1 Identification

· **Product identifier**
  · Trade name: 50-3150RFRBK
  · Article number: Epoxy Resin Formulation

· **Relevant identified uses of the substance or mixture and uses advised against**
  No further relevant information available.

· **Details of the supplier of the safety data sheet**
  · Manufacturer/Supplier: Epoxies, Etc.
  · Article number: Epoxy Resin Formulation
  · Relevant identified uses of the substance or mixture and uses advised against
  · No further relevant information available.

· **Emergency telephone number**
  · General Telephone: 401-946-5564
  · Information department: Product safety department.
  · Manufacturer/Supplier: Epoxies, Etc.
  · Article number: Epoxy Resin Formulation
  · Relevant identified uses of the substance or mixture and uses advised against
  · No further relevant information available.

2 Hazard(s) identification

![GHS07](image)

· **Classification of the substance or mixture**
  Skin Irrit. 2  H315  Causes skin irritation.
  Eye Irrit. 2A H319  Causes serious eye irritation.
  Skin Sens. 1 H317  May cause an allergic skin reaction.

· **Label elements**
  · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms GHS07
  · Signal word Warning

· **Hazard-determining components of labeling:**
  reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)
  Oxirane, [4-(1,1 dimethylethyl)phenoxy]methyl

· **Hazard statements**
  Causes skin irritation.
  Causes serious eye irritation.
  May cause an allergic skin reaction.

· **Precautionary statements**
  If medical advice is needed, have product container or label at hand
  Keep out of reach of children
  Read label before use.
  Avoid breathing dust/fume/gas/mist/vapors/spray
  Wear protective gloves.
  Wear eye protection / face protection.
  Wash thoroughly after handling.
  Contaminated work clothing must not be allowed out of the workplace.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Specific treatment (see on this label).
  Wash contaminated clothing before reuse.
  If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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

- **HMIS-ratings (scale 0 - 4)**
  - Health = 1
  - 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:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Number</th>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>25068-38-6</td>
<td>reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)</td>
<td>25-50%</td>
</tr>
<tr>
<td>3101-60-8</td>
<td>Oxiran, [4-(1,1 dimethylethyl)phenoxy]methyl</td>
<td>2.5-10%</td>
</tr>
</tbody>
</table>

### 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:**
  Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
  In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
  Immediately wash with water and soap and rinse thoroughly.
  If skin irritation continues, consult a doctor.
- **After eye contact:**
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
  Seek immediate medical advice.
  A person vomiting while lying on their back should be turned onto their side.
  DO NOT attempt to give anything by mouth to an unconscious person.
- **Information for doctor:**
  - **Most important symptoms and effects, both acute and delayed** No further relevant information available.
41.0

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

### 5 Fire-fighting measures

- **Extinguishing media**
  
  CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- **Suitable extinguishing agents:**
  
  No further relevant information available.

- **Advice for firefighters**
  
  Wear self-contained respiratory protective device.
  
  Wear fully protective suit.
  
  Do not inhale explosion gases or combustion gases.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  
  Wear protective clothing.
  
  Keep people at a distance and stay upwind.

- **Environmental precautions**
  
  Do not allow product to reach sewage system or any water course.
  
  Inform respective authorities in case of seepage into water course or sewage system.
  
  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).
  
  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**
  
  Store in cool, dry place in tightly closed receptacles.
  
  Ensure good ventilation/exhaustion at the workplace.
  
  Prevent formation of aerosols.

- **Conditions for safe storage, including any incompatibilities**
  
  No special measures required.

- **Storage:**
  
  **Requirements to be met by storerooms and receptacles:**
  
  Store only in the original receptacle.
  
  Store indoors.

- **Information about storage in one common storage facility**
  
  Not required.

