



# SAFETY DATA SHEET

SOLID EP-H HARDENER

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

### 1.1 Product identifier

Product name : SOLID EP-H HARDENER  
Product description : Hardener.

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

Only for professional use. The product is not intended for consumer use.

### 1.3 Details of the supplier of the safety data sheet

#### Manufacturer or Distributor

Tikkurila Oyj  
P.O. Box 53  
FI-01301 VANTAA  
FINLAND  
Telephone +358 20 191 2000

e-mail address of person responsible for this SDS : Tikkurila Oyj,  
Product Safety,  
e-mail: productsafety@tikkurila.com

### 1.4 Emergency telephone number

Telephone number : 112  
(24h)

#### Supplier or Manufacturer

Telephone number : Tikkurila Oyj  
+358 20 191 2000 (GMT +2) Mon-Fri 8-16

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Product definition : Mixture

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

Acute Tox. 4, H302  
Skin Corr. 1B, H314  
Skin Sens. 1, H317  
Aquatic Chronic 3, H412

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

### 2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 - Harmful if swallowed.  
H314 - Causes severe skin burns and eye damage.  
H317 - May cause an allergic skin reaction.  
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

<b>General</b>	: Not applicable.
<b>Prevention</b>	: P261 - Avoid breathing vapor. P273 - Avoid release to the environment. P280 - Wear protective gloves/clothing and eye/face protection. P284 - In case of inadequate ventilation wear respiratory protection.
<b>Response</b>	: P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. 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 or physician.
<b>Storage</b>	: Not applicable.
<b>Disposal</b>	: Not applicable.
<b>Hazardous ingredients</b>	: isophorone diamine benzyl alcohol cycloaliphatic amine 2,4,6-tris(dimethylaminomethyl)phenol
<b>Supplemental label elements</b>	: Contains small amounts of sensitizing substances: bis[(dimethylamino)methyl]phenol

### 2.3 Other hazards

Other hazards which do not result in classification : None known.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures : Mixture

<b>Product/ingredient name</b>	<b>Identifiers</b>	<b>%</b>	<b>Classification Regulation (EC) No. 1272/2008 [CLP]</b>	<b>Notes</b>
isophorone diamine	REACH #: 01-2119514687-32 EC: 220-666-8 CAS: 2855-13-2 Index: 612-067-00-9	≥25 - ≤50	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412	-
benzyl alcohol	REACH #: 01-2119492630-38 EC: 202-859-9 CAS: 100-51-6	≥25 - ≤50	Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Irrit. 2, H319	-
cycloaliphatic amine	REACH #: 01-2119965165-33 EC: 500-101-4 CAS: 38294-64-3	≥10 - ≤25	Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412	-
2,4,6-tris(dimethylaminomethyl)phenol	REACH #: 01-2119560597-27 EC: 202-013-9 CAS: 90-72-2	≤5	Skin Corr. 1C, H314 Skin Sens. 1B, H317	-
bis[(dimethylamino)methyl]phenol	REACH #: 01-2119560597-27 EC: 275-162-0 CAS: 71074-89-0	<1	Skin Corr. 1B, H314 Skin Sens. 1, H317  <b>See Section 16 for the full text of the H statements declared above.</b>	-

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Notes, if applicable, refer to Notes given in Annex VI of 1272/2008/EC.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- General** : In all cases of doubt, or when symptoms persist, seek medical attention. Show this safety data sheet or label to the doctor if possible.
- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of lukewarm water, keeping eyelids open. Continue to rinse for at least 20 minutes. Get medical attention immediately. Continue rinsing until medical attention can be obtained.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners. In case of chemical burns, get medical attention as soon as possible.
- Ingestion** : If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Remove to fresh air and keep at rest in a position comfortable for breathing. Do NOT induce vomiting.

### 4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

See Section 11 for more detailed information on health effects and symptoms.

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

None.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire. Recommended: Alcohol resistant foam, CO<sub>2</sub>, powders or water spray/mist.
- Unsuitable extinguishing media** : Do not use a direct water jet that could spread the fire.

### 5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : This product is not classified as flammable. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.
- Hazardous combustion products** : When exposed to high temperatures, hazardous decomposition products may be produced, such as carbon monoxide and dioxide, smoke, oxides of nitrogen etc.

