃO 3: Composição/informação sobre os componentes

- 3.1 Caracterização química: Substâncias
- Designação CAS n°
  112-24-3 3,6-diazaoctano-1,8-diamina
- Número(s) de identificação
  - Número CE: 203-950-6
  - Número de índice: 612-059-00-5

SECÇÃO 4: Medidas de primeiros socorros

- 4.1 Descrição das medidas de primeiros socorros
- Indicações gerais:
  O vestuário contaminado com substâncias perigosas deve ser imediatamente removido.
  Os sintomas de envenenamento podem surgir apenas após várias horas, por isso é necessária vigilância médica pelo menos 48 horas após o acidente.
- Em caso de inalação:
  Assegurar uma boa entrada de oxigénio e, por razões de segurança, procurar auxílio médico.
  Se a vítima estiver inconsciente, posicioná-la e transportá-la com estabilidade, deitada lateralmente.
- Em caso de contacto com a pele:
  Lavar imediatamente com água e sabão e enxaguar abundantemente.
- Em caso de contacto com os olhos:
  Enxaguar os olhos durante alguns minutos sob água corrente, mantendo as pálpebras abertas, e consultar o médico.
- Em caso de ingestão:
  Beber bastante água e respirar ar fresco. Consultar imediatamente um médico.
- 4.2 Sintomas e efeitos mais importantes, tanto agudos como retardados
  Não existe mais nenhuma informação relevante disponível.
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- 4.3 Indicações sobre cuidados médicos urgentes e tratamentos especiais necessários
Não existe mais nenhuma informação relevante disponível.

SECÇÃO 5: Medidas de combate a incêndios

- 5.1 Meios de extinção
- Meios adequados de extinção: Coordenar no local medidas para extinção do fogo.
- 5.2 Perigos especiais decorrentes da substância ou mistura
Não existe mais nenhuma informação relevante disponível.
- 5.3 Recomendações para o pessoal de combate a incêndios
- Equipamento especial de proteção: Não são necessárias medidas especiais.

SECÇÃO 6: Medidas a tomar em caso de fugas acidentais

- 6.1 Precauções individuais, equipamento de protecção e procedimentos de emergência
Usar equipamento de proteção. Manter as pessoas desprotegidas afastadas.
- 6.2 Precauções a nível ambiental:
Em caso de infiltrações nos leitos de água ou na canalização, comunicar aos serviços públicos competentes.
Diluir em bastante água.
Evitar que penetre na canalização / águas superficiais / águas subterrâneas.
- 6.3 Métodos e materiais de confinamento e limpeza:
Recolher com produtos que absorvam líquidos (areia, seixos, absorventes universais, serradura ).
Aplicar um agente de neutralização.
Eliminar residualmente as substâncias contaminadas como um resíduo segundo o Ponto 13.
Assegurar uma ventilação adequada.
- 6.4 Remissão para outras secções
Para informações sobre manipulação segura, ver o capítulo 7.
Para informações referentes ao equipamento de protecção individual, ver o capítulo 8.
Para informações referentes à eliminação residual, ver o capítulo 13.

SECÇÃO 7: Manuseamento e armazenagem

- 7.1 Precauções para um manuseamento seguro
Assegurar uma boa ventilação / exaustão no local de trabalho.
Evitar a formação de aerossóis.
- Precauções para prevenir incêndios e explosões: Não são necessárias medidas especiais.
- 7.2 Condições de armazenagem segura, incluindo eventuais incompatibilidades
- Armazenagem:
- Requisitos para espaços ou contentores para armazenagem: Sem requisitos especiais.
- Avisos para armazenagem conjunta: Não necessário.
- Outros avisos sobre as condições de armazenagem: Manter o recipiente hermeticamente fechado.
- 7.3 Utilização(ões) final(is) específica(s) Não existe mais nenhuma informação relevante disponível.

SECÇÃO 8: Controlo da exposição/Proteção individual

- Indicações adicionais para concepção de instalações técnicas: Não existem outras informações, ver ponto 7.
- 8.1 Parâmetros de controlo
- Componentes cujo valor do limite de exposição no local de trabalho deve ser monitorizado: Não aplicável.
- Indicações adicionais: Foram utilizadas como base as listas válidas à data da elaboração.

( continuação na página 4 )
Nome comercial: EPOFIX HARDENER

8.2 Controlo da exposição
- Equipamento de protecção individual:
  - Medidas gerais de protecção e higiene:
    Manter afastado de alimentos, bebidas e forragens.
    Despir imediatamente a roupa contaminada e embebida.
    Lavar as mãos antes das pausas e no fim do trabalho.
    Evitar o contacto com os olhos e com a pele.
  - Protecção respiratória:
    Utilizar uma máscara respiratória se a exposição for reduzida ou durante um curto espaço de tempo; se esta for mais prolongada ou mais intensa, utilizar uma máscara respiratória independente do ar ambiente.
  - Protecção das mãos:
    Luvas de protecção
    O material das luvas tem de ser impermeável e resistente ao produto / à substância / preparação.
    Uma vez que não foram realizados testes nesta área, não podemos recomendar um determinado tipo de material para as luvas que seja adequado para o produto / a preparação / a mistura de químicos.
    Escolher o material das luvas tendo em consideração a durabilidade, a permeabilidade e a degradação.
  - Material das luvas
    A escolha das luvas mais adequadas não depende apenas do material, mas também de outras características qualitativas e varia de fabricante para fabricante.
  - Tempo de penetração no material das luvas
    Deve informar-se sobre a validade exacta das suas luvas junto do fabricante e respeitá-la.
  - Protecção dos olhos:
    Óculos de protecção totalmente fechados

SECÇÃO 9: Propriedades físico-químicas

9.1 Informações sobre propriedades físicas e químicas de base
- Informações gerais
  - Aspeto:
    Forma: Líquido
    Cor: Amarelo-claro
    Odor: aminado
  - Limiar olfactivo: Não classificado.
  - valor pH: Não classificado.
- Mudança do estado:
  - Ponto de fusão/ponto de congelação: 12 ºC
  - Ponto de ebulição inicial e intervalo de ebulição: ~278 ºC
- Ponto de inflamação: 135 ºC
- Inflamabilidade (sólido, gás): Não aplicável.
- Temperatura de ignição: 335 ºC
- Temperatura de decomposição: Não classificado.
Nome comercial: EPOFIX HARDENER

| · Temperatura de autoignição:          | Não classificado. |
| · Propriedades explosivas:            | O produto não corre o risco de explosão. |
| · Limites de explosão:                | Não classificado. |
| Inferior:                             | Não classificado. |
| Superior:                             | Não classificado. |
| · Pressão de vapor em 20 ºC:          | 0,01 hPa          |
| · Densidade em 20 ºC:                 | 0,982 g/cm³       |
| · Densidade relativa                  | Não classificado. |
| · Densidade de vapor                  | Não classificado. |
| · Taxa de evaporação                   | Não classificado. |
| · Solubilidade em / miscibilidade com | Completamente misturável. |
| água:                                 |                   |
| · Coeficiente de partição: n-octanol/água | Não classificado. |
| · Viscosidade:                        | Não classificado. |
| Dinâmico:                             |                   |
| Cinemático:                           |                   |
| · Percentagem de solvente:            | 0,00 %            |
| VOC (UE)                              |                   |
| · Percentagem de substâncias sólidas:  | 0,0 %             |
| · 9.2 Outras informações              | Não existe mais nenhuma informação relevante disponível. |

SECÇÃO 10: Estabilidade e reactividade

· 10.1 Reactividade Não existe mais nenhuma informação relevante disponível.
· 10.2 Estabilidade química
· Decomposição térmica / condições a evitar: Não existe decomposição se usado de acordo com as especificações.
· 10.3 Possibilidade de reações perigosas Não se conhecem reacções perigosas.
· 10.4 Condições a evitar Não existe mais nenhuma informação relevante disponível.
· 10.5 Materiais incompatíveis: Não existe mais nenhuma informação relevante disponível.
· 10.6 Produtos de decomposição perigosos: Não se conhecem produtos de decomposição perigosos.

SECÇÃO 11: Informação toxicológica

· 11.1 Informações sobre os efeitos toxicológicos
· Toxicidade aguda
  Nocivo em contacto com a pele.
· Valores LD/LC50 relevantes para a classificação:
  T12-24-3 3,6-diazaoctano-1,8-diamina
  por via oral  LD50 2.500 mg/kg (rat)
  por via dérmica LD50 805 mg/kg (rabbit)
· Efeito de irritabilidade primário:
  · Corrosão/irritação cutânea
    Provoca queimaduras na pele e lesões oculares graves.
  · Lesões oculares graves/irritação ocular
    Provoca queimaduras na pele e lesões oculares graves.
Nome comercial: EPOFIX HARDENER

- Sensibilização respiratória ou cutânea
  Pode provocar uma reacção alérgica cutânea.
- Efeitos CMR (carcinogenicidade, mutagenicidade e efeitos tóxicos na reprodução)
- Mutagenicidade em células germinativas
  Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
- Carcinogenicidade
  Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
- Toxicidade reprodutiva
  Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
- Toxicidade para órgãos-alvo específicos (STOT) - exposição única
  Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
- Toxicidade para órgãos-alvo específicos (STOT) - exposição repetida
  Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
- Perigo de aspiração
  Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

SECÇÃO 12: Informação ecológica

- 12.1 Toxicidade
  Toxicidade aquática: Não existe mais nenhuma informação relevante disponível.
- 12.2 Persistência e degradabilidade: Não existe mais nenhuma informação relevante disponível.
- 12.3 Potencial de bioacumulação: Não existe mais nenhuma informação relevante disponível.
- 12.4 Mobilidade no solo: Não existe mais nenhuma informação relevante disponível.
- Efeitos ecológicos:
  Observação: Nocivo para os peixes.
- Outras indicações ecológicas:
  Indicações gerais:
  Classe de perigo para a água 2 (D) (classificação pelas listas): perigoso para a água.
  Não deixar chegar às águas subterrâneas, aos cursos de água nem à canalização.
  Substâncias concentradas, ou seja não neutralizadas, não podem chegar aos esgotos nem às águas.
  Perigo de poluição da água potável mesmo se forem derramadas quantidades muito pequenas no subsolo.
  nocivo para os organismos aquáticos
  12.5 Resultados da avaliação PBT e mPmB
  • PBT: Não aplicável.
  • mPmB: Não aplicável.
- 12.6 Outros efeitos adversos
  Não existe mais nenhuma informação relevante disponível.