- **Further information about storage conditions**
  
  Keep receptacle tightly sealed.
8 Exposure controls/personal protection

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

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

- **Control parameters**
  - **Components with limit values that require monitoring at the workplace:**
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- **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.
    Do not inhale gases / fumes / aerosols.
    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:**
  - **Material of gloves**
    The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.
  - **Penetration time of glove material**
    The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.
  - **Eye protection:**
    Tightly sealed goggles

- **Body protection:** Protective work clothing
9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
- Appearance:
  - Form: Liquid
  - Color: According to product specification
- Odor:
- Odour threshold:
- pH-value:
- Change in condition:
  - Melting point/Melting range: Undetermined.
  - Boiling point/Boiling range: > 260 °C (> 500 °F)
- Flash point:
- Flammability (solid, gaseous):
- Ignition temperature:
  - Decomposition temperature: Not determined.
- Auto igniting:
- Danger of explosion:
  - Lower: Not determined.
  - Upper: Not determined.
- Vapor pressure:
- Density:
- Relative density:
- Vapour density:
- Evaporation rate:
- Solubility in / Miscibility with Water:
- Partition coefficient (n-octanol/water):
- Viscosity:
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- Solvent content:
  - Organic solvents: 0.0 %
  - VOC content: 0.2 g/l / 0.00 lb/gl
- Solids content: 94.8 %
- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity
- Chemical stability
- Thermal decomposition / conditions to be avoided:
  - No decomposition if used and stored according to specifications.
Trade name: 50-3150RFRBK

(Contd. of page 5)

Avoid elevated temperatures.

- **Possibility of hazardous reactions**
  Reacts with amines.
  Reacts with catalysts, oxidizing agents and strong alkali.
  Hazardous polymerization may occur if mixed with amines in large masses and/or with heat.

- **Conditions to avoid**
  No further relevant information available.

- **Incompatible materials**: Strong acids, strong bases, strong oxidizers, amines, and mercaptans.

- **Hazardous decomposition products**:
  Carbon monoxide and carbon dioxide
  Unknown hydrocarbons.

### 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity**:
  - **Primary irritant effect**:
    - on the skin: Irritant to skin and mucous membranes.
    - on the eye: Irritating effect.
  - **Sensitization**: Sensitization possible through skin contact.
  - **Additional toxicological information**:
    The product shows the following dangers according to internally approved calculation methods for preparations:
    Irritant

- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    - 1333-86-4 Carbon black wetted form, non-particulate: 2B
  - **NTP (National Toxicology Program)**
    - None of the ingredients is listed.
  - **OSHA-Ca (Occupational Safety & Health Administration)**
    - None of the ingredients is listed.

### 12 Ecological information

- **Toxicity**
  - **Aquatic toxicity**: 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**: Toxic for fish

- **Additional ecological information**:
  - **General notes**:
    - Water hazard class 3 (Self-assessment): extremely hazardous for water
    - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
    - Danger to drinking water if even extremely small quantities leak into the ground.
    - Also poisonous for fish and plankton in water bodies.
    - Toxic for aquatic organisms

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

(Contd. on page 7)
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. Dispose of in accordance to all local, state, and/or national regislation.

14 Transport information

- **UN-Number**
  - DOT: Not Applicable
  - ADR, IMDG, IATA: UN3082

- **UN proper shipping name**
  - DOT: 3082 Environmentally hazardous substances, liquid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700))
  - ADR: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)), MARINE POLLUTANT
  - IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700))
  - IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700))

- **Transport hazard class(es)**
  - DOT: Not Applicable
  - ADR, IMDG, IATA: Class 9 Miscellaneous dangerous substances and articles

- **Packing group**
  - DOT: Not Applicable
  - ADR, IMDG, IATA: III

- **Environmental hazards:**
  - Product contains environmentally hazardous substances: reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)
  - Marine pollutant:
    - Symbol (fish and tree)
  - Special marking (ADR):
    - Symbol (fish and tree)
Trade name: 50-3150RFRBK

- Special marking (IATA): Symbol (fish and tree)
- Special precautions for user: Warning: Miscellaneous dangerous substances and articles
- Danger code (Kemler): 90
- EMS Number: F-A,S-F
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.
- Transport/Additional information:
-- DOT
-- Remarks: Not regulated.
- UN "Model Regulation": UN3082, Environmentally hazardous substances, liquid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \(\leq\) 700)), 9, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Section 355 (extremely hazardous substances): None of the ingredient is listed.
  - Section 313 (Specific toxic chemical listings): None of the ingredients is listed.
  - TSCA (Toxic Substances Control Act): All ingredients are listed.
  - Proposition 65
    - Chemicals known to cause cancer: 1333-86-4 Carbon black wetted form, non-particulate
    - Chemicals known to cause reproductive toxicity for females: None of the ingredients is listed.
    - Chemicals known to cause reproductive toxicity for males: None of the ingredients is listed.
    - Chemicals known to cause developmental toxicity: None of the ingredients is listed.
  - Cancerogenity categories
    - EPA (Environmental Protection Agency): None of the ingredients is listed.
    - TLV (Threshold Limit Value established by ACGIH) 1333-86-4 Carbon black wetted form, non-particulate A4
    - NIOSH-Ca (National Institute for Occupational Safety and Health)
      1333-86-4 Carbon black wetted form, non-particulate
  - GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
  - Hazard pictograms GHS07
  - Signal word Warning

