1. Identification

Product identifier
Product name: EPOCAST-INDUSTRIE HARDENER
Product number: 10075

Recommended use of the chemical and restrictions on use
Application: Hardener.

Details of the supplier of the safety data sheet
Supplier: ITW Performance Polymers
Bay 150
Shannon Industrial Estate
Co. Clare
Ireland
V14 DF82
353(61)771500
353(61)471285
mail@itwpp.com

Emergency telephone number
Emergency telephone: +44(0)1235 239 670 (24h)

2. Hazard(s) identification

Classification of the substance or mixture
Physical hazards: Not Classified
Environmental hazards: Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

Label elements
Pictogram

Signal word: Danger

Hazard statements: H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H410 Very toxic to aquatic life with long lasting effects.
EPOCAST-INDUSTRIE HARDENER

Precautionary statements
P260 Do not breathe vapor/spray.
P261 Avoid breathing vapor/spray.
P264 Wash contaminated skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P352 If on skin: Wash with plenty of water.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/doctor.
P313 If skin irritation or rash occurs: Get medical advice/attention.
P317+A20 Specific treatment (see medical advice on this label).
P318+A40 Specific treatment: Get medical advice/attention.
P321 Specific treatment (see medical advice on this label).
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/container in accordance with national regulations.

Contains
PENTAETHYLENEHEXAMINE

Other hazards
This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>PENTAETHYLENEHEXAMINE</th>
<th>60-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 4067-16-7</td>
<td></td>
</tr>
<tr>
<td>M factor (Acute) = 1</td>
<td>M factor (Chronic) = 1</td>
</tr>
</tbody>
</table>

Classification
Skin Corr. 1B - H314
Eye Dam. 1 - H318
Skin Sens. 1 - H317
Aquatic Acute 1 - H400
Aquatic Chronic 1 - H410

The full text for all hazard statements is displayed in Section 16.

4. First-aid measures

Description of first aid measures

General information
Remove contaminated clothing.

Inhalation
Get medical attention. Move affected person to fresh air at once.

Ingestion
Get medical attention immediately. Do not induce vomiting. Rinse nose, mouth and throat with water. Give plenty of water to drink.

Skin Contact
It is important to remove the substance from the skin immediately. Wash skin thoroughly with soap and water. Get medical attention immediately. Chemical burns must be treated by a physician.
EPOCAST-INDUSTRIE HARDENER

**Eye contact**
Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.

**Most important symptoms and effects, both acute and delayed**

**General information**
The severity of the symptoms described will vary dependent on the concentration and the length of exposure. May cause allergy. May cause hypersensitivity.

**Inhalation**
No specific symptoms known.

**Ingestion**
Chemical burns.

**Skin contact**
Allergic rash. Chemical burns.

**Eye contact**
May cause blurred vision and serious eye damage. Corneal damage.

**Indication of immediate medical attention and special treatment needed**

**Notes for the doctor**
Treat symptomatically.

5. **Fire-fighting measures**

**Extinguishing media**

**Suitable extinguishing media**
Water spray, foam, dry powder or carbon dioxide.

**Unsuitable extinguishing media**
Do not use water jet as an extinguisher, as this will spread the fire.

**Special hazards arising from the substance or mixture**

**Specific hazards**
Vapours/gases/fumes of: Carbon monoxide (CO). Nitrous gases (NOx).

**Hazardous combustion products**
When heated, vapours/gases hazardous to health may be formed.

**Advice for firefighters**

**Protective actions during firefighting**
Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

**Special protective equipment for firefighters**
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

6. **Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions**
Provide adequate ventilation. In case of spills, beware of slippery floors and surfaces. Wear protective clothing as described in Section 8 of this safety data sheet.

**Environmental precautions**

**Environmental precautions**
Avoid discharge to the aquatic environment. Avoid the spillage or runoff entering drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

**Methods and material for containment and cleaning up**

**Methods for cleaning up**
Absorb in vermiculite, dry sand or earth and place into containers. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labeled with correct contents and hazard symbol.

**Reference to other sections**
For personal protection, see Section 8. For waste disposal, see section 13.

7. **Handling and storage**
EPOCAST-INDUSTRIE HARDENER

Precautions for safe handling

Usage precautions Read and follow manufacturer’s recommendations. Do not eat, drink or smoke when using the product. Contaminated clothing and shoes must be discarded. Good personal hygiene procedures should be implemented. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site.

Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container. Keep container dry. Keep container tightly closed. Avoid contact with oxidizing agents. Keep away from food, drink and animal feeding stuffs. Do not store near heat sources or expose to high temperatures.

Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Exposure controls

Protective equipment

Eye/face protection The following protection should be worn: Chemical splash goggles.