SECÇÃO 13: Considerações relativas à eliminação

- 13.1 Métodos de tratamento de resíduos
  Recomendação: Não se pode eliminar juntamente com o lixo doméstico. Não permita que chegue à canalização.
- Embalagens contaminadas:
  Recomendação: Eliminação residual conforme o regulamento dos serviços públicos.
  Meio de limpeza recomendado: Água, eventualmente com adição de produtos de limpeza

SECÇÃO 14: Informações relativas ao transporte

- 14.1 Número ONU
  ADR, IMDG, IATA UN2259
- 14.2 Designação oficial de transporte da ONU
  ADR 2259 TRIETILENOTETRAMINA
  IMDG, IATA TRIETHYLENETETRAMINE
Nome comercial: EPOFIX HARDENER

14.3 Classes de perigo para efeitos de transporte
- ADR, IMDG, IATA

<table>
<thead>
<tr>
<th>Classe</th>
<th>8 Matérias corrosivas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rótulo</td>
<td>8</td>
</tr>
</tbody>
</table>

14.4 Grupo de embalagem
- ADR, IMDG, IATA

| Grupo | II |

14.5 Perigos para o ambiente:
Não aplicável.

14.6 Precauções especiais para o utilizador
- Atenção: Matérias corrosivas
- Nº Kemler: 80
- Nº EMS: 8-05
- Segregation groups: Alkalis
- Stowage Category: B
- Stowage Code: SW2 Clear of living quarters.
- Segregation Code: SG35 Stow "separated from" acids.

14.7 Transporte a granel em conformidade com o anexo II da Convenção MARPOL e o Código IBC
Não aplicável.

Transporte/outras informações:

<table>
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<tr>
<th>ADR</th>
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<tbody>
<tr>
<td>Quantidades Limitadas (LQ)</td>
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<td>Quantidades exceptuadas (EQ)</td>
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<tr>
<th>IMDG</th>
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<tbody>
<tr>
<td>Limited quantities (LQ)</td>
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<tr>
<td>Excepted quantities (EQ)</td>
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<table>
<thead>
<tr>
<th>UN &quot;Model Regulation&quot;:</th>
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<tbody>
<tr>
<td>UN 2259 TRIETILENOTETRAMINA, 8, II</td>
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</tbody>
</table>

SEÇÃO 15: Informação sobre regulamentação

15.1 Regulamentação/legislação específica para a substância ou mistura em matéria de saúde, segurança e ambiente
- Diretiva 2012/18/UE
- Substâncias perigosas designadas - ANEXO I A substância não está listada.
- Regulamento (CE) n.º 1907/2006 ANEXO XVII Condições de limitação: 3
- Avaliação da segurança química: Não foi realizada nenhuma Avaliação de Segurança Química.
SECÇÃO 16: Outras informações

As informações fornecidas baseiam-se no estado actual dos nossos conhecimentos, embora não representem uma garantia das propriedades do produto e não fundamentam uma relação contratual.

· Abreviaturas e acrónimos:
  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
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  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
  Acute Tox. 4: Toxicidade aguda – Categoria 4
  Skin Corr. 1B: Corrosão/irritação cutânea – Categoria 1B
  Skin Sens. 1: Sensibilização cutânea – Categoria 1
  Aquatic Chronic 3: Perigoso para o ambiente aquático - perigo de longo prazo para o ambiente aquático – Categoria 3
Ficha de datos de seguridad
según 1907/2006/CE, Artículo 31

fecha de impresión 08.10.2018
Revisión: 08.10.2018

SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

· 1.1 Identificador del producto
  · Nombre comercial: EPOFIX HARDENER
  · Número del artículo: 1232-B, 1232-H, 1232-SP
  · Número CAS: 112-24-3
  · Número CE: 203-950-6
  · Número de clasificación: 612-059-00-5

· 1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados
  No existen más datos relevantes disponibles.

· 1.3 Datos del proveedor de la ficha de datos de seguridad
  · Fabricante/distribuidor:
    Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: sgkceck@aol.com
    www.emsdiasum.com
  
  Aname
  C/ Perez Galdos no. 2
  28693 Quijorna
  Madrid, Spain
  Tel: +34.91.816.89.50
  Fax: +34.91.816.85.94
  email: ventas@aname.es

  · Área de información: Product safety department
  · 1.4 Teléfono de emergencia:
    ChemTrec 1-800-424-9300 Contract CCN7661
    1-703-527-3887

SECCIÓN 2: Identificación de los peligros

· 2.1 Clasificación de la sustancia o de la mezcla
  · Clasificación con arreglo al Reglamento (CE) nº 1272/2008

  GHS05 corrosión

  Skin Corr. 1B  H314  Provoca quemaduras graves en la piel y lesiones oculares graves.

  GHS07

  Acute Tox. 4  H312  Nocivo en contacto con la piel.
  Skin Sens. 1  H317  Puede provocar una reacción alérgica en la piel.

  Aquatic Chronic 3  H412  Nocivo para los organismos acuáticos, con efectos nocivos duraderos.

· 2.2 Elementos de la etiqueta
  · Etiquetado con arreglo al Reglamento (CE) nº 1272/2008
  La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.

( se continúa en página 2 )
Nombre comercial: EPOFIX HARDENER

- **Pictogramas de peligro**
  
  ![GHS05](se continua en página 1) ![GHS07](se continua en página 1)

- **Palabra de advertencia** Peligro

- **Componentes peligrosos a indicar en el etiquetaje:**
  3,6-diazaoctano-1,8-diamina trietilentetramina

- **Indicaciones de peligro**
  
  H312 Nocivo en contacto con la piel.
  H314 Provoca quemaduras graves en la piel y lesiones oculares graves.
  H317 Puede provocar una reacción alérgica en la piel.
  H412 Nocivo para los organismos acuáticos, con efectos nocivos duraderos.

- **Consejos de prudencia**
  
  P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente todas las prendas contaminadas. Aclararse la piel con agua/ducharse.
  P305+P351+P338 EN CASO DE CONTACTO CON LOS OJOS: Aclarar cuidadosamente con agua durante varios minutos. Quitar las lentes de contacto, si lleva y resulta fácil. Seguir aclarando.
  P310 Llamar inmediatamente a un CENTRO DE TOXICOLOGÍA/médico.
  P321 Se necesita un tratamiento específico (ver en esta etiqueta).
  P362+P364 Quitar las prendas contaminadas y lavarlas antes de volver a usarlas.
  P405 Guardar bajo llave.
  P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

- **2.3 Otros peligros**

- **Resultados de la valoración PBT y mPmB**
  
  - PBT: No aplicable.
  - mPmB: No aplicable.

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**SECCIÓN 3: Composición/información sobre los componentes**

- **3.1 Caracterización química: Sustancias**

  - **Denominación Nº CAS**
    112-24-3 3,6-diazaoctano-1,8-diamina trietilentetramina

- **Número(s) de identificación**
  
  - **Número CE:** 203-950-6
  - **Número de clasificación:** 612-059-00-5

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**SECCIÓN 4: Primeros auxilios**

- **4.1 Descripción de los primeros auxilios**

  - **Instrucciones generales:**
    Quitarse de inmediato toda prenda contaminada con el producto. Los síntomas de intoxicación pueden presentarse después de muchas horas, por lo que se requiere una supervisión médica durante un mínimo de 48 horas después del accidente.

  - **En caso de inhalación del producto:**
    Suministrar suficiente aire fresco y, para mayor seguridad, consultar el médico. Las personas desmayadas deben tenderse y transportarse de lado con la suficiente estabilidad.

  - **En caso de contacto con la piel:**
    Lavar inmediatamente con agua y jabón y enjuagar bien.
Nombre comercial: EPOFIX HARDENER

- **En caso de con los ojos:**
  Limpiar los ojos abiertos durante varios minutos con agua corriente y consultar un médico.
- **En caso de ingestión:** Beber mucha agua a respirar aire fresco. Solicitar asistencia médica inmediatamente.
- **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.
- **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente** No existen más datos relevantes disponibles.

**SECCIÓN 5: Medidas de lucha contra incendios**

- **5.1 Medios de extinción**
- **Sustancias extintoras apropiadas:** Combatir los incendios con medidas adaptados al ambiente circundante.
- **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.
- **5.3 Recomendaciones para el personal de lucha contra incendios**
- **Equipo especial de protección:** No se requieren medidas especiales.

**SECCIÓN 6: Medidas en caso de vertido accidental**

- **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia**
  Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.
- **6.2 Precauciones relativas al medio ambiente:**
  Al penetrar en las aguas o en el alcantarillado, avisar a las autoridades pertinentes.
  Diluir con mucha agua.
- **6.3 Métodos y material de contención y de limpieza:**
  Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).
  Utilizar un neutralizador.
  Desechar el material contaminado como vertido según item 13.
  Asegurar suficiente ventilación.
- **6.4 Referencia a otras secciones**
  Ver capítulo 7 para mayor información sobre una manipulación segura.
  Ver capítulo 8 para mayor información sobre el equipo personal de protección.
  Para mayor información sobre cómo desechar el producto, ver capítulo 13.

**SECCIÓN 7: Manipulación y almacenamiento**

- **7.1 Precauciones para una manipulación segura**
  Asegurar suficiente ventilación /aspiración en el puesto de trabajo.
  Evitar la formación de aerosoles.
- **Prevención de incendios y explosiones:** No se requieren medidas especiales.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
  - **Exigencias con respecto al almacen y los recipientes:** No se requieren medidas especiales.
  - **Normas en caso de un almacenamiento conjunto:** No es necesario.
  - **Indicaciones adicionales sobre las condiciones de almacenamiento:**
  Mantener el recipiente cerrado herméticamente.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.
SECCIÓN 8: Controles de exposición/protección individual

- Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:
  Sin datos adicionales, ver punto 7.

