

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

1.1. Product identifier

Product form : Mixture
Product name : Hardener TP E27

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

1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use
Use of the substance/mixture : B component for TP RESIN

1.2.2. Uses advised against

No additional information available.

1.3. Details of the supplier of the safety data sheet

Quartzline BV
W.A. Boogaerdstraat 5
3316 BN Dordrecht - Nederland
T +31 (0)78 6513100 - F +31 (0)78 6177390
info@quartzline.nl - www.quartzline.nl

1.4. Emergency telephone number

Emergency number : +31 (0)78 6513100
This number is serviced during office hours.

Country	Official advisory body	Address	Emergency number	Remark
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	Only for the purpose of informing medical personnel in cases of acute intoxications

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute toxicity (oral), Category 4 H302
Skin corrosion/irritation, Category 1, Sub-Category 1A H314
Serious eye damage/eye irritation, Category 1 H318
Skin sensitisation, Category 1 H317
Hazardous to the aquatic environment — Chronic Hazard, Category 3 H412
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Harmful to aquatic life with long lasting effects.

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS05

GHS07

Signal word (CLP) :

Danger

Contains :

1,3-cyclohexyleenbis(methylamine), Reaction products of di-, tri- and tetra-propoxylyated propane-1,2-diol with ammonia, Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer, m-phenylenebis(methylamine), 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Hazard statements (CLP) :

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 (CLP) :

P261 - Avoid breathing vapours, mist.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective clothing, protective gloves, eye protection.

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P303+P361+P353+P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.. Immediately call a doctor, a POISON CENTER.
P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor, a POISON CENTER.
P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	Conc. (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia	CAS-No.: 9046-10-0 EC-No.: 618-561-0 REACH-no: 01-2119557899-12	50 – 70	Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Chronic 3, H412
1,3-cyclohexyleenbis(methylamine)	CAS-No.: 2579-20-6 EC-No.: 219-941-5 REACH-no: 01-2119543741-41	25 – 30	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1A, H314 Eye Dam. 1, H318 Aquatic Chronic 3, H412
benzyl alcohol	CAS-No.: 100-51-6 EC-No.: 202-859-9 EC Index-No.: 603-057-00-5 REACH-no: 01-2119492630-38	3 – 10	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2, H319
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer	CAS-No.: 68609-08-5 EC-No.: 614-657-1 REACH-no: 01-2120106013-80	3 – 10	Acute Tox. 4 (Oral), H302 Skin Sens. 1, H317 Aquatic Chronic 2, H411
m-phenylenebis(methylamine)	CAS-No.: 1477-55-0 EC-No.: 216-032-5 REACH-no: 01-2119480150-50	1 – 5	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412
3-aminomethyl-3,5,5-trimethylcyclohexylamine	CAS-No.: 2855-13-2 EC-No.: 220-666-8 EC Index-No.: 612-067-00-9 REACH-no: 01-2119514687-32	1 – 5	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Chronic 3, H412
salicylic acid	CAS-No.: 69-72-7 EC-No.: 200-712-3 EC Index-No.: 607-732-00-5 REACH-no: 01-2119486984-17	0,25 – 2	Repr. 2, H361d Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If medical advice is needed, have product container or label at hand.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.
First-aid measures after skin contact	: Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER/doctor.

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First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER/doctor.

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

Symptoms/effects after skin contact : Burns. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Serious damage to eyes.

Symptoms/effects after ingestion : Burns.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Presents no particular fire or explosion hazard.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Do not allow to enter drains or water courses. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Sweep or shovel spills into appropriate container for disposal.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide good ventilation in process area to prevent formation of vapour. Avoid contact with skin and eyes. Wear personal protective equipment. Concerning personal protective equipment to use, see section 8.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool well ventilated place. Keep container closed when not in use. Store locked up.

Incompatible products : Strong bases. Strong acids. Strong oxidation agent.

Heat and ignition sources : Keep away from heat and direct sunlight.

7.3. Specific end use(s)

No additional information available.