Hand protection It is recommended that gloves are made of the following material: Butyl rubber. It should be noted that liquid may penetrate the gloves. Frequent changes are recommended. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. (EN 374)

Other skin and body protection Wear apron or protective clothing in case of contact.

Hygiene measures Use engineering controls to reduce air contamination to permissible exposure level. When using do not eat, drink or smoke. Good personal hygiene procedures should be implemented. Remove contaminated clothing and wash the skin thoroughly with soap and water after work.

Respiratory protection If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Gas filter, type A2. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

Thermal hazards Not applicable.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance Colored liquid.

Color Yellowish.

Odor Amine.

pH pH (concentrated solution): 12.6 Not determined.

Melting point -20°C

Initial boiling point and range 426°C @

Flash point 183°C
## EPOCAST-INDUSTRIE HARDENER

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporation rate</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt;0.1 kPa @ °C</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.003 @ °C</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>500 @ °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>335°C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Other information</td>
<td>None.</td>
</tr>
<tr>
<td>Volatile organic compound</td>
<td>This product contains a maximum VOC content of 0 g/litre.</td>
</tr>
</tbody>
</table>

### 10. Stability and reactivity

**Reactivity**
There are no known reactivity hazards associated with this product.

**Stability**
Stable at normal ambient temperatures and when used as recommended.

**Possibility of hazardous reactions**
The following materials may react with the product: Acids. Not relevant.

**Conditions to avoid**
Avoid exposure to high temperatures or direct sunlight. Avoid contact with strong oxidizing agents.

**Materials to avoid**
Not determined.

**Hazardous decomposition products**
Not known.

### 11. Toxicological information

**Information on toxicological effects**
No data recorded.

**Toxicological effects**

**Specific target organ toxicity - single exposure**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOT - single exposure</td>
<td>None , ,</td>
</tr>
</tbody>
</table>

**Specific target organ toxicity - repeated exposure**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOT - repeated exposure</td>
<td>None , ,</td>
</tr>
</tbody>
</table>

**Inhalation**
No specific health hazards known.

**Ingestion**
Swallowing concentrated chemical may cause severe internal injury. Causes burns.

**Skin Contact**
Corrosive. Prolonged contact causes serious tissue damage.

**Eye contact**
Risk of serious damage to eyes.

**Acute and chronic health hazards**
The product contains an epoxy resin. May cause sensitization or allergic reactions in sensitive individuals.
EPOCAST-INDUSTRIE HARDENER

12. Ecological Information

Ecotoxicity
This substance is not classified as PBT or vPvB according to current EU criteria.

Acute toxicity - fish
LC_50, 96 hours: 180 mg/l, Fish

Acute toxicity - aquatic invertebrates
EC_50, 48 hours: 17.5 mg/l, Daphnia magna

Acute toxicity - aquatic plants
IC_50, 72 hours: 0.7 mg/l, Algae

Persistence and degradability
No data available.

Bioaccumulative potential
Bio-Accumulative Potential -3.67

Mobility in soil
Mobility
Not determined.

Other adverse effects
None known.

13. Disposal considerations

Waste treatment methods
General information
Waste is classified as hazardous waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Disposal methods
Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Waste liquid components should be suitable for incineration at an approved facility. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

Waste class
08 04 09*

14. Transport information

UN Number
UN No. (TDG) 2735
UN No. (IMDG) 2735
UN No. (ICAO) 2735
UN No. (DOT) 2735

UN proper shipping name
Proper shipping name (TDG) AMINES, LIQUID, CORROSIVE, N.O.S. (Pentaethylenehexamine)(ENVIRONMENTALLY HAZARDOUS)
Proper shipping name (IMDG) AMINES, LIQUID, CORROSIVE, N.O.S. (Pentaethylenehexamine)(ENVIRONMENTALLY HAZARDOUS)
Proper shipping name (ICAO) AMINES, LIQUID, CORROSIVE, N.O.S. (Pentaethylenehexamine)(ENVIRONMENTALLY HAZARDOUS)
Proper shipping name (DOT) AMINES, LIQUID, CORROSIVE, N.O.S. (Pentaethylenehexamine)(ENVIRONMENTALLY HAZARDOUS)
EPOCAST-INDUSTRIE HARDENER

Transport hazard class(es)

**TDG class**  8  
**TDG label(s)**  8  
**IMDG Class**  8  
**ICAO class/division**  8  

Transport labels

Packing group

**TDG Packing Group**  III  
**IMDG packing group**  III  
**ICAO packing group**  III  
**DOT packing group**  III  

Environmental hazards

Environmentally Hazardous Substance

Special precautions for user

**EmS**  F-A, S-B  

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  Not relevant.

15. Regulatory information

16. Other information

Revision date  4/4/2018  
Revision  4  
Supersedes date  12/6/2017  
Hazard statements in full  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.