8.1 Parámetros de control
- Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo: Nulo.
- Indicaciones adicionales: Como base se han utilizado las listas vigentes en el momento de la elaboración.

8.2 Controles de la exposición
- Equipos de protección individual:
- Medidas generales de protección e higiene:
  Mantener alejado de alimentos, bebidas y alimentos para animales.
  Quitarse de inmediato la ropa ensuciada o impregnada.
  Lavarse las manos antes de las pausas y al final del trabajo.
  Evitar el contacto con los ojos y la piel.
- Protección respiratoria:
  Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.
- Protección de manos:

Guantes de protección

El material del guante deberá ser impermeable y resistente al producto / substancia / preparado. Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas. Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

- Material de los guantes
  La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.

- Tiempo de penetración del material de los guantes
  El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

- Protección de ojos:

Gafas de protección herméticas

SECCIÓN 9: Propiedades físicas y químicas

- 9.1 Información sobre propiedades físicas y químicas básicas
- Datos generales
  - Aspecto:
    Forma: Líquido
    Color: Amarillo claro
  - Olor:
    Similar al de las aminas
  - Umbral olfativo:
    No determinado.
  - valor pH:
    No determinado.

( se continua en página 5 )
**Nombre comercial:** EPOFIX HARDENER

<table>
<thead>
<tr>
<th><strong>Cambio de estado</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Punto de fusión/punto de congelación:</td>
<td>12 °C</td>
</tr>
<tr>
<td>Punto inicial de ebullición e intervalo de ebullición:</td>
<td>~278 °C</td>
</tr>
</tbody>
</table>

| **Punto de inflamación:** | 135 °C |
| **Inflamabilidad (sólido, gas):** | No aplicable. |
| **Temperatura de ignición:** | 335 °C |
| **Temperatura de descomposición:** | No determinado. |
| **Temperatura de auto-inflamación:** | No determinado. |
| **Propiedades explosivas:** | El producto no es explosivo. |

| **Límites de explosión:** |  |
| Inferior: | No determinado. |
| Superior: | No determinado. |

| **Presión de vapor a 20 °C:** | 0,01 hPa |
| **Densidad a 20 °C:** | 0,982 g/cm³ |
| **Densidad relativa** | No determinado. |
| **Densidad de vapor** | No determinado. |
| **Tasa de evaporación** | No determinado. |

| **Solubilidad en / miscibilidad con agua:** | Completamente mezclable. |
| **Coeficiente de reparto: n-octanol/agua:** | No determinado. |
| **Viscosidad:** |  |
| Dinámica: | No determinado. |
| Cinemática: | No determinado. |

| **Concentración del disolvente:** |  |
| VOC (CE) | 0,00 % |
| **Contenido de cuerpos sólidos:** | 0,0 % |

| **9.2 Otros datos** | No existen más datos relevantes disponibles. |

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**SECCIÓN 10: Estabilidad y reactividad**

| **10.1 Reactividad** | No existen más datos relevantes disponibles. |
| **10.2 Estabilidad química** |  |
| **Descomposición térmica / condiciones que deben evitarse:** | No se descompone al emplearse adecuadamente. |
| **10.3 Posibilidad de reacciones peligrosas** | No se conocen reacciones peligrosas. |
| **10.4 Condiciones que deben evitarse** | No existen más datos relevantes disponibles. |
| **10.5 Materiales incompatibles:** | No existen más datos relevantes disponibles. |
| **10.6 Productos de descomposición peligrosos:** | No se conocen productos de descomposición peligrosos. |

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**SECCIÓN 11: Información toxicológica**

| **11.1 Información sobre los efectos toxicológicos** |  |
| **Toxicidad aguda** | Nocivo en contacto con la piel. |

( se continua en página 6 )


**Ficha de datos de seguridad**

según 1907/2006/CE, Artículo 31

**Nombre comercial:** EPOFIX HARDENER

(se continua en página 5)

<table>
<thead>
<tr>
<th>Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:</th>
</tr>
</thead>
<tbody>
<tr>
<td>112-24-3 3,6-diazaoctano-1,8-diamina trietilentetramina</td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>

- **Efecto estimulante primario:**
- Corrosión o irritación cutáneas
- Provoca quemaduras graves en la piel y lesiones oculares graves.
- Lesiones o irritación ocular graves
- Provoca quemaduras graves en la piel y lesiones oculares graves.
- Sensibilización respiratoria o cutánea
- Puede provocar una reacción alérgica en la piel.
- Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)
- Mutagenicidad en células germinales
- A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- Carcinogenicidad
- A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- Toxicidad para la reproducción
- A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- Toxicidad específica en determinados órganos (STOT) – exposición única
- A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- Toxicidad específica en determinados órganos (STOT) – exposición repetida
- A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- Peligro de aspiración
- A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

**SECCIÓN 12: Información ecológica**

- 12.1 Toxicidad
- Toxicidad acuática: No existen más datos relevantes disponibles.
- 12.2 Persistencia y degradabilidad
- No existen más datos relevantes disponibles.
- 12.3 Potencial de bioacumulación
- No existen más datos relevantes disponibles.
- 12.4 Movilidad en el suelo
- No existen más datos relevantes disponibles.
- Efectos ecológicos:
- Observación: Nocivo para los peces.
- Indicaciones medioambientales adicionales:
- Indicaciones generales:
- Nivel de riesgo para el agua 2 (clasificación de listas): peligroso para el agua
- No dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
- En estado no diluido o no neutralizado, no verter en el alcantarillado o en otros sistemas de desagüe.
- Una cantidad mínima vertida en el subsuelo ya representa un peligro para el agua potable.
- nocivo para organismos acuáticos
- 12.5 Resultados de la valoración PBT y mPmB
- PBT: No aplicable.
- mPmB: No aplicable.
- 12.6 Otros efectos adversos
- No existen más datos relevantes disponibles.

**SECCIÓN 13: Consideraciones relativas a la eliminación**

- 13.1 Métodos para el tratamiento de residuos
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.

(se continua en página 7)
SECCIÓN 14: Información relativa al transporte

14.1 Número ONU
- ADR, IMDG, IATA
  UN2259

14.2 Designación oficial de transporte de las Naciones Unidas
- ADR
  2259 TRIETILENTETRAMINA
- IMDG, IATA
  TRIETHYLENETETRAMINE

14.3 Clase(s) de peligro para el transporte
- ADR, IMDG, IATA

  - Clase
    8 Materias corrosivas
  - Etiqueta
    8

14.4 Grupo de embalaje
- ADR, IMDG, IATA
  II

14.5 Peligros para el medio ambiente:
  No aplicable.

14.6 Precauciones particulares para los usuarios
  Atención: Materias corrosivas
  - Número Kemler:
    80
  - Número EMS:
    8-05
  - Segregation groups
    Alkalis
  - Stowage Category
    B
  - Stowage Code
    SW2 Clear of living quarters.
  - Segregation Code
    SG35 Stow “separated from” acids.

14.7 Transporte a granel con arreglo al anexo II del Convenio MARPOL y el Código IBC
  No aplicable.

Transporte/datos adicionales:

- ADR
  Cantidad limitadas (LQ)
  1L
  Código: E2
  Cantidad neta máxima por envase interior: 30 ml
  Cantidad neta máxima por embalaje exterior: 500 ml

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

"Reglamentación Modelo" de la UNECE:
UN 2259 TRIETILENTETRAMINA, 8, II
SECCIÓN 15: Información reglamentaria

· 15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla

· Directiva 2012/18/UE
· Sustancias peligrosas nominadas - ANEXO I No contiene la sustancia.
· REGLAMENTO (CE) nº 1907/2006 ANEXO XVII Restricciones: 3
· 15.2 Evaluación de la seguridad química: Una evaluación de la seguridad química no se ha llevado a cabo.

SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contratual.

· Abreviaturas y acrónimos:
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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Toxicidad aguda – Categoría 4
Skin Corr. 1B: Corrosión o irritación cutáneas – Categoría 1B
Skin Sens. 1: Sensibilización cutánea – Categoría 1
Aquatic Chronic 3: Peligroso para el medio ambiente acuático - peligro acuático a largo plazo – Categoría 3
AVSNITT 1: Namnet på ämnet/blandningen och bolaget/företaget

1.1 Produktbeteckning

- Handelsnamn: EPOFIX HARDENER
- Artikelnummer: 1232-B, 1232-H, 1232-SP
- CAS-nummer: 112-24-3
- EG-nummer: 203-950-6
- Indexnummer: 612-059-00-5

1.2 Relevanta identifierade användningar av ämnet eller blandningen och användningar som det avråds från

Ingen ytterligare relevant information finns till förfogande.

1.3 Närmare upplysningar om den som tillhandahåller säkerhetsdatablad

- Tillverkare/leverantör: Electron Microscopy Sciences
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkck@aol.com
  www.emsdiasum.com

- Område där upplysningar kan inhämtas: Product safety department

1.4 Telefonnummer för nödsituationer:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

AVSNITT 2: Farliga egenskaper

2.1 Klassificering av ämnet eller blandningen

- Klassificering enligt förordning (EG) nr 1272/2008

GHS05 frätande

Skin Corr. 1B H314 Orsakar allvarliga frätskador på hud och ögon.

GHS07

Acute Tox. 4 H312 Skadligt vid hudkontakt.

Skin Sens. 1 H317 Kan orsaka allergisk hudreaktion.

Aquatic Chronic 3 H412 Skadliga långtidseffekter för vattenlevande organismer.

2.2 Märkningsuppgifter

- Märkning enligt förordning (EG) nr 1272/2008 Ämnet är klassificerat och märkt enligt CLP-förordningen.
- Faropiktogram

GHS05  GHS07

Signalord Fara
Handelsnamn: EPOFIX HARDENER

· Riskbestämmande komponenter för etikettering:
  3,6-diazaoktan-1,8-diamin trietylentetramin

· Faroangivelser
  H312 Skadligt vid hudkontakt.
  H314 Orsakar allvarliga frätskador på hud och ögon.
  H317 Kan orsaka allergisk hudreaktion.
  H412 Skadliga långtidseffekter för vattenlevande organismer.