### 5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Use water spray to keep fire-exposed containers cool. This material is hazardous to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures** : Provide adequate ventilation. Do not breathe vapor or mist. Do not get in eyes or on skin. Put on appropriate personal protective equipment (see Section 8).
- 6.2 Environmental precautions** : Hazardous to aquatic environment. Do not allow to enter drains, water courses or soil.
- 6.3 Methods and materials for containment and cleaning up** : Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Preferably clean with a detergent. Avoid using solvents.
- 6.4 Reference to other sections** : See Section 1 for emergency contact information.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

- 7.1 Precautions for safe handling** : Avoid contact with skin and eyes. Avoid breathing vapor. Avoid inhalation of dust from sanding. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. See Section 8 for information on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled and stored. Wash hands before breaks and immediately after handling the product. Avoid release to the environment.
- 7.2 Conditions for safe storage, including any incompatibilities** : Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Recommended storage temperature is +5°C ...+25°C. Store in accordance with local regulations.
- 7.3 Specific end use(s)** : None.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

No exposure limit value known.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

#### DNELs/DMELs

No DNELs/DMELs available.

#### PNECs

No PNECs available.

### 8.2 Exposure controls

#### Appropriate engineering controls

Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn (see Personal protection for both components). Provide a readily-accessible eyewash facility. Comply with the health and safety at work laws.

#### Individual protection measures

- Eye/face protection** : Wear eye/face protection (EN166).

<b>Hand protection</b>	: Always wear approved protective gloves against chemicals. Gloves should be replaced regularly and if there is any sign of damage to the glove material. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed. Recommended glove material (EN374): < 1 hour (breakthrough time): nitrile rubber, butyl rubber > 8 hours (breakthrough time): laminated foil Not recommended: PVC or natural rubber (latex) gloves
<b>Skin protection</b>	: Wear suitable protective clothing.
<b>Respiratory protection</b>	: If ventilation is inadequate, use respirator that will protect against dust/mist. Wear a half mask or full face respirator with gas and vapor filter A and dust filter P2 during sanding (EN140:1998, EN405:2001). During continuous and long-term work the use of motor-driven or air-fed respirators is recommended (EN12941:1998). Be sure to use an approved/certified respirator or equivalent. Check that mask fits tightly and change filter regularly.
<b>Environmental exposure controls</b>	: For information regarding environmental protection measures, please refer to section 13 for waste handling, section 7 for handling and storage and section 1.2 for relevant identified uses of the substance or mixture and uses advised against.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: Liquid.
<b>Color</b>	: Clear.
<b>Odor</b>	: Strong.
<b>Odor threshold</b>	: Not relevant for the hazard assessment of the product.
<b>pH</b>	: Not relevant for the hazard assessment of the product.
<b>Melting point/freezing point</b>	: -15.4°C (benzyl alcohol)
<b>Initial boiling point and boiling range</b>	: 205.3°C (benzyl alcohol)
<b>Flash point</b>	: >100 °C
<b>Evaporation rate</b>	: 0.007 (butyl acetate = 1) (benzyl alcohol)
<b>Flammability (solid, gas)</b>	: Not applicable. Product is a liquid.
<b>Upper/lower flammability or explosive limits</b>	: Lower: 1.3% (benzyl alcohol) Upper: 13% (benzyl alcohol)
<b>Vapor pressure</b>	: 0.023 kPa [room temperature] (benzyl alcohol)
<b>Vapor density</b>	: 3.7 (benzyl alcohol)
<b>Density</b>	: 1 g/cm <sup>3</sup>
<b>Solubility(ies)</b>	: insoluble in water.
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: 436°C (benzyl alcohol)
<b>Decomposition temperature</b>	: Not relevant for the hazard assessment of the product.
<b>Viscosity</b>	: Not relevant for the hazard assessment of the product.
<b>Explosive properties</b>	: No explosive ingredients present.
<b>Oxidizing properties</b>	: No oxidizing ingredients present.

### 9.2 Other information

No additional information.

## SECTION 10: Stability and reactivity

- 10.1 Reactivity** : See Section 10.5.
- 10.2 Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : Avoid extreme heat and freezing.
- 10.5 Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions:  
oxidizing agents  
strong acids  
strong alkalis
- 10.6 Hazardous decomposition products** : When exposed to high temperatures, hazardous decomposition products may be produced, such as carbon monoxide and dioxide, smoke, oxides of nitrogen etc.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

There is no testdata available on the product itself.

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Long term exposure causes irritation of respiratory system and mucous membranes of nose and throat. Prolonged contact can cause severe irritation or even burns. The liquid splashed in the eyes may cause irreversible damage.

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
isophorone diamine	LD50 Oral	Rat	1030 mg/kg	-
benzyl alcohol	LC50 Inhalation Dusts and mists	Rat	4.178 mg/l	4 hours
	LD50 Oral	Rat	1230 mg/kg	-

Harmful if swallowed.

#### Irritation/Corrosion

Causes severe skin burns and eye damage.

#### Sensitization

May cause an allergic skin reaction.

#### Mutagenicity

Not classified.

#### Carcinogenicity

Not classified.

#### Reproductive toxicity

Not classified.

#### Teratogenicity

Not classified.