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According to Regulation (EU) 2015/830, 2020/878 (REACH Annex II)

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. National occupational exposure and biological limit values

No additional information available.

8.1.2. Recommended monitoring procedures

No additional information available.

8.1.3. Air contaminants formed

No additional information available.

8.1.4. DNEL and PNEC

No additional information available.

8.1.5. Control banding

No additional information available.

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

protective clothing. Gloves. Protective goggles.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses. DIN EN 166

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing. CEN : EN 340; EN 369; EN 465

Hand protection:

Wear suitable gloves resistant to chemical penetration. Chemical resistant gloves (according to European standard NF EN 374 or equivalent).

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Gloves	Nitrile rubber (NBR), Polyvinylchloride (PVC)	6 (> 480 minutes)	≥0.11		EN 374

8.2.2.3. Respiratory protection

Respiratory protection:

No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation. In case of inadequate ventilation wear respiratory protection. EN 143

8.2.2.4. Thermal hazards

No additional information available.

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke during use. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: transparent.
Colour	: Colourless.
Odour	: Amine-like.
Odour threshold	: No data available.
pH	: No data available.
Relative evaporation rate (butylacetate=1)	: No data available.
Melting point	: No data available.
Freezing point	: No data available.
Boiling point	: No data available.
Flash point	: No data available.
Auto-ignition temperature	: No data available.
Decomposition temperature	: No data available.
Flammability (solid, gas)	: No data available.
Vapour pressure	: No data available.
Relative vapour density at 20 °C	: No data available.
Relative density	: No data available.
Solubility	: No data available.
Partition coefficient n-octanol/water (Log Pow)	: No data available.
Viscosity, kinematic	: No data available.
Viscosity, dynamic	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.
Explosive limits	: No data available.

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available.

10.4. Conditions to avoid

Extremely high or low temperatures. Keep away from heat and direct sunlight.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidation agent.

10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon oxides (CO, CO₂). Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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ATE oral	1154,389 mg/kg bodyweight
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1,3-cyclohexyleenbis(methylamine) (2579-20-6)

ATE oral	500 mg/kg bodyweight
ATE dermal	1100 mg/kg bodyweight

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia (9046-10-0)

LD50 oral rat	2885 mg/kg
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Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia (9046-10-0)

LD50 dermal rabbit	2980 mg/kg
ATE oral	2885 mg/kg bodyweight
ATE dermal	2980 mg/kg bodyweight

benzyl alcohol (100-51-6)

LD50 oral rat	1620 mg/kg
ATE oral	1620 mg/kg bodyweight
ATE gases	4500 ppmv/4h
ATE vapours	11 mg/l/4h
ATE dust/mist	1,5 mg/l/4h

Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer (68609-08-5)

LD50 dermal rat	> 2000 mg/kg
ATE oral	500 mg/kg bodyweight

m-phenylenebis(methylamine) (1477-55-0)

LD50 dermal rat	> 3100 mg/kg
LC50 Inhalation - Rat	≈ 1,34 mg/l/4h
ATE oral	500 mg/kg bodyweight
ATE gases	4500 ppmv/4h
ATE vapours	11 mg/l/4h
ATE dust/mist	1,5 mg/l/4h

3-aminomethyl-3,5,5-trimethylcyclohexylamine (2855-13-2)

LD50 oral rat	1030 mg/kg
LD50 dermal rabbit	1340 mg/kg
ATE oral	1030 mg/kg bodyweight
ATE dermal	1340 mg/kg bodyweight

salicylic acid (69-72-7)

LD50 oral rat	891 mg/kg
LD50 dermal rat	> 2000 mg/kg
ATE oral	891 mg/kg bodyweight

Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Harmful to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Harmful to aquatic life with long lasting effects.