· Skyddsangivelser
  P303+P361+P353 VID HUDKONTAKT (även håret): Ta omedelbart av alla nedstänkta kläder. Skölj huden med vatten/duscha.
  P305+P351+P338 VID KONTAKT MED ÖGONEN: Skölj försiktigt med vatten i flera minuter. Ta ur eventuella kontaktlinser om det går lätt. Fortsätt att skölja.
  P310 Kontakta genast GIFTINFORMATIONSCENTRALEN/läkare.
  P321 Särskild behandling (se på etiketten).
  P362+P364 Ta av nedstänkta kläder och tvätta dem innan de används igen.
  P405 Förvaras inlåst.
  P501 Innehållet / behållaren avfallshanteras enligt lokala / regionala / nationella / internationella föreskrifter.

· 2.3 Andra faror
  · Resultat av PBT- och vPvB-bedömningen
    · PBT: Ej användbar.
    · vPvB: Ej användbar.

AVSNITT 3: Sammansättning/information om beståndsdelar

· 3.1 Kemisk karakterisering: Ämnen
· CAS-nr. beteckning
  112-24-3 3,6-diazaoktan-1,8-diamin trietylentetramin
· Identifikationsnummer
· EG-nummer: 203-950-6
· Indexnummer: 612-059-00-5

AVSNITT 4: Åtgärder vid första hjälp

· 4.1 Beskrivning av åtgärder vid första hjälp
  · Allmänna hänvisningar:
  Klädesplagg som förorenats med produkten skall omedelbart avlägsnas.
  Förgiftningssymptom kan uppstå först efter många timmar. Av denna anledning krävs läkarövervakning i minst 48 timmar efter ett olycksfall.
  · Vid inandning:
  Riklig tillförsel av friskluft, kontakta läkare för säkerhets skull.
  Vid medvetslöshet lägg och transportera patient stabilt i framstupa sidoläge.
  · Vid kontakt med huden: Tvätta omedelbart med vatten och tvål och spola därefter noggrant.
  · Vid kontakt med ögonen: Spola ögonen öppna i flera minuter under rinnande vatten och kontakta läkare.
  · Vid förtäring: Drick riktigt med vatten. Tillför frisk luft. Kontakta läkare omedelbart.
  · 4.2 De viktigaste symptomen och effekternas, både akuta och fördröjda
  Ingen ytterligare relevant information finns till förfogande.
  · 4.3 Angivande av omedelbar medicinsk behandling och särskild behandling som eventuellt krävs
  Ingen ytterligare relevant information finns till förfogande.
**AVSNITT 5: Brandbekämpningsåtgärder**

- 5.1 Släckmedel
- Lämpliga släckningsmedel: Anpassa brandbekämpningsåtgärderna till omgivningen.
- 5.2 Särskilda faror som ämnet eller blandningen kan medföra
  Ingen ytterligare relevant information finns till förfogande.
- 5.3 Råd till brandbekämpningspersonal
  Speciell skyddsutrustning: Inga speciella åtgärder krävs.

**AVSNITT 6: Åtgärder vid oavsiktliga utsläpp**

- 6.1 Personliga skyddsåtgärder, skyddsutrustning och åtgärder vid nödsituationer
  Använd skyddsutrustning. Håll oskyddade personer på avstånd.
- 6.2 Miljöskyddsåtgärder:
  När produkten kommit in i vattendrag eller avloppsnät, skall vederbörande myndigheter underrättas.
  Blanda upp med mycket vatten.
  Förhindra produkten att tränga ner i avloppsnät/ytvatten/grundvatten.
- 6.3 Metoder och material för inneslutning och sanering:
  Sug upp med vätskebindande material (sand, kiselgur, syrabindemedel, universalbindemedel, sågspån).
  Använd neutraliseringsmedel.
  Omhänderta förörenat material som avfall enligt punkt 13.
  Se till att ventilationen är tillräcklig.
- 6.4 Hänvisning till andra avsnitt
  Information beträffande säker hantering se kapitel 7.
  Information beträffande personlig skyddsutrustning se kapitel 8.
  Information beträffande avfallshantering se kapitel 13.

**AVSNITT 7: Hantering och lagring**

- 7.1 Försiktighetsmått för säker hantering
  Sörj för god ventilation/utsug på arbetsplatsen.
  Undvik bildning av aerosol.
- Hänvisningar beträffande brand- och explosionsskydd: Inga speciella åtgärder krävs.
- 7.2 Förhållanden för säker lagring, inklusive eventuell oförenlighet
  - Lagring:
    - Krav på lagerutrymmen och behållare: Inga speciella krav.
    - Hänvisningar beträffande sammanlagring: Erfordras ej.
    - Ytterligare uppgifter till lagringsvillkoren: Förvara behållaren tätt tillsluten.
    - 7.3 Specifik slutanvändning
      Ingen ytterligare relevant information finns till förfogande.

**AVSNITT 8: Begränsning av exponeringen/personligt skydd**

- Ytterligare hänvisningar beträffande utformning av tekniska anläggningar: Inga övriga uppgifter, se punkt 7.
- 8.1 Kontrollparametrar
  - Amnen med yrkeshygieniska gränsvärden som bör övervakas:
    112-24-3 3,6-diazaoktan-1,8-diamin trietylentetramin
    OEL
    Korttidsvärde: 12 mg/m³, 2 ppm
    Nivågränsvärde: 6 mg/m³, 1 ppm
    S, V

(Fortsättning på sida 4)
Handelsnamn: EPOFIX HARDENER

- Ytterligare hänvisningar: De vid framställningen gällande listorna har använts som utgångspunkt.

- 8.2 Begränsning av exponeringen

- Personlig skyddsutrustning:

- Allmänna skydds- och hygienåtgärder:
  Undvik kontakt med livsmedel, drycker och fodermedel.
  Nedsattsade, indränkta klädesplagg skall omedelbart tas av.
  Tvätta händerna före raster och efter arbetet.
  Undvik kontakt med ögonen och huden.

- Andningssskydd:
  Vid kortvarig eller ringa belastning - använd andningsfilterutrustning; vid intensiv resp. längre exponering - använd andningsskyddsutrustning som är oberoende av omgivningsslutna.

- Handskydd:
  Skyddshandskar

  Handskmaterialet måste vara tätt och beständig mot produkt/ämne/tillredning.
  Handskmaterialrekommendationer kan inte ges för produkt/tillredning/kemikalielösning, då inga tester genomförts.
  Val av handskmaterial beaktande penetrationstider, permeationskvoter och degradation.

- Handskmaterial
  Val av lämplig handske är inte enbart beroende av material utan även av andra kvalitetskriterier och varierar från en tillverkare till nästa.

- Handskmaterialalets penetreringstid
  Exakt penetrationstid fastställs av skyddshandskarnas tillverkare och skall beaktas.

- Ögonskydd:
  Tättslutande skyddsglasögon

AVSNITT 9: Fysikaliska och kemiska egenskaper

- 9.1 Information om grundläggande fysikaliska och kemiska egenskaper

- Allmänna uppgifter

- Utseende:
  Form: Vätska
  Färg: Ljusgul
  Lukt: Aminaktig
  Lukttröskel: Ej bestämd.

- pH-värde: Ej bestämd.

- Tillståndssäckning
  Smältpunkt/fryspunkt: 12 °C
  Initial kokpunkt och kokpuntsintervall: ~278 °C

- Flampunkt: 135 °C

- Brandfarlighet (fast form, gas): Ej användbar.

- Tändtemperatur: 335 °C
### Handelsnamn: EPOFIX HARDENER

| · Sönderfallstemperatur: | Ej bestämd. |
| · Självantändningstemperatur: | Ej bestämd. |
| · Explosiva egenskaper: | Produkten är ej explosiv. |
| · Explosionsgränser: |   |
|   Nadre: | Ej bestämd. |
|   Övre: | Ej bestämd. |
| · Ångtryck vid 20 °C: | 0,01 hPa |
| · Densitet vid 20 °C: | 0,982 g/cm³ |
| · Relativ densitet: | Ej bestämd. |
| · Ångdansitet: | Ej bestämd. |
| · Avdunstningshastighet: | Ej bestämd. |
| · Löslichkeit i / blandbarhet med Vatten: | Fullständigt blandbar. |
| · Fördelningskoefficient: n-oktanol/vatten: | Ej bestämd. |
| · Viskositet: |   |
|   Dynamisk: | Ej bestämd. |
|   Kinematisk: | Ej bestämd. |
| · Lösningsmedelhalt: |   |
|   VOC (EG): | 0,00 % |
| · Andel av fasta partiklar: | 0,0 % |
| · 9.2 Annan information | Ingen ytterligare relevant information finns till förfogande. |

### AVSNITT 10: Stabilitet och reaktivitet

- **10.1 Reaktivitet** Ingen ytterligare relevant information finns till förfogande.
- **10.2 Kemisk stabilitet**
  - Termisk sönderdelning / förhållanden som bör undvikas: Inget sönderfall vid ändamålsenlig användning.
  - **10.3 Risken för farliga reaktioner** Inga farliga reaktioner kända.
  - **10.4 Förhållanden som ska undvikas** Ingen ytterligare relevant information finns till förfogande.
  - **10.5 Oförenliga material** Ingen ytterligare relevant information finns till förfogande.
  - **10.6 Farliga sönderdelningsprodukter** Inga farliga sönderfallsprodukter kända.

### AVSNITT 11: Toxikologisk information

- **11.1 Information om de toxikologiska effekterna**
  Skadligt vid hudkontakt.
- **Klassificeringsrelevanta LD/LC50-värden:**

| 112-24-3 3,6-diazaoktan-1,8-diamin trietyltetramin |
| Oral | LD50 2,500 mg/kg (rat) |
| Dermal | LD50 805 mg/kg (rabbit) |

- **Primär retningseffekt:**
  - Frätsande/irriterande på huden
    Orsakar allvarliga frätskador på hud och ögon.
AVSNITT 12: Ekologisk information

- 12.1 Toxicitet
  - Akvatisk toxicitet: Ingen ytterligare relevant information finns till förfogande.
- 12.2 Persistens och nedbrytbarhet Ingen ytterligare relevant information finns till förfogande.
- 12.3 Bioackumuleringsförmåga Ingen ytterligare relevant information finns till förfogande.
- 12.4 Rörlighet i jord Ingen ytterligare relevant information finns till förfogande.
- Ekotoxiska effekter:
  - Kommentar: Skadlig för fisk.
- Ytterligare ekologiska hänvisningar:
  - Allmänna hänvisningar:
    - Vattenföroreningsklass 2 (värdering enligt listan): risk för vattenföroringen.
    - Låt ej tränga ner i grundvatten, vattendrag eller i avloppsnätet.
    - Får ej hamna i avloppsvatten eller uppsamlingsdike i utspätt resp. oneutraliserat tillstånd.
    - Risk för föroring av dricksvattnet redan när små mängder tränger ner i marken.
    - Skadlig för vattenorganismer
  - 12.5 Resulatat av PBT- och vPvB-bedömningen
    - PBT: Ej användbar.
    - vPvB: Ej användbar.
  - 12.6 Andra skadliga effekter Ingen ytterligare relevant information finns till förfogande.

