



H. A. Springer marine + industrie service GmbH
24145 Kiel

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1 Identification of the substance / preparation and of the company

1.1 Product identifier

EPOCAST-INDUSTRIE, HARDENER

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

2-Components casting resin, hardener

1.3 Details of the supplier of the safety data sheet

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Liebigstraße 21
24145 Kiel / GERMANY
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Fax: +49 (0) 431-717 91-95
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E-mail: info-springer@springer-kiel.com

Responsible Schroeder@chemiebuero.de

1.4 Emergency phone

+49 (0) 89-19240 (24h)

2 Hazards identification

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

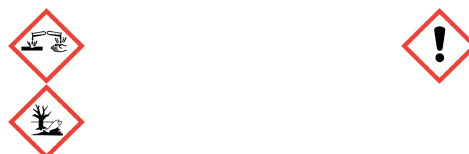
Skin Corr. 1B, H314
Skin Sens. 1, H317
Aquatic Chronic 1, H410

2.1.2 Classification according to Regulation 67/548/EEC or 1999/45/EC

C-N, R 34-43-50/53

2.2 Label elements

Hazard pictograms



Signal word

DANGER

Contains

Pentaethylenehexamine EU-INDEX 612-064-00-2

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.

Precautionary statements

P307 P311 IF exposed: Call a POISON CENTER or doctor/physician.

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.

P301 P330 P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303 P361 P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P273 Avoid release to the environment.

P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

Special labelling

not applicable

2.3 Other hazards

Physico-chemical hazards

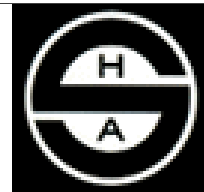
See chapter 10.

Environmental hazards

Does not contain any PBT or vPvB substances.

Other hazards

Further hazards were not determined with the current level of knowledge.



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3 Composition / Information on ingredients

3.1 Substances

Range [%]	Substance
100	Pentaethylenehexamine
	CAS: 4067-16-7, EINECS/ELINCS: 223-775-9, EU-INDEX: 612-064-00-2
	GHS/CLP: Skin Corr. 1B, H314 - Skin Sens. 1, H317 - Acute Tox. 1, H400 - Aquatic Chronic 1, H410
	EEC: C-N R34-43-50/53

3.2 Mixtures

The product in question is a substance.

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or below 0,1%.
For the wording of the listed risk phrases refer to section 16.

4 First aid measures

4.1 Description of first aid measures

General information	Remove contaminated soaked clothing immediately and dispose of safely.
Inhalation	Consult a doctor immediately. Ensure supply of fresh air.
Skin contact	Supply with medical care. In case of contact with skin wash off immediately with soap and water.
Eye contact	In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.
Ingestion	Consult a doctor immediately. Do not induce vomiting. Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Carbon dioxide. Water spray jet. Dry powder. Foam.
Extinguishing media that must not be used	Full water jet.

5.2 Special hazards arising from the substance or mixture

Unknown risk of formation of toxic pyrolysis products.

5.3 Advice for firefighters

Use self-contained breathing apparatus.
Collect contaminated firefighting water separately, must not be discharged into the drains.

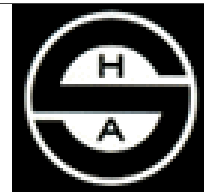
6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
High risk of slipping due to leakage/spillage of product.

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.



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6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).
Dispose of absorbed material in accordance with the regulations.

6.4 Reference to other sections

See Chapter 8+13

7 Handling and storage

7.1 Precautions for safe handling

Provide suitable vacuuming at the processing machines.
Use only in well-ventilated areas.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Do not store together with oxidizing agents.
Keep container tightly closed.
Keep container in a well-ventilated place.
Protect from heat/overheating.

7.3 Specific end use(s)

See product use, Chapter 1.2

8 Exposure controls / personal protection

8.1 Control parameters

not applicable

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	Safety glasses.
Hand protection	Butyl rubber, >480 min (EN 374). The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	Light protective clothing of plastic material.
Other	Avoid contact with eyes and skin. Do not inhale vapours. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier. Do not eat, drink, smoke or take drugs at work. After worktime and before work breaks the affected skin areas must be thoroughly cleaned. Wash hands before breaks and after work. Remove soiled or soaked clothing immediately.
Respiratory protection	Breathing apparatus in the event of high concentrations. Multi-purpose filter ABEK.
Thermal hazards	not applicable
Delimitation and monitoring of the environmental exposition	See Chapter 6+7.