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1,3-cyclohexyleenbis(methylamine) (2579-20-6)	
LC50 - Fish [1]	130 mg/l (OECD 203; Leuciscus idus)
EC50 - Crustacea [1]	33,1 mg/l (OECD 202; Daphnia magna)
ErC50 algae	56,7 mg/l (OECD 201; Pseudokirchneriella subcapitata)
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia (9046-10-0)	
LC50 - Fish [1]	> 15 mg/l (OECD 203; Oncorhynchus mykiss)
EC50 - Crustacea [1]	80 mg/l (OECD 202; Daphnia magna)
ErC50 algae	15 mg/l (OECD 201; Pseudokirchneriella subcapitata)
NOEC chronic algae	0,32 mg/l (OECD 201; Pseudokirchneriella subcapitata)
benzyl alcohol (100-51-6)	
LC50 - Fish [1]	460 mg/l (Pimephales promelas)
EC50 - Crustacea [1]	230 mg/l (OECD 202; Daphnia magna)
ErC50 algae	770 mg/l (OECD 201; Pseudokirchneriella subcapitata)
NOEC chronic crustacea	51 mg/l (OECD 211; Daphnia magna)
NOEC chronic algae	310 mg/l (OECD 201; Pseudokirchneriella subcapitata)
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer (68609-08-5)	
LC50 - Fish [1]	1,62 mg/l (OECD 203; Danio rerio)
EC50 - Crustacea [1]	1,59 mg/l (OECD 202; Daphnia magna)
ErC50 algae	3,13 mg/l (OECD 201; Pseudokirchneriella subcapitata)
NOEC chronic algae	2,07 mg/l (OECD 201; Pseudokirchneriella subcapitata)
m-phenylenebis(methylamine) (1477-55-0)	
LC50 - Fish [1]	87,6 mg/l (OECD 203; Oryzias latipes)
EC50 - Crustacea [1]	15,2 mg/l (OECD 202; Daphnia magna)
ErC50 algae	33,3 mg/l (OECD 201; Pseudokirchneriella subcapitata)
NOEC chronic crustacea	4,7 mg/l (OECD 211; Daphnia magna)
NOEC chronic algae	10,5 mg/l (OECD 201; Pseudokirchneriella subcapitata)
3-aminomethyl-3,5,5-trimethylcyclohexylamine (2855-13-2)	
LC50 - Fish [1]	110 mg/l (EU Method C.1; Leuciscus idus)
EC50 - Crustacea [1]	23 mg/l (OECD 202; Daohnia magna)
ErC50 algae	> 50 mg/l (EU Method C.3; Desmodesmus subspicatus)
salicylic acid (69-72-7)	
EC50 - Crustacea [1]	870 mg/l (OECD 202; Daphnia magna)
EC50 72h - Algae [1]	> 100 mg/l (OECD 201; Desmodesmus subspicatus)
NOEC chronic crustacea	10 mg/l (Daphnia magna)
12.2. Persistence and degradability	
1,3-cyclohexyleenbis(methylamine) (2579-20-6)	
Persistence and degradability	Not readily biodegradable.
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia (9046-10-0)	
Persistence and degradability	Not readily biodegradable.
benzyl alcohol (100-51-6)	
Persistence and degradability	Readily biodegradable.

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Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer (68609-08-5)	
Persistence and degradability	Not readily biodegradable.
m-phenylenebis(methylamine) (1477-55-0)	
Persistence and degradability	Not readily biodegradable.
3-aminomethyl-3,5,5-trimethylcyclohexylamine (2855-13-2)	
Persistence and degradability	Not readily biodegradable.
salicylic acid (69-72-7)	
Persistence and degradability	Readily biodegradable.
12.3. Bioaccumulative potential	
1,3-cyclohexylenbis(methylamine) (2579-20-6)	
Partition coefficient n-octanol/water (Log Pow)	0,783 (21,5 °C; pH>12)
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia (9046-10-0)	
Partition coefficient n-octanol/water (Log Pow)	1,34 (25 °C)
benzyl alcohol (100-51-6)	
Partition coefficient n-octanol/water (Log Pow)	1,1 (20 °C)
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer (68609-08-5)	
Partition coefficient n-octanol/water (Log Pow)	2,36 (20 °C)
m-phenylenebis(methylamine) (1477-55-0)	
Partition coefficient n-octanol/water (Log Pow)	≈ 0,18 (25 °C; pH 10,3 - 10,4)
3-aminomethyl-3,5,5-trimethylcyclohexylamine (2855-13-2)	
Partition coefficient n-octanol/water (Log Pow)	0,99 (23 °C; pH 6,34)
salicylic acid (69-72-7)	
Partition coefficient n-octanol/water (Log Pow)	2,25 (25 °C)
12.4. Mobility in soil	
No additional information available.	
12.5. Results of PBT and vPvB assessment	
Hardener TP E27	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	
12.6. Other adverse effects	
Additional information	: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.
Ecology - waste materials	: Avoid release to the environment.
European List of Waste (LoW) code	: 08 00 00 - WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS






SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

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According to Regulation (EU) 2015/830, 2020/878 (REACH Annex II)

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 2735	UN 2735	UN 2735	UN 2735	UN 2735
14.2. UN proper shipping name				
AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS : 1,3-cyclohexyleenbis(methylamine))	AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS : 1,3-cyclohexyleenbis(methylamine))	Amines, liquid, corrosive, n.o.s. (CONTAINS : 1,3-cyclohexyleenbis(methylamine))	AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS : 1,3-cyclohexyleenbis(methylamine))	AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS : 1,3-cyclohexyleenbis(methylamine))
Transport document description				
UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS : 1,3-cyclohexyleenbis(methylamine)), 8, I, (E)	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS : 1,3-cyclohexyleenbis(methylamine)), 8, I	UN 2735 Amines, liquid, corrosive, n.o.s. (CONTAINS : 1,3-cyclohexyleenbis(methylamine)), 8, I	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS : 1,3-cyclohexyleenbis(methylamine)), 8, I	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS : 1,3-cyclohexyleenbis(methylamine)), 8, I
14.3. Transport hazard class(es)				
8	8	8	8	8
				
14.4. Packing group				
I	I	I	I	I
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available.				

14.6. Special precautions for user

Overland transport

Classification code (ADR) : C7
 Special provisions (ADR) : 274
 Limited quantities (ADR) : 0
 Excepted quantities (ADR) : E0
 Packing instructions (ADR) : P001
 Mixed packing provisions (ADR) : MP8, MP17
 Portable tank and bulk container instructions (ADR) : T14
 Portable tank and bulk container special provisions (ADR) : TP2, TP27
 Tank code (ADR) : L10BH
 Vehicle for tank carriage : AT
 Transport category (ADR) : 1
 Special provisions for carriage - Operation (ADR) : S20
 Hazard identification number (Kemler No.) : 88
 Orange plates :



Tunnel restriction code (ADR) : E
 EAC code : 2X
 APP code : B

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Transport by sea

Special provisions (IMDG)	: 274
Limited quantities (IMDG)	: 0
Excepted quantities (IMDG)	: E0
Packing instructions (IMDG)	: P001
Tank instructions (IMDG)	: T14
Tank special provisions (IMDG)	: TP2, TP27
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-B
Stowage category (IMDG)	: A
Segregation (IMDG)	: SGG18, SG35
Properties and observations (IMDG)	: Colourless to yellowish liquids or solutions with a pungent odour. Miscible with or soluble in water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. Reacts violently with acids. Cause burns to skin, eyes and mucous membranes.
MFAG-No	: 153

Air transport

PCA Excepted quantities (IATA)	: E0
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: 850
PCA max net quantity (IATA)	: 0.5L
CAO packing instructions (IATA)	: 854
CAO max net quantity (IATA)	: 2.5L
Special provisions (IATA)	: A3, A803
ERG code (IATA)	: 8L

Inland waterway transport

Classification code (ADN)	: C7
Special provisions (ADN)	: 274
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E0
Equipment required (ADN)	: PP, EP
Number of blue cones/lights (ADN)	: 0