AVSNITT 13: Avfallshantering

- 13.1 Avfallsbehandlingsmetoder
  - Rekommendation: Får inte deponeras ihop med hushållsavfall. Får inte tömmas i avloppsnätet.
  - Ej rengjorda förpackningar:
    - Rekommendation: Avfallshanteras enligt myndigheters föreskrifter.
    - Rekommenderat rengöringsmedel: Vatten, eventuellt med tillsats av rengöringsmedel.

AVSNITT 14: Transportinformation

- 14.1 UN-nummer
  - ADR, IMDG, IATA UN2259
### 14.2 Officiell transportbenämning
- **ADR**: 2259 TRIETYLENTETRAMIN
- **IMDG, IATA**: TRIETHYLENETETRAMINE

### 14.3 Faroklass för transport
- **ADR, IMDG, IATA**: 8 Frätande ämnen

### 14.4 Förpackningsgrupp
- **ADR, IMDG, IATA**: II

### 14.5 Miljöfaror:
- **Etikett**: Ej användbar.

### 14.6 Särskilda skyddsåtgärder
- **Kemler-tal**: 80
- **EMS-nummer**: 8-05
- **Segregation groups**: Alkalis
- **Stowage Category**: B
- **Stowage Code**: SW2 Clear of living quarters.
- **Segregation Code**: SG35 Stow “separated from” acids.

### 14.7 Bulktransport enligt bilaga II till Marpol 73/78 och IBC-koden
- **Transport / ytterligare uppgifter:** Ej användbar.

- **ADR**
  - **Begränsade mängder (LQ)**: 1L
  - **Reducerade mängder (EQ)**: Kod: E2
    - Högsta nettomängd per innerförpackning: 30 ml
    - Högsta nettomängd per ytterförpackning: 500 ml

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

- **UN "Model Regulation“**: 2259 TRIETYLENTETRAMIN, 8, II

### AVSNITT 15: Gällande föreskrifter

- **15.1 Föreskrifter/lagsstiftning om ämnet eller blandningen när det gäller säkerhet, hälsa och miljö**
  - Direktiv 2012/18/EU
  - Namngivna farliga ämnen - BILAGA I Ämnet är inte listat.
  - Förordning (EG) nr 1907/2006 BILAGA XVII Villkor: 3
Handelsnamn: EPOFIX HARDENER

15.2 Kemikaliesäkerhetsbedömning: En kemikaliesäkerhetsbedömning har ej gjorts.

AVSNITT 16: Annan information

Uppgifterna är baserade på våra aktuella kunskaper. De representerar emellertid ingen som helst garanti beträffande produkttegenskaper och utgör ingen grund för ett avtalat rättsförhållande.

Förkortningar och akronymer:
- 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
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- 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
- Acute Tox. 4: Akut toxicitet – Kategori 4
- Skin Corr. 1B: Frätande eller irriterande på huden – Kategori 1B
- Skin Sens. 1: Hudensibilisering – Kategori 1
- Aquatic Chronic 3: Färligt för vattenmiljön - fara för skadliga långtidseffekter – Kategori 3
1 การระบุสาร/การทำ/และของบริษัท/บริษัทที่เข้าก็อง

- 1.1 สัญญาณทางของอันตราย
- ชื่อทางการค้า EPOFIX HARDENER
- เลขที่ข้อมูล 1232-B, 1232-H, 1232-SP
- เลขที่ CAS: 112-24-3
- จำนวน EC: 203-950-6
- เลขที่ EU: 612-059-00-5
- 1.2 สารหรือสารผสมที่เกี่ยวข้องที่ระบุให้ใช้และที่ไม่ควรให้ใช้ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- การประยุกต์ใช้สาร/การทำ เคมีภัณฑ์ห้องทดลอง
- 1.3 รายละเอียดของผู้จัดหาข้อมูลด้านความปลอดภัย
  - ผู้ผลิต/ผู้จัดหา
    Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: sgkcck@aol.com
    www.emsdiasum.com
  - ข้อมูลรายละเอียดเพิ่มเติมได้จาก Product safety department
- 1.4 หมายเลขโทรศัพท์ฉุกเฉิน: ChemTrec 1-800-424-9300 Contract CCN7661 1-703-527-3887

2 การระบุสิ่งที่เป็นอันตราย

- 2.1 การจำแนกประเภทของสารหรือสารผสม
  การจำแนกประเภทตามข้อบังคับ (อีซี) เลขที่ 1272/2008
  - การกัดกร่อน
    Skin Corr. 1 H314 เป็นส่วนใด่กังวลน้ำหนażอย่างสาหัสและทำอันตรายต่อดวงตา
  
  - Acute Tox. 4 H312 เป็นอันตราย หากสัมผัสกับผิวหน้างาย
  
  - Skin Sens. 1 H317 อาจเป็นสาเหตุให้ผิวหนังแสดงอาการแพ้
  
  - Aquatic Chronic 3 H412 ให้โทษต่อสัตว์น้ำต่อสัตว์น้ำที่มีผลกระทบระยะยาว
- 2.2 องค์ประกอบของฉลาก
  - ฉลากตามระเบียบ (EC) เลขที่ 1272/2008 สำหรับการจัดประเภทและติดฉลากตามข้อบังคับของ CLP
  - ภาพสัญลักษณ์สิ่งที่เป็นอันตราย
  
  - GHS05 GHS07
- สัญญาณคำอันตราย
แทนชื่อผลิตภัณฑ์เฉพาะ
dำ 1907/2006/EC, มาตรา 31

วันพิมพ์ 2018.10.08 การปรับปรุงใหม่ : 2018.10.08

ชื่อทางการค้า EPOFIX HARDENER

(ต่อหน้า 1)

- ส่วนประกอบที่ระบุอันตรายในฉลาก
  ไตรเอทิลีนเตตรามีน
- ประกาศการป้องกันระมัดระวังภัย
  P303+P361+P353 หากสัมผัสถูกผิวหนัง (หรือเส้นผม)
  ถอดเสื้อผ้าที่เปรอะเปียกทั้งหมดทันที; ล้างด้วยน้ำ/อาบน้ำ
  P305+P351+P338 หากเข้าตา: ชะด้วยน้ำอย่างระมัดระวังเป็นเวลาหลายๆนาที; ถอดคอนแทคเลนส์; แก้ไขที่ที่สังเกตเห็น
  P310 โทรศัพท์ถึงศูนย์พิษวิทยา/แพทย์ทันที
  P321 การบําบัดรักษาเฉพาะ (ดูฉลาก)
  P362+P364 ถอดเสื้อผ้าที่เปรอะและซักก่อนที่จะนํากลับมาใช้ใหม่
  P405 เก็บในที่ใส่กุญแจบิด
  P501 ทิ้งสิ่งที่บรรจุ/ภาชนะที่บรรจุตามกฎหมายของท้องถิ่น/แคว้น/ในประเทศ/ระหว่างประเทศ

(ต่อหน้า 2)

3 ส่วนประกอบ/ข้อมูลรายละเอียดของส่วนผสมต่างๆ

- 3.1 คุณลักษณะทางเคมี: สาร
  การระบุเลขที่ CAS
  112-24-3 ไตรเอทิลีนเตตรามีน
- เลขที่ที่ระบุ
  จำนวน EC: 203-950-6
  เลขที่ EU: 612-059-00-5

4 มาตรการการปฐมพยาบาลเบื้องต้น

- 4.1 คำอธิบายถึงมาตรการปฐมพยาบาล
  ชื่อของยาละเอียดสั้นๆ
    ไตรเอทิลีนเตตรามีน
    หลังจากการสัมผัสผิว: ล้างด้วยน้ำและสบู่แล้วฟอกทันที; หลังจากการกลืนเข้าไป: ดื่มน้ำมากๆและให้สูดอากาศบริสุทธิ์พบแพทย์โดยทันที
    หลังจากการสัมผัสตา: ชะตาที่เปียกอยู่ใต้น้ำที่กําลังไหลเป็นเวลาหลายนาทีจากนั้นให้ปรึกษาแพทย์
    หลังจากการสูดหายใจเข้าไป: หลังจากการสูดหายใจในท้องถิ่น/แคว้น/ในประเทศ/ระหว่างประเทศ
  ข้อมูลที่เกี่ยวข้องเกี่ยวกับการรักษาจากแพทย์ทันทีและการปัสสาวะที่จําเป็น
- 4.2 อาการสําคัญส่วนใหญ่และผลกระทบ ที่อาจเนื่องจากผลิตภัณฑ์
  ผิวที่เกี่ยวข้องเกี่ยวกับการรักษาจากแพทย์ทันทีและการปัสสาวะที่จําเป็น
  ไม่มีข้อมูลที่เกี่ยวข้องเกี่ยวกับการรักษาจากแพทย์ทันทีและการปัสสาวะที่จําเป็น

(ต่อหน้า 3)
แผนข้อมูลความปลอดภัย
ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.08

ชื่อทางการค้า EPOFIX HARDENER

(ต่อห่าง 2)

5 มาตรการการดับเพลิง

- 5.1 สารที่ใช้ดับเพลิง
 สารติดต่อที่ไม่ละลาย ใช้วัสดุที่มีการระบายอากาศที่ดีพอ
- 5.2 อุปกรณ์ป้องกันส่วนบุคคล
 ไม่มีข้อมูลที่เกี่ยวกับสภาวะของหน้าผิว
- 5.3 คำแนะนำสำหรับการดำเนินการดับเพลิง
 ดูข้อมูลรายละเอียดเพิ่มเติม

