SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name: EPOCAST-INDUSTRIE HARDENER
Product number: 10075
REACH registration number: 01-2119485826-22-XXXX

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Hardener.

1.3. 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

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical hazards: Not Classified
Environmental hazards: Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

2.2. 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

P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
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.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

PENTAETHYLENEHEXAMINE

Supplementary precautionary statements

P260 Do not breathe vapour/ spray.
P261 Avoid breathing vapour/ spray.
P264 Wash contaminated skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
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.
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.

2.3. Other hazards

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

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>PENTAETHYLENEHEXAMINE</th>
<th>60-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 4067-16-7</td>
<td>EC number: 223-775-9</td>
</tr>
<tr>
<td>M factor (Acute) = 1</td>
<td>M factor (Chronic) = 1</td>
</tr>
<tr>
<td>REACH registration number: 01-2119485826-22-0000</td>
<td></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.

SECTION 4: First aid measures

4.1. 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.
EPOCAST-INDUSTRIE HARDENER

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.

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

4.2. 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.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. 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.

5.2. 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.

5.3. 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.

SECTION 6: Accidental release measures

6.1. 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.

6.2. 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.

6.3. 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 labelled with correct contents and hazard symbol.
EPOCAST-INDUSTRIE HARDENER

6.4. Reference to other sections

For personal protection, see Section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. 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.

7.2. 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 oxidising agents. Keep away from food, drink and animal feeding stuffs. Do not store near heat sources or expose to high temperatures.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

DNEL
Industry - Dermal; Long term local effects: 0.044 mg/m³
Industry - Inhalation; Long term systemic effects: 1.59 mg/m³
Industry - Dermal; Long term systemic effects: 0.91 mg/kg/day
Industry - Inhalation; Short term systemic effects: 8550 mg/m³
Consumer - Inhalation; Long term systemic effects: 0.46 mg/m³
Consumer - Inhalation; Short term systemic effects: 2542 mg/m³
Consumer - Oral; Short term systemic effects: 32 mg/kg/day
Consumer - Oral; Long term systemic effects: 0.65 mg/kg/day
Consumer - Dermal; Long term local effects: 0.68 ppm

PNEC
- Fresh water; 0.0025 mg/l
- Marine water; 0.0025 mg/l
- Sediment; 0.22 mg/kg
- Soil; 0.18 mg/kg
- STP; 1.64 mg/l

8.2. 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.
EPOCAST-INDUSTRIE HARDENER

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 European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Thermal hazards
Not applicable.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

**Appearance**
Coloured liquid.

**Colour**
Yellowish.

**Odour**
Amine.

**pH**
\[ \text{pH (concentrated solution): } 12.6 \] Not determined.

**Melting point**
\(-20^\circ\text{C}\)

**Initial boiling point and range**
\(426^\circ\text{C}\)

**Flash point**
\(183^\circ\text{C}\)

**Evaporation rate**
Not applicable.

**Upper/lower flammability or explosive limits**
Not applicable.

**Vapour pressure**
\(<0.1 \text{ kPa @ } ^\circ\text{C}\)

**Vapour density**
Not applicable.

**Relative density**
\(1.003 @ ^\circ\text{C}\)

**Solubility(ies)**
\(500 @ ^\circ\text{C}\)

**Auto-ignition temperature**
\(335^\circ\text{C}\)

**Viscosity**
Not applicable.

**Oxidising properties**
Not applicable.

9.2. Other information

**Other information**
None.

**Volatile organic compound**
This product contains a maximum VOC content of 0 g/litre.

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid
Conditions to avoid

Avoid exposure to high temperatures or direct sunlight. Avoid contact with strong oxidising agents.

10.5. Incompatible materials

Materials to avoid

Not determined.

10.6. Hazardous decomposition products

Hazardous decomposition products

Not known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects

No data recorded.

Specific target organ toxicity - single exposure

STOT - single exposure

None

Specific target organ toxicity - repeated exposure

STOT - repeated exposure

None

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 sensitisation or allergic reactions in sensitive individuals.

SECTION 12: Ecological Information

12.1. Toxicity

Acute toxicity - fish

LC₅₀, 96 hours: 180 mg/l, Algae

Acute toxicity - aquatic invertebrates

EC₅₀, 48 hours: 17.5 mg/l, Daphnia magna

Acute toxicity - aquatic plants

IC₅₀, 72 hours: 0.7 mg/l, Fish

12.2. Persistence and degradability

Persistence and degradability

No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential

-3.67

12.4. Mobility in soil

Mobility

Not determined.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

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

12.6. Other adverse effects
EPOCAST-INDUSTRIE HARDENER

Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. 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*

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 2735
UN No. (IMDG) 2735
UN No. (ICAO) 2735

14.2. UN proper shipping name

Proper shipping name (ADR/RID) 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)

14.3. Transport hazard class(es)

ADR/RID class 8
ADR/RID label 8
IMDG class 8
ICAO class/division 8

Transport labels

14.4. Packing group

ADR/RID packing group III
IMDG packing group III
ICAO packing group III

14.5. Environmental hazards
EPOCAST-INDUSTRIE HARDENER

Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user

EmS F-A, S-B

Emergency Action Code 2X

Hazard Identification Number 80 (ADR/RID)

Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

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

SECTION 15: Regulatory information

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


15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Revision date 04/04/2018
Revision 4
Supersedes date 06/12/2017

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.