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9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	yellowish
Odor	amine-like
Odour threshold	not determined
pH-value	not determined
pH-value [1%]	11,0
Boiling point [°C]	ca. 380
Flash point [°C]	ca. 175
Flammability [°C]	ca. 360
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidizing properties	no
Vapour pressure [kPa]	< 0,1 (20°C)
Density [g/ml]	1
Bulk density [kg/m³]	not applicable
Solubility in water	miscible
Partition coefficient [n-octanol/water]	-1,6
Viscosity	not applicable
Relative vapour density determined in air	not applicable
Evaporation speed	not applicable
Melting point [°C]	ca. -35
Autoignition temperature [°C]	not applicable
Decomposition temperature	not determined

9.2 Other information

none

10 Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

Reactions with acids.

10.4 Conditions to avoid

See chapter 7.2.

10.5 Incompatible materials

not determined

10.6 Hazardous decomposition products

No hazardous decomposition products known.



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11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50, oral, Rat: 1600 mg/kg.

Serious eye damage/irritation Product is caustic.

Skin corrosion/irritation Product is caustic.

Respiratory or skin sensitisation Sensitizing.

**Specific target organ toxicity —
single exposure** none

**Specific target organ toxicity —
repeated exposure** none

Mutagenicity yes

Reproduction toxicity none

Carcinogenicity Non-cytotoxic

General remarks
none

12 Ecological information

12.1 Toxicity

LC50, (96h), fish: 180 mg/l.

EC50, (48h), Daphnia magna: 18 mg/l.

IC50, (72h), Algae: 0,7 mg/l.

12.2 Persistence and degradability

**Behaviour in environment
compartments** not determined

Behaviour in sewage plant not determined

Biological degradability The product is only slightly biodegradable.

12.3 Bioaccumulative potential

not determined

12.4 Mobility in soil

not determined

12.5 Results of PBT and vPvB assessment

not applicable

12.6 Other adverse effects

None known.

13 Disposal considerations

13.1 Waste treatment methods

Coordinate the waste disposal with the national authorities.

Product

Dispose of as hazardous waste.

Disposal in an incineration plant in accordance with the regulations of the local authorities.

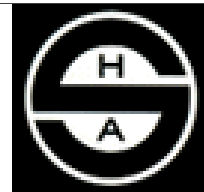
Waste no. (recommended) 080409*

Contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product.

Uncontaminated packaging may be taken for recycling.

Waste no. (recommended)
150110*
150102



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14 Transport information

14.1 UN number

See point 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Classification according to ADR	UN 2735 Amines, liquid, corrosive, n.o.s. (Pentaethylenhexamine) 8 N III
- Classification Code	C7
- Label	
- ADR LQ	5 I
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 3 (E)
Classification according to IMDG	UN 2735 Amines, liquid, corrosive, n.o.s. (Pentaethylenhexamine) 8 III MARINE POLLUTANT
- EMS	F-A, S-B
- Label	
- IMDG LQ	5 I
Classification according to IATA	UN 2735 Amines, liquid, corrosive, n.o.s. (Pentaethylenhexamine) 8 III
- Label	

14.3 Transport hazard class(es)

See point 14.2 in accordance with UN shipping name

14.4 Packing group

See point 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See point 14.2 in accordance with UN shipping name



14.6 Special precautions for user

Relevant information under points 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not determined

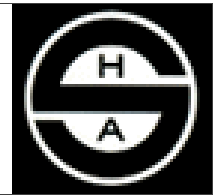
15 Regulatory information

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

EEC-REGULATIONS	1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (Reach); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2011); IMDG-Code (2011, 35. Amdt.); IATA-DGR (2011).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits with amendments October 2007. CHIP 3/ CHIP 4

15.2 Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.



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16 Other informations

R-phrases (Chapter 03)	R 34: Causes burns. R 43: May cause sensitisation by skin contact. R 50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Hazard statements (Chapter 03)	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.
Observe employment restrictions for people	yes
VOC (1999/13/CE)	not applicable

Disclaimer: 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.

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