6 มาตรการดูแลพิเศษ

- 6.1 การป้องกันส่วนบุคคล อุปกรณ์ป้องกัน และขั้นตอนดำเนินการเมื่อเกิดการสูญเสียเลือด
 ไม่ต้องมีมาตรการพิเศษ
- 6.2 การคัดเลือกผู้มีความสามารถในการดับเพลิง
 ไม่ต้องมีการคัดเลือกพิเศษ
- 6.3 วิธีดำเนินการและวัสดุสำหรับการบรรจุและการทำงานควบคุม:
 ไม่ต้องมีการป้องกันภัยส่วนบุคคล
- 6.4 การทำการป้องกันอุบัติเหตุ
 ไม่ต้องมีการป้องกันอุบัติเหตุ

7 การขนถ่ายและการจัดเก็บ

- 7.1 การป้องกันส่วนบุคคลสำหรับการจัดการย้ายและเก็บรักษา
 ไม่ต้องมีการป้องกันพิเศษ
- 7.2 การป้องกันส่วนบุคคลสำหรับการขนถ่าย:
 ไม่ต้องมีการป้องกันพิเศษ
- 7.3 การป้องกันส่วนบุคคลสำหรับการขนถ่าย:
 ไม่ต้องมีการป้องกันพิเศษ

8 การควบคุมการเก็บในหลักการป้องกัน ที่เกิดจากการป้องกันส่วนบุคคล

- 8.1 การควบคุมด้านแปร:
 ไม่ต้องมีการควบคุมด้านแปร

ที่มา 3/8
# ข้อมูลการเสียชีวิต

8.2 การควบคุมการสัมผัส
- อุปกรณ์ป้องกันส่วนบุคคล
- มาตรฐานการป้องกันและสุขอนามัยทั่วไป

## การปรับปรุงใหม่: 2018.10.08

ชื่อทางการค้า: EPOFIX HARDENER

(ต่อหน้า 3)

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9 คุณสมบัติทางกายภาพและเคมี

9.1 ข้อมูลคุณสมบัติพื้นฐานทางกายภาพและเคมี
- ข้อมูลรายละเอียดทั่วไป
  - สี:
    - รูปสัณฐาน: สีเหลืองอ่อน
  - กลิ่น:
    - คล้ายเอมีน
  - pH:
    - ไม่ได้กำหนดไว้
  - จุดหลอมเหลว:
    - 12 °C
  - จุดเดือด:
    - ~278 °C
  - จุดวาบไฟ:
    - 135 °C

---

# แนวทำที่ขอบปิดสิน
### ข้อหาการค้า EPOFIX HARDENER

<table>
<thead>
<tr>
<th>คำแนะนำ</th>
<th>ผลิตภัณฑ์ไม่มีอันตรายจากการระเบิด</th>
</tr>
</thead>
<tbody>
<tr>
<td>ความเสถี่ยนที่ 20 °C</td>
<td>0.01 hPa</td>
</tr>
<tr>
<td>ความหนาแน่นที่ 20 °C</td>
<td>0.982 g/cm³</td>
</tr>
<tr>
<td>ความหนาแน่นสัมพันธ์</td>
<td>ไม่มีการกำหนด</td>
</tr>
<tr>
<td>ความหนาแน่นของไอ</td>
<td>ไม่มีการกำหนด</td>
</tr>
<tr>
<td>อัตราการระเหย</td>
<td>ไม่มีการกำหนด</td>
</tr>
<tr>
<td>ความสามารถในการละลาย</td>
<td>ไม่ได้กำหนด</td>
</tr>
<tr>
<td>สัมประสิทธิ์การแยกตัว</td>
<td>ไม่ได้กำหนด</td>
</tr>
<tr>
<td>ความหนืด</td>
<td>ไม่ได้กำหนด</td>
</tr>
<tr>
<td>ปริมาณส่วนประกอบตัวทำละลาย</td>
<td>ไม่มีการกำหนด</td>
</tr>
</tbody>
</table>

#### 10 ความเสถียรและความสามารถในการทำปฏิกิริยา

- **10.1 ปฏิกิริยาโต้ตอบ**
  - เป็นอันตรายหากสัมผัสกับผิวหนัง
- **10.2 ความเสถียรภาพทางเคมี**
  - การสลายตัวด้วยความร้อน
  - เงื่อนไขที่ต้องหลีกเลี่ยง: ไม่มีการสลายตัวถ้าใช้ตามรายละเอียดที่ระบุไว้
- **10.3 ความเป็นไปได้ของการเกิดปฏิกิริยาอันตราย**
  - ไม่มีปฏิกิริยาอันตรายที่รู้จัก
- **10.4 เงื่อนไขเพื่อการหลีกเลี่ยง**
  - ไม่มีการกำหนด

#### 11 ข้อมูลเสี่ยงเกี่ยวกับพิษวิทยา

- **11.1 ข้อมูลเสี่ยงเกี่ยวกับผลกระทบทางพิษวิทยา**
  - ความเป็นพิษอย่างสาหัส: เป็นอันตรายต่อดวงตา
- **การจัดแบ่งตามค่า LD/LC50**

<table>
<thead>
<tr>
<th>สารเคมี</th>
<th>LD50 (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TH</td>
<td>2,500 mg/kg (rat)</td>
</tr>
<tr>
<td>TH</td>
<td>805 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

#### จุดประสงค์ในการผลิต

- ผลิตภัณฑ์ไม่ใช่สารจากการสลายตัวที่เป็นอันตรายต่อดวงตา

(ต่อหน้า 6)
12 ข้อมูลการเสียหายกับบุคคลและสิ่งแวดล้อม

· 12.1 ความเป็นพิษ
  ความเป็นพิษที่เกี่ยวกับก้าน
  ไม่มีข้อมูลที่เกี่ยวกับก้าน

· 12.2 การสะสมในทรัพยากรที่อาจเกิดขึ้น
  ไม่มีข้อมูลที่เกี่ยวกับทรัพยากรที่อาจเกิดขึ้น

· 12.3 การสะสมทางชีวภาพที่อาจเกิดขึ้น
  ไม่มีข้อมูลที่เกี่ยวกับการสะสมทางชีวภาพที่อาจเกิดขึ้น

· 12.4 การเปลี่ยนแปลงในดิน
  ไม่มีข้อมูลที่เกี่ยวกับการเปลี่ยนแปลงในดิน

· 12.5 ผลกระทบด้านพิษต่อระบบนิเวศ
  เป็นอันตรายต่อระบบนิเวศ

13 การทิ้งทิ้งการกำจัด

· 13.1 วิธีการกำจัดของเสีย
  ทำแบบไม่ทำให้ผู้รับผิดชอบหรือยังไม่ได้ทำให้เป็นผู้รับผิดชอบหรือยังไม่ได้ทำให้เป็นผู้รับผิดชอบ

· 13.2 วิธีการทิ้งของเสีย
  ไม่มีข้อมูลที่เกี่ยวกับการทิ้งของเสีย

14 ข้อมูลการขนส่ง

· 14.1 เลขที่ UN
  ADR, IMDG, IATA: UN2259

· 14.2 วิธีการจัดส่งสินค้าที่เหมาะสมของ UN
  ADR: 2259 TRIETHYLENETETRAMINE
  IMDG, IATA: TRIETHYLENETETRAMINE

· 14.3 ข้อความเตือนเพื่อการขนส่ง
  ADR, IMDG, IATA

  · ประเภท: 8 สารกักร่อน
  · ผลกระทบต่อการขนส่ง: 8
# ข้อกำหนดสำหรับ EPOFIX HARDENER

<table>
<thead>
<tr>
<th>14.4 กลุ่มของภาชนะบรรจุ</th>
<th>ADR, IMDG, IATA</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.5 สิ่งที่เป็นสิ่งอันตรายต่อสภาพแวดล้อม</td>
<td>ไม่สามารถใช้ได้</td>
<td></td>
</tr>
<tr>
<td>14.6 การป้องกันอันตราย</td>
<td>คาเตือน !: สารกัดกร่อน</td>
<td>80</td>
</tr>
<tr>
<td>หมายเลข EMS</td>
<td>8-05</td>
<td>Alkalis</td>
</tr>
<tr>
<td>Segregation groups</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Stowage Category</td>
<td>SW2 Clear of living quarters.</td>
<td></td>
</tr>
<tr>
<td>Stowage Code</td>
<td>SG35 Stow &quot;separated from&quot; acids.</td>
<td></td>
</tr>
<tr>
<td>Segregation Code</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 14.7 การขนส่งตามภาคผนวก | MARPOL73/78 และรหัส IBC | ไม่สามารถใช้ได้ |

### การขนส่ง/ข้อมูลรายละเอียดเสริม

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

- 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 |

- "กฎระเบียบพัฒนา" ของ UN | UN 2259 TRIETHYLENETETRAMINE, 8, II |

## 15 ข้อมูลรายละเอียดของกฎหมาย

### 15.1 ความปลอดภัย สุขภาพและระเบียบ/กฎหมายสิ่งแวดล้อมโดยเฉพาะของสารหรือสารผสม

#### กรมวิชาการเกษตร
- สารที่ไม่ได้อยู่ในรายการ

#### กรมประมง
- สารที่ไม่ได้อยู่ในรายการ

#### กรมปศุสัตว์
- สารที่ไม่ได้อยู่ในรายการ

#### กรมทรัพยากรน้ำ
- สารที่ไม่ได้อยู่ในรายการ

#### กรมโรงงานอุตสาหกรรม
- สารที่ไม่ได้อยู่ในรายการ

#### กรมธุรกิจพลังงาน
- สารที่ไม่ได้อยู่ในรายการ

## หมายเหตุ

(ผลิตที่หน้า 8)
16 ข้อมูลรายละเอียดอื่นๆ

ข้อมูลรายละเอียดที่ใช้ความรู้จักภูมิของเจ้าปิ่นหลักอย่างไรก็ตามข้อมูลนี้ไม่ใช่การรับประกันจากสถาบันคุณสมบัติเฉพาะของผลิตภัณฑ์และไม่สามารถยืนยันการบังคับใช้ตามกฎหมายที่เกี่ยวพันกับสัญญา

- คําย่อและชื่อย่อที่ผสมขึ้น

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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
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
Skin Corr. 1: Skin corrosion/irritation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
Güvenlik bilgi formu
23 Haziran 2017 tarihli, 30105 sayılı, „Kimyasalların Kaydı, Değerlendirilmesi, İzni Ve Kısıtlanması Hakkında Yönetmelik, Madde 27“ hükümlerine uygun düzenlenmiştir

Bölüm 1: Maddenin/karışının ve şirketin/dağıtıcının tanıması

1.1 Madde/Karışım kimliği
- Ticari adı: EPOFIX HARDENER
- Mal numarası: 1232-B, 1232-H, 1232-SP
- CAS - numarası: 112-24-3
- EC Numarası: 203-950-6
- AT - numarası: 612-059-00-5

1.2 Maddenin veya karışımın ilgili tanımlanmış kullanım ve tavsiye edilmeden kullanım
daha başka önemli bilgi mevcut değildir.