Rail transport

Classification code (RID)	: C7
Special provisions (RID)	: 274
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P001
Mixed packing provisions (RID)	: MP8, MP17
Portable tank and bulk container instructions (RID)	: T14
Portable tank and bulk container special provisions (RID)	: TP2, TP27
Tank codes for RID tanks (RID)	: L10BH
Special provisions for RID tanks (RID)	: TU38, TE22
Transport category (RID)	: 1
Hazard identification number (RID)	: 88

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

Not applicable

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According to Regulation (EU) 2015/830, 2020/878 (REACH Annex II)

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(b)	Hardener TP E27 ; 1,3-cyclohexylenbis(methylamine) ; Reaction products of di-, tri- and tetrapropoxylated propane-1,2-diol with ammonia ; benzyl alcohol ; m-phenylenebis(methylamine) ; 3-aminomethyl-3,5,5-trimethylcyclohexylamine	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	Hardener TP E27 ; 1,3-cyclohexylenbis(methylamine) ; Reaction products of di-, tri- and tetrapropoxylated propane-1,2-diol with ammonia ; m-phenylenebis(methylamine) ; 3-aminomethyl-3,5,5-trimethylcyclohexylamine	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

No additional information available.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Supersedes	Added	
	Revision date	Added	
	SDS EU format	Modified	
1.2	Use of the substance/mixture	Added	
2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.1	Adverse physicochemical, human health and environmental effects	Modified	
2.2	Precautionary statements (CLP)	Modified	
2.2	Hazard statements (CLP)	Modified	
3	Composition/information on ingredients	Modified	
4.1	First-aid measures general	Modified	
4.2	Symptoms/effects after skin contact	Modified	
5.2	Hazardous decomposition products in case of fire	Modified	
7.1	Precautions for safe handling	Modified	
7.2	Storage conditions	Modified	

Hardener TP E27

Safety Data Sheet

According to Regulation (EU) 2015/830, 2020/878 (REACH Annex II)

Indication of changes			
Section	Changed item	Change	Comments
9.1	Appearance	Modified	
9.1	Odour	Modified	
11.1	ATE oral	Modified	
14.4	Packing group (ADN)	Modified	
14.4	Packing group (IATA)	Modified	
14.4	Packing group (IMDG)	Modified	
14.4	Packing group (ADR)	Modified	
14.6	Packing instructions (IMDG)	Modified	
14.6	Transport category (ADR)	Modified	
14.6	Excepted quantities (ADR)	Modified	
14.6	Limited quantities (ADR)	Modified	
14.6	Hazard identification number (Kemler No.)	Modified	
16	Data sources	Modified	

Abbreviations and acronyms	
SDS	Safety Data Sheet
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
PBT	Persistent Bioaccumulative Toxic
vPvB	Very Persistent and Very Bioaccumulative
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
LC50	Median lethal concentration
LD50	Median lethal dose
CAS	CAS (Chemical Abstracts Service) number
EG-nr	EINECS- en ELINCS-number
EINECS	European Inventory of Existing Commercial Substances
NOEC	No-Observed Effect Concentration
STOT	Specific Target Organ Toxicity
PNEC	Predicted No-Effect Concentration
	PEC: Predicted Environmental Concentration
OEL	Occupational Exposure Limit

Data sources

: according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878.

Hardener TP E27

Safety Data Sheet

According to Regulation (EU) 2015/830, 2020/878 (REACH Annex II)

Other information

: REACH Disclaimer:

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Full text of H- and EUH-statements

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
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.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H361d	Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Repr. 2	Reproductive toxicity, Category 2
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Corr. 1C	Skin corrosion/irritation, Category 1, Sub-Category 1C
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1A	Skin sensitisation, category 1A

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Acute Tox. 4 (Oral)	H302	Calculation method
Skin Corr. 1A	H314	Calculation method
Eye Dam. 1	H318	Calculation method
Skin Sens. 1	H317	Calculation method
Aquatic Chronic 3	H412	Calculation method

Safety Data Sheet applicable for regions : GB - United Kingdom

The classification complies with : ATP 12

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