(Contd. on page 9)
Trade name: 50-3150RFRBK

- Hazard-determining components of labeling:
  reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)
  Oxirane, [4-(1,1 dimethylethyl)phenoxy]methyl

- Hazard statements
  Causes skin irritation.
  Causes serious eye irritation.
  May cause an allergic skin reaction.

- Precautionary statements
  If medical advice is needed, have product container or label at hand.
  Keep out of reach of children.
  Read label before use.
  Avoid breathing dust/fume/gas/mist/vapors/spray
  Wear protective gloves.
  Wear eye protection / face protection.
  Wash thoroughly after handling.
  Contaminated work clothing must not be allowed out of the workplace.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
  Continue rinsing.
  Wash contaminated clothing before reuse.
  If skin irritation or rash occurs: Get medical advice/attention.
  If eye irritation persists: Get medical advice/attention.
  If on skin: Wash with plenty of water.
  Take off contaminated clothing and wash it before reuse.
  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. The information given and the recommendations made herein apply to our product alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guarantee of accuracy is made. It is the user's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

- Department issuing SDS: Product safety department.
- Contact: Paul C. Harrington
- Date of preparation / last revision 02/23/2016 / -

- Abbreviations and acronyms:
  RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
  ICAO: International Civil Aviation Organisation
  ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  VOC: Volatile Organic Compounds (USA, EU)
Trade name: 50-3150RFRBK

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
1 Identification

- **Product identifier**
  - **Trade name:** CAT.190CL
  - **CAS Number:** 112-57-2
  - **EC number:** 203-986-2
  - **Index number:** 612-060-00-0
- **Relevant identified uses of the substance or mixture and uses advised against**
  No further relevant information available.
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** Epoxies, Etc.
    21 Starline Way
    Cranston, RI 02921
    USA
  - **Information department:** Product safety department.
  - **Emergency telephone number:** Domestic: 800-255-3924  International: +01-813-248-0585

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS05 Corrosion
  - GHS07
  - Skin Corr. 1B  H314  Causes severe skin burns and eye damage.
  - Acute Tox. 4  H302  Harmful if swallowed.
  - 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).
  - **Signal word** Danger
- **Hazard-determining components of labeling:**
  - tetraethylenepentamine
- **Hazard statements**
  - Harmful if swallowed or in contact with skin.
  - Causes severe skin burns and eye damage.
  - May cause an allergic skin reaction.
- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Do not breathe dusts or mists.
  - Wear protective gloves.

(Contd. on page 2)
Wear protective gloves / protective clothing.  
Wear eye protection / face protection.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Contaminated work clothing must not be allowed out of the workplace.  
IF ON SKIN (or hair): Remove/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).  
If swallowed: Call a poison center/doctor if you feel unwell.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Wash contaminated clothing before reuse.  
If skin irritation or rash occurs: Get medical advice/attention.  
If swallowed: Rinse mouth. Do NOT induce vomiting.  
Take off contaminated clothing and wash it 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  

- **Other hazards**  
  Additional Health Hazards: Corrosive to the eyes, skin, and respiratory tract. May be toxic if absorbed through skin.
  
  Inhalation: May cause severe eye, skin, and respiratory tract burns. May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of the respiratory system.  
  
  Eye Contact: Causes eye burns. May cause blindness. Severe eye irritation.  
  
  Skin contact: Causes skin burns.  
  
  Ingestion: Causes Severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.  