1.3 Güvenlik bilgi formu sağlayıcısının detayları
- Üretici / Teslimatı yapan: Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkcck@aol.com
  www.emsdiasum.com

- Güvenlik hakkında bilgiler veren kesim: Product safety department

1.4 Acil telefon numarası
- ChemTrec 1-800-424-9300 Contract CCN7661
- 1-703-527-3887

Bölüm 2: Zararların tanıması

2.1 Madde veya karışımın sınıflandırılması
- Düzenlemeye göre sınıflandırma (EC) No 1272/2008

GHS05 Aşınma
Skin Corr. 1B H314 Ciddi cilt yanıklarına ve göz hasarına yol açar.

GHS07
Acute Tox. 4 H312 Cilt ile teması halinde zararlıdır.
Skin Sens. 1 H317 Alerjik cilt reaksiyonlarına yol açar.

Aquatic Chronic 3 H412 Sucul ortamda uzun süre kalıcı, zararlı etki.

2.2 Etiket bilgileri
- Yönetmelik (EC) No 1272/2008'e göre etiketleme
Madde SEA yönetmeliğine göre sınıflandırılmış ve etiketlenmiş.
Güvenlik bilgi formu
23 Haziran 2017 tarihli, 30105 sayılı, „Kimyasalların Kaydı, Değerlendirilmesi, İzni Ve Kısıtlanması Hakkında Yönetmelik, Madde 27“ hükümlerine uygun düzenlenmiştir

Baskı tarihi: 08.10.2018
Form No.: 1232-B
Yeniden düzenleme tarihi: 08.10.2018

Ticari adı: EPOFIX HARDENER

(Sayfa 1 ’nin devamı)

· Zararlılık İşaretleri

GHS05  GHS07

· Uyarı Kelimesi Tehlike

· Etiketlendirme için tehlkeyi belirleyici bileşenler:
3,6-diazaoktanetilendiamin

· Zararlılık İradesi
H312 Cilt ile temas halinde zararlıdır.
H314 Ciddi cilt yanıklarına ve göz hasarına yol açar.
H317 Alerjik cilt reaksiyonlarına yol açar.
H412 Sicil ortamda uzun süre kalıcı, zararlı etki.

· Önlem İradesi
P310 Hemen ULUSAL ZEHİR DANIŞMA MERKEZİNİN 114 NOLU TELEFONUNU/doktoru arayın.
P321 Özel müdahale gerekli (etikete bakın).
P362+P364 Bulaşmış giysileri çıkarın ve tekrar kullanmadan önce yıkayın.
P405 Kilit altında saklayın.
P501 İçeriği/kabın yerel/bölgesel/ulusal/uluslararası mevzuata uygun şekilde bertaraf edin.

Bölüm 3: Bileşimi/İçindekiler hakkında bilgi

· 3.1 Maddeler
· CAS-No. tamımı
112-24-3 3,6-diazaoktanetilendiamin
· Teşhis numarası
· EC Numarası: 203-950-6
· AT - numarası: 612-059-00-5

Bölüm 4: İlk yardım önlemleri

· 4.1 İlk yardım önlemlerinin tanıtımı
· Genel uyarları:
Urünün bulaşmış olduğu giyim eşyalarını derhal uzaklaştırmız.
Zehirlenme belirtileri birçok saat sonra başgösterebilir. Bu nedenle doktor kontrolu bir kazadan en az 48 saat sonrasına kadar sürdürülmelidir.
· Teneffüs etikten sonra:
Boşça temiz hava almasını sağlayan her ihtimale karşı doktora başvurmalıdır.
Baygınlık halinde yatırılması ve taşınması sabit yan pozisyonu olmalıdır.

(Devamı sayfa 3’de)
Güvenlik bilgi formu
23 Haziran 2017 tarihli, 30105 sayılı, „Kimyasalların Kaydı, Değerlendirilmesi, İzni Ve Kişitlanması Hakkında Yönetmelik,
Madde 27“ hükümlerine uygun düzenlenmiştir

Baskı tarihi: 08.10.2018 Yeniden düzenleme tarihi: 08.10.2018

Ticari adı: EPOFIX HARDENER

· Cilde temas ettikten sonra: Derhal su ve sabunla yıkarak iyice durulayınız.
· Gözlerle temas ettikten sonra: Gözleri, gözkapakları açık bir şekilde birkaç dakika süreyle akan suyun altında tutunuz ve doktora başvurunuz.
· Yuttukta sonrัดan görülen en önemli belirtiler ve etkiler: Daha başka önemli bilgi mevcut değildir.
· 4.3 Acil tıbbi müdahale ve özel tedavi gerektiği için işaretler: Daha başka önemli bilgi mevcut değildir.

Bölüm 5: Yangınlı mücadele önlemleri

· 5.1 Yangın söndürücüler: Yangın söndürme önlemlerini çevreye uydurunuz.
· Elverişli söndürücü maddeler: Yangın söndürme önlemlerini çevreye uydurunuz.
· Yangın söndürme ekpleri için tavsiyeler: Özel önlemlerin alınması gerekmez.

Bölüm 6: Kaza sonucu yayılma önlemleri

· 6.1 Kişisel önlemler, koruyucu ekipman ve acil müdahale planı: Koruyucu ekipman takınız. Korunmamı sağlayın.
· 6.2 Çevresel önlemler: Sulara ya da kanalizasyona karışmasını halinde yetkili resmi makamlara haber veriniz.
· 6.3 Kontrol altında tutma ve temizleme için yöntem ve malzemeler: Sıvı bağlayıcı malzemeye (Kum, diyatomit, asit bağlayıcı, general bağlayıcı, un halinde testere taşıt) ile eminiz. Nötrleyici malzemeyi uygulayınız.
· 6.4 Diğer bölümlere atıflar: Güvenli kullanım ile ilgili bilgileri 7. bölümden alınınız.

Bölüm 7: Elleçleme ve depolama

· 7.1 Güvenli elleçleme için önlemler: Çalışılan yerin iyi havalanmasını / havanın iyi emilmesini sağlayın.
· Yangın ve patlamadan korunmak için uyarlar: Özel önlemlerin alınması gerekmez.
· 7.2 Birliktede bulunmamı gereken maddeleri de içeren güvenli depolama koşulları: Depolama:
· Depolarda ve kaplarda aranan özellikleri: Belirli şartlar aranması.
· Birarada depolama ile ilgili uyarlar: Gerekli değil.
· Depolama şartları ile ilgili diğer bilgiler: Kabı sızdırmayacak şekilde kapalı tutunuz.
· 7.3 Belirli son kullanımlar: Daha başka önemli bilgi mevcut değildir.
**Bölüm 8: Maruz kalma kontrolü/kişisel korunma**

- **Teknik tesisatların şekillendirilmesi ile ilgili ek bilgiler:** Başka bilgi yoktur, madde 7’den bakınız.

- **8.1 Kontrol parametreleri**
- Çalışma yeri ile ilgili, kontrol edilmesi gerekken sınırları olan bileşenler: Kalkmıştır.
- Ek uyarılar: Düzenlenmediği tarihe geçerli listeler esas alınması.

- **8.2 Maruz kalma kontrolü**
- **Kişisel koruyucu ve sihhi önlemler:**
  - Genel koruyucu ve sıhhi önlemler:
    - Gıda maddelerinden, içeceklerden ve yem maddelerinden uzak tutunuz.
    - Kişisel koruyucu teçhizat: Kalkmıştır.
    - Telefon numarası derhal çıkartınız.
    - Molasızdan önce ve mesai sonunda ellerinizi yıkayın ız.
    - Gözlerinize ve cildinize de gözden kaçınınız.
  - Nefes koruyucu önlemler:
    - Kısa süreli ya da düşük ölçüde olumsuz tesir altında kalındığında nefes filtre aleti, yoğun bir şekilde ya da uzun süre etkisi altında Kalındığında çevredeki havadan bağımsız nefes koruyucu cihaz kullanınız.

- **Elleri koruyucu:**
  - Koruyucu eldivenler
  - Eldiven malzemesi ürün / malzeme / hazırlanan madde ile ilgili olarak geçirmez ve dayanıklı olmalıdır.
  - Eldiven malzemesi ürün / malzeme / hazırlanan madde ile ilgili olarak geçirmez ve dayanıklı olmalıdır.
  - Eldiven malzemesi ürün / malzeme / hazırlanan madde ile ilgili olarak geçirmez ve dayanıklı olmalıdır.
  - Eldiven malzemesi ürün / malzeme / hazırlanan madde ile ilgili olarak geçirmez ve dayanıklı olmalıdır.
  - Eldiven malzemesi ürün / malzeme / hazırlanan madde ile ilgili olarak geçirmez ve dayanıklı olmalıdır.
  - Eldiven malzemesi ürün / malzeme / hazırlanan madde ile ilgili olarak geçirmez ve dayanıklı olmalıdır.
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  - Eldiven malzemesi ürün / malzeme / hazırlanan madde ile ilgili olarak geçirmez ve dayanıklı olmalıdır.
  - Eldiven malzemesi ürün / malzeme / hazırlanan madde ile ilgili olarak geçirmez ve dayanıklı olmalıdır.
  - Eldiven malzemesi ürün / malzeme / hazırlanan madde ile ilgili olarak geçirmez ve dayanıklı olmalıdır.