#### Specific target organ toxicity (single exposure)

Not classified.

#### Specific target organ toxicity (repeated exposure)

Not classified.

#### Aspiration hazard

Not classified.

## SECTION 12: Ecological information

Ecological testing has not been conducted on this product.  
Do not allow to enter drains, water courses or soil.

The product is classified as environmentally hazardous according to Regulation (EC) 1272/2008.  
Harmful to aquatic life with long lasting effects.

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
cycloaliphatic amine	Acute LC50 70.7 mg/l	Fish	96 hours

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
cycloaliphatic amine	OECD 301F	0 % - Not readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
cycloaliphatic amine	-	-	Not readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	Bioconcentration factor [BCF]	Potential
2,4,6-tris (dimethylaminomethyl) phenol	0.219	-	low
cycloaliphatic amine	-	5.13	low
benzyl alcohol	0.87	1.37	low
isophorone diamine	0.99	-	low

### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Mobility : Not available.

### 12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : Not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product

Methods of disposal : Gather residues into waste containers. Liquid residue and cleaning liquids are hazardous waste and must not be emptied into drains or sewage system, but handled in accordance with national regulations. Product residues should be left at special companies which have permission for gathering this kind of wastes.

European waste catalogue (EWC)



Waste code	Waste designation
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances

If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned. For further information, contact your local waste authority.

#### Packaging

**Methods of disposal** : Empty packaging should be recycled or disposed of in accordance with national regulations.

**Special precautions** : **Note!** The ready for use mixture of paint and hardener generates much heat. Allow the remainder of the mixture to harden in a safe place, e.g. in the open.

## SECTION 14: Transport information

	ADR/RID	IMDG	IATA
<b>14.1 UN number</b>	UN2735	UN2735	UN2735
<b>14.2 UN proper shipping name</b>	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (isophorone diamine, cycloaliphatic amine)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (isophorone diamine, cycloaliphatic amine)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (isophorone diamine, cycloaliphatic amine)
<b>14.3 Transport hazard class(es)</b>	8	8	8
<b>14.4 Packing group</b>	III	III	III
<b>14.5 Environmental hazards</b>	No.	No.	No.

#### Additional information

**ADR/RID** : **Hazard identification number** 80  
**Limited quantity** 5 L  
**Special provisions** 274  
**Tunnel code** (E)

**IMDG** : **Emergency schedules** F-A, S-B  
**Special provisions** 223, 274

**IATA** : **Quantity limitation** Passenger and Cargo Aircraft: 5 L.. Packaging instructions: 852.  
Cargo Aircraft Only: 60 L.. Packaging instructions: 856. Limited Quantities -  
Passenger Aircraft: 1 L.. Packaging instructions: Y841.  
**Special provisions** A3, A803

**14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not available.



## SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Other EU regulations

Europe inventory : All components are listed or exempted.

VOC Directive : This product is in scope of Directive 2004/42/CE.

**15.2 Chemical Safety Assessment** : This product contains substances for which Chemical Safety Assessments are still required.

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

<b>Classification</b>	<b>Justification</b>
Acute Tox. 4, H302	Calculation method
Skin Corr. 1B, H314	Calculation method
Skin Sens. 1, H317	Calculation method
Aquatic Chronic 3, H412	Calculation method
<b>Full text of abbreviated H statements</b>	
: H302	Harmful if swallowed.
: H312	Harmful in contact with skin.
: H314	Causes severe skin burns and eye damage.
: H317	May cause an allergic skin reaction.
: H319	Causes serious eye irritation.
: H332	Harmful if inhaled.
: H412	Harmful to aquatic life with long lasting effects.
<b>Full text of classifications [CLP/GHS]</b>	
: Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
: Acute Tox. 4, H312	ACUTE TOXICITY (dermal) - Category 4
: Acute Tox. 4, H332	ACUTE TOXICITY (inhalation) - Category 4
: Aquatic Chronic 3, H412	AQUATIC HAZARD (LONG-TERM) - Category 3
: Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
: Skin Corr. 1B, H314	SKIN CORROSION/IRRITATION - Category 1B
: Skin Corr. 1C, H314	SKIN CORROSION/IRRITATION - Category 1C
: Skin Sens. 1, H317	SKIN SENSITIZATION - Category 1
: Skin Sens. 1B, H317	SKIN SENSITIZATION - Category 1B
<b>Date of issue/ Date of revision</b>	: 10/12/2018
<b>Date of previous issue</b>	: No previous validation
<b>Version</b>	: 1

### Notice to reader

This Safety Data Sheet is prepared in accordance with Annex II (EU) No 830/2015 to Regulation (EC) No 1907/2006 (REACH). The information contained in this Safety Data Sheet is based on the present state of knowledge and current EU and national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.