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

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
  - CAS No. Description  
    - 112-57-2 tetraethylenepentamine
3 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. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
  In case of unconsciousness place patient stably in side position for transportation.
· After skin contact:
  Immediately wash with water and soap and rinse thoroughly.
  If skin irritation continues, consult a doctor.
  Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay.
  Initiate and maintain gentle and continuous irrigation with water until the patient receives medical care. If medical care is not promptly available, continue to irrigate (use soap if available) for one hour. Cover the wound with sterile dressing. Take off contaminated clothing and shoes immediately. Do not reuse clothing until thoroughly cleaned.

NOTE TO PHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation.
· After eye contact:
  Rinse opened eye for several minutes under running water. Then consult a doctor.
  Hold eyelids apart, initiate and maintain gentle and continuous irrigation of the eye with water until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Rinse immediately with plenty of water also under the eyelids for atleast 20 minutes.
· After swallowing:
  Immediately call a doctor.
  Drink copious amounts of water and provide fresh air. Immediately call a doctor.
  Never give anything by mouth to an unconscious person. Do not induce vomiting. Give one glass of water unless victim is drowny, convulsing, or unconscious. Seek medical attention immediately.
· 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:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  Use fire fighting measures that suit the environment.
· For safety reasons unsuitable extinguishing agents:
  Do not use water in a jet. Product will float. Water or fog may cause frothing which can be violent, especially if sprayed into containers of hot or burning liquid.
· Special hazards arising from the substance or mixture
  Material will not burn unless preheated. Delayed lung damage (pulmonary edema) can be experienced after exposure to combustion products, sometimes hours after the exposure. May generate ammonia gas, toxic nitrogen oxide gases and other potentially hazardous nitrogen-containing compounds may be released upon combustion.

Use of water to fight fire may result in the formation of very toxic aqueous solutions. Incomplete combustion may
form carbon monoxide. Downwind personnel must be evacuated. Burning produces obnoxious and toxic fumes.

- **Advice for firefighters**
  - Cool fire exposed containers with water.
- **Protective equipment:**
  - Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves, and rubber boots) including a positive pressure NIOSH approved self-contained breathing apparatus.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Wear protective equipment. Keep unprotected persons away.
  - Do not allow to enter sewers/surface or ground water.
- **Environmental precautions:**
  - Inform respective authorities in case of seepage into water course or sewage system.
  - Use neutralizing agent.
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- **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.
- **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

- **Precautions for safe handling**
  - DANGER: Corrosive
  - Avoid contact with skin and eyes. Emergency Showers and eye wash stations should be readily accessible. Use only in well-ventilated areas. Avoid breathing vapors and/or aerosols.
  - Heating this product above 300 Deg. F in the presence of air may cause slow oxidative decomposition; above 500 Deg. F, polymerization may occur. Some epoxy resins can produce exothermic reactions which in large masses can cause runaway polymerization. Fumes and vapors from these thermal and chemical decomposition may be extremely toxic. Use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.
  - Information about protection against explosions and fires: No special measures required.
- **Conditions for safe storage, including any incompatibilities**
  - Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.
  - 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:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Limit Value</th>
<th>Exposure Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>112-57-2 tetraethylenepentamine</td>
<td>5 mg/m³</td>
<td>Skin; DSEN</td>
</tr>
</tbody>
</table>

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

- Exposure controls

- Personal protective equipment:

  - General protective and hygienic measures:
    - 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: Not required.
  
  - 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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
  
  - Eye protection:

    - Tightly sealed goggles
      
      Full face shields with tightly sealed goggles underneath. Contact lenses should not be worn.
  
  - Body protection:

    - Impervious protective clothing

9 Physical and chemical properties

- Information on basic physical and chemical properties

  - General Information

  - Appearance:
    
    - Form: Liquid
    - Color: According to product specification
    - Odor: Amine-like

(Contd. on page 6)
**Trade name:** CAT.190CL

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour threshold</td>
<td>Not determined.</td>
</tr>
<tr>
<td>pH-value</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Change in condition</td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>333 °C (631 °F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>163 °C (325 °F)</td>
</tr>
<tr>
<td>Flammability (solid, gaseous)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Auto igniting</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Danger of explosion</td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>Explosion limits</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapor pressure at 20 °C (68 °F)</td>
<td>0.01 hPa</td>
</tr>
<tr>
<td>Density at 20 °C (68 °F)</td>
<td>1 g/cm³ (8.345 lbs/gal)</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with Water</td>
<td>Not miscible or difficult to mix.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Organic solvents</td>
<td>0.0 %</td>
</tr>
<tr>
<td>Solids content</td>
<td>100.0 %</td>
</tr>
<tr>
<td>Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