- **Gözleri koruyucu:**
  - Kenarları tam kapatan koruyucu gülüklük

**Bölüm 9: Fiziksel ve kimyasal özellikler**

- **9.1 Temel fiziksel ve kimyasal özellikler hakkında bilgi**
  - **Görünüm**
    - Biçim: Sıvı
    - Renk: Açık sarı
    - Koku: Amin gibi
    - Koku eğrği: Belirli değil.
    - **pH - değeri:** Belirli değil.
### Güvenlik bilgi formu

23 Haziran 2017 tarihli, 30105 sayılı, "Kimyasalların Kaydı, Değerlendirilmesi, İzni Ve Kısıtlanması Hakkında Yönetmelik, Madde 27" hükümlerine uygun düzenlenmiştir

**Baskı tarihi:** 08.10.2018  
**Yeniden düzenleme tarihi:** 08.10.2018

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**Form No.:** 1232-B  
**Ticari adı:** EPOFIX HARDENER

---

<table>
<thead>
<tr>
<th><strong>Durum değişikliği</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erime noktası/donma noktası</td>
<td>12 °C</td>
</tr>
<tr>
<td>İlk kaynama noktası ve kaynama aralığı</td>
<td>~278 °C</td>
</tr>
</tbody>
</table>

| **Parlama noktası** | 135 °C |
| **Alevlenirlik (kati, gaz)** | Uygulanamaz |
| **Tutuşma ısısı** | 335 °C |
| **Bozunma sıcaklığı** | Beliri değil. |
| **Kendiliğinden tutuşma sıcaklığı** | Beliri değil. |

<table>
<thead>
<tr>
<th><strong>Patlama özellikleri</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Üründen parlama tehlakesi yoktur.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Patlama sınırları:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alt: Beliri değil.</td>
</tr>
<tr>
<td>Üst: Beliri değil.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Buhar basınçları 20 °C'de:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alt: 0,01 hPa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Yoğunluk 20 °C'de:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>0,982 g/cm³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Bağlı yoğunluk</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beliri değil.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Parlama sıcaklığı</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beliri değil.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Çözülme kabiliyeti / karışma kabiliyeti</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>syla: Tamamen karıştırılabilir niteliktedir.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Dağıtım katsayısı:</strong> n-oktanol/su</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beliri değil.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Akışkanlık</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dinamik: Beliri değil.</td>
</tr>
<tr>
<td>Kinematik: Beliri değil.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Çözücü madde oranı:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC (CE) 0,00 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Katı madde oranı:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>%0.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>9.2 Diğer bilgiler</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Daha başka önemli bilgi mevcut değildir.</td>
</tr>
</tbody>
</table>

---

### Bölüm 10: Kararlılık ve tepkime

- **10.1 Tepkime** Daha başka önemli bilgi mevcut değildir.
- **10.2 Kimyasal kararlılık**
  - Termik ayrışma / kaçınılması gereken şartlar: Usulüne uygun şekilde kullanıldığında ayrışma olmaz.
  - 10.3 Zararlı reaksiyon olasılığı Tehlikeli reaksiyonları düyulmamıştır.
- **10.4 Kaçınılması gereken durumlar** Daha başka önemli bilgi mevcut değildir.
- **10.5 Uyumuz malzemeler** Daha başka önemli bilgi mevcut değildir.
- **10.6 Zararlı bozunma ürünler** Ayırışında oluşan tehliki ürünler düyulmamıştır.

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(Devami sayfa 6 'da)
Bölüm 11: Toksikolojik bilgiler

- 11.1 Toksikolojik etkiler hakkında bilgi
- Akut toksisite
  Cilt ile teması halinde zararlıdır.

- Sınıflandırma için önemli olan LD/LC50 - değerleri (toksikolojik deney değerleri)

<table>
<thead>
<tr>
<th>Ağırdan LD50</th>
<th>2.500 mg/kg (rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ciltten LD50</td>
<td>805 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- Asıl tahriş edici etkisi:
- Cilt aşırı ağırdan: Ciddi cilt yanıkları ve göz hasarına yol açar.
- Ciddi göz hasarları: Ciddi cilt yanıkları ve göz hasarlarına yol açar.
- Solunum yolları veya cilt hassaslaştırıcı: Alerjik cilt reaksiyonlarına yol açar.

- Asırdığı grupların potansiyel etkilerine dair bilgiler:
- CMR-etkileri (kanser üretici, irsiyet değiştirici ve üremeyi tehdit edici)
- Eşey hücre mutajenitesi: Mevcut bilgilere göre, sınıflandırma kriterlerini karşılamamaktadır.
- Kanserojenite: Mevcut bilgilere göre, sınıflandırma kriterlerini karşılamamaktadır.
- Üreme sistemi toksisitesi: Mevcut bilgilere göre, sınıflandırma kriterlerini karşılamamaktadır.
- BHOT - tek maruz kalma: Mevcut bilgilere göre, sınıflandırma kriterlerini karşılamamaktadır.
- BHOT - tekrarlı maruz kalma: Mevcut bilgilere göre, sınıflandırma kriterlerini karşılamamaktadır.
- Aspirasyon zararı: Mevcut bilgilere göre, sınıflandırma kriterlerini karşılamamaktadır.

Bölüm 12: Ekolojik bilgiler

- 12.1 Toksosite
- Su toksisitesi: Daha başka önemli bilgi mevcut değildir.
- 12.2 Kalıcı ve bozunabilirlik: Daha başka önemli bilgi mevcut değildir.
- 12.3 Biyobirikim potansiyeli: Daha başka önemli bilgi mevcut değildir.
- 12.4 Toprakta hareketlilik: Daha başka önemli bilgi mevcut değildir.
- Ökotoksik etkileri:
- Not: Balıklar için zararlı
- Diğer ekolojik uyarlar:
- Genel uyarılar:
  - Suyu tehdit sınıfı 2 (): suyu tehdit edicidir
  - Yeraltı suyunun, duran ve akan sulara ve kanalizasyona ulaşmasını önleyiniz.
  - Suların dengesiz olması ve çocukların ve hayvanların suya erişimini önleyiniz.

- 12.5 PBT ve vPvB değerlendirmesinin sonuçları
- PBT: Uygulanamaz.
- vPvB: Uygulanamaz.
- 12.6 Diğer olumsuz etkiler: Daha başka önemli bilgi mevcut değildir.
Güvenlik bilgi formu
23 Haziran 2017 tarihli, 30105 sayılı, „Kimyasalların Kaydı, Değerlendirilmesi, İzin Ve Kısıtlanması Hakkında Yönetmelik, Madde 27“ hükümlerine uygun düzenlenmiştir

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Ticari adı: EPOFIX HARDENER

Bölüm 13: Bertaraf etme bilgileri

- **13.1 Atık işleme yöntemleri**
  - **Tavsiye:** Ev çöpüyle beraber tasfiye edilmesi yasaktır. Kanalizasyona ulaşımsız önleyiniz.

- **Temizlenmiş ambalajlar:**
  - **Tavsiye:** Tasfiyesi resmi makamların yönetmeliklerine göre yapılır.
  - **Tavsiye olunan temizlik maddesi:** Su, gerekirse temizlik maddeleri katmak suretiyle.

Bölüm 14: Taşımacılık bilgisi

- **14.1 UN Numarası**
  - ADR, IMDG, IATA: UN2259

- **14.2 UN uygun taşımacılık ismi**
  - ADR: 2259 TRİETİLENTETRAMİN
  - IMDG, IATA: TRIETHYLENETETRAMINE

- **14.3 Taşımacılık zararları**
  - ADR, IMDG, IATA

- **14.4 Ambalaj grubu**
  - ADR, IMDG, IATA: II

- **14.5 Çevresel zararlar**
  - Uygulanamaz.

- **14.6 Kullanıcılar için özel önlemler**
  - Kemer (tehlike) sayısı: 
    - Uyarı: Aşındırtıcı maddeler: 80
  - EMS - numarası: 
    - Uyarı: Aşındırtıcı maddeler: 8-05
  - Alkalis
  - B
  - SW2 Clear of living quarters.
  - SG35 Stow "separated from" acids.

- **14.7 MARPOL 73/78 EK II ve IBC Koduna göre Toplu Taşımacılık**
  - Uygulanamaz.

- **Nakliyat/diğer bilgiler:**

  - ADR: 1L Kod: E2
  - İç ambalaj başına maksimum net miktar: 30 ml
  - Dış ambalaj başına maksimum net miktar: 500 ml

  - Taşıma kategorisi: 2
  - Tünel kısıtlama kodu: E
Güvenlik bilgi formu
23 Haziran 2017 tarihli, 30105 sayılı, „Kimyasalların Kaydı, Değerlendirilmesi, İzin Ve Kisitlanması Hakkında Yönetmelik,
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- IMDG
  - Limited quantities (LQ) 1L
    Code: E2
  - Excepted quantities (EQ)
    Maximum net quantity per inner packaging: 30 ml
    Maximum net quantity per outer packaging: 500 ml
- UN "Model Düzenleme":
  UN 2259 TRİTILENTETRAMİN, 8, II

Bölüm 15: Mevzuat bilgisi

- 15.2 Kimyasal güvenlik değerlendirme: Bir Kimyasal güvenlik değerlendirme yapılmamıştır.

Bölüm 16: Diğer bilgiler

Veriler bugünkü bilgi durumumuzda istinat etmektedir, ancak ürün özellikleri ile ilgili teminat teşkil etmezler ve akıd bir hükümli iliski teşkil etmezler.

- Kısaltmalar ve:
  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
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  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
  Acute Tox. 4: Akut toksisite – Kategori 4
  Skin Corr. 1B: Cilt aşınması/tahriş – Kategori 1B
  Skin Sens. 1: Cilt hassaslaştariosluğu – Kategori 1
  Aquatic Chronic 3: Sucul ortam için zararlı - azan süreli suçal zararlılık – Kategori 3