**10 Stability and reactivity**

- Reactivity
- Chemical stability
  - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
  - **Possibility of hazardous reactions** Hazardous polymerization may occur with epoxy resins in large masses.
  - **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** Sodium hypochlorite, lewis or mineral acids, Organic bases such as primary and secondary aliphatic amines, ketones, aldehydes, and oxidizing agents. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. A reaction accompanied by large heat release occurs when the product is mixed with acids.
11 Toxicological information

- **Hazardous decomposition products:**
  
  Nitrogen oxides, ammonia, carbon monoxide and unidentified organic compounds (some containing nitrogen) may be formed during thermal or oxidative decomposition or combustion. Nitrogen oxide can react with water vapors to form corrosive nitric acid.

<table>
<thead>
<tr>
<th><strong>LD/LC50 values that are relevant for classification:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>112-57-2 tetraethylenepentamine</strong></td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>

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

- **Carcinogenic categories**
  
  - **IARC (International Agency for Research on Cancer)**
    
    Substance is not listed.
  
  - **NTP (National Toxicology Program)**
    
    Substance is not listed.
  
  - **OSHA-Ca (Occupational Safety & Health Administration)**
    
    Substance is not listed.

12 Ecological information

- **Toxicity**
  
  - **Aquatic toxicity:** No further relevant information available.
  
  - **Persistence and degradability** No further relevant information available.
  
  - **Bioaccumulative potential** No further relevant information available.
  
  - **Mobility in soil** No further relevant information available.
  
  - **Ecotoxicical effects:**
    
    - **Remark:** Toxic for 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.
      
      Also poisonous for fish and plankton in water bodies.
      
      Toxic for aquatic organisms

- **Results of PBT and vPvB assessment**
  
  - **PBT:** Not applicable.
  
  - **vPvB:** Not applicable.
40.0

· 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. Dispose of in accordance to all local, state, and/or national legislation.

14 Transport information

<table>
<thead>
<tr>
<th>DOT, ADR, IMDG, IATA</th>
<th>UN2320</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td>Tetraethylenepentamine</td>
</tr>
<tr>
<td>ADR</td>
<td>2320 Tetraethylenepentamine, ENVIRONMENTALLY HAZARDOUS</td>
</tr>
<tr>
<td>IMDG</td>
<td>TETRAETHYLENEPENTAMINE, MARINE POLLUTANT</td>
</tr>
<tr>
<td>IATA</td>
<td>TETRAETHYLENEPENTAMINE</td>
</tr>
</tbody>
</table>

· UN proper shipping name

· Class 8 Corrosive substances
· Label 8

· ADR, IMDG

· Class 8 Corrosive substances
· Label 8

· IATA

· Class 8 Corrosive substances
· Label 8

· Packing group
  · DOT, ADR, IMDG, IATA III
Trade name: CAT.190CL

- Environmental hazards:
- Marine pollutant: Yes
  Symbol (fish and tree)
- Special marking (ADR):
  Symbol (fish and tree)
- Special precautions for user: Warning: Corrosive substances
- Danger code (Kemler): 80
- EMS Number: F-A,S-B
- Segregation groups: Alkalis
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.
- UN "Model Regulation": UN2320, Tetraethylenepentamine, ENVIRONMENTALLY HAZARDOUS, 8, III

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.
- Cancerogenity 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: tetraethylenepentamine

(Contd. on page 10)
Hazard statements
Harmful if swallowed or in contact with skin.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not breathe dusts or mists.
Wear protective gloves.
Wear protective gloves / protective clothing.
Wear eye protection / face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing must not be allowed out of the workplace.

If ON SKIN (or hair): Remove/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).
If swallowed: Call a poison center/doctor if you feel unwell.
If INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
If swallowed: Rinse mouth. Do NOT induce vomiting.
Take off contaminated clothing and wash it 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. The information given and the recommendations made herein apply to our product alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guarantee of accuracy is made. It is the user's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

Department issuing SDS: Product safety department.
Contact: Paul C. Harrington
Date of preparation / last revision 05/01/2015 / -
Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
Trade name: CAT.190CL

LD50: Lethal dose, 50 percent
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1