SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Issuing Date No data available **Revision Date** 10-Jan-2020 **Revision Number** 3

EGHS / English

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name **EpoThin 2 Hardener**

Product Code(s) 20-3442-016, 20-3442-064

(M)SDS Number 1501014_E

Chemical name

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

Recommended Use Laboratory Use Only.

Uses advised against No information available.

1.3. Details of the supplier of the safety data sheet

Manufacturer ITW Test & Measurement GmbH

Manufacturer Address Boschstraße 10
73734 Esslingen am Neckar / GERMANY
www.buehler-met.de www.buehler.fr www.buehler.co.uk

Phone number +49 (0) 711 4904690-0

E-mail Address lab.eu@buehler.com

1.4. Emergency telephone number

Global Access Code: 334545
Americas: +1 760 476 3962
Middle East/Africa: +1 760 476 3959
UK: +44 8 08 189 0979
Europe: +1 760 476 3961
Asia Pacific: +1 760 476 3960

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin corrosion/irritation	Category 1 Sub-category A - (H314)
Skin sensitization	Category 1 - (H317)
Reproductive Toxicity	Category 2 - (H361)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Signal word **Danger**

Hazard Statements
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H361 - Suspected of damaging fertility or the unborn child if swallowed
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash hands and face thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves and eye/face protection
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
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P310 - Immediately call a POISON CENTER or doctor
P321 - Specific treatment (see supplemental first aid instructions on this label)
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
P391 - Collect spillage
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

2.3. Other hazards

No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable.

3.2 Mixtures

Chemical name	EC No	CAS No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Reg. No.
Propylene glycol diamine, 2-amino-, diether with Propylene	-	9046-10-0	20 - 50%	Skin Corr. 1C (H314) Eye Dam. 1 (H138) Aquatic Chronic 3 (H412)	No data available
p-tert-Butyl phenol	-	98-54-4	10 - 20%	Skin Irrit. 2 (H315) Repr. 2 (H361f) Eye Dam. 1 (H318)	No data available
m-Xylene-.alpha., .alpha.`-diamine	-	1477-55-0	10 - 20%	No data available	No data available
Triphenyl phosphite	-	101-02-0	0 - 20%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Triethylene tetramine	-	112-24-3	0 - 1%	Acute Tox. 4 (H312) Skin Corr. 1B (H314) Skin Sens. 1 (H317) Aquatic Chronic 3 (H412)	No data available
Triethanolamine	203-049-8	102-71-6	0 - 20%	No data available	No data available
Piperazine	203-808-3	110-85-0	0 - 1%	Skin Corr. 1B (H314)2 (H361fd)Sens. 1 (H334)Sens. 1 (H317)	No data available
1-(2-Aminoethyl) piperazine	-	140-31-8	0 - 1%	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1B (H314) Skin Sens. 1 (H317) Aquatic Chronic 3 (H412)	No data available

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

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Chemical name	CAS No.	SVHC candidates
Propylene glycol diamine, 2-amino-, diether with Propylene	9046-10-0	-
p-tert-Butyl phenol	98-54-4	-
m-Xylene-.alpha., .alpha.`-diamine	1477-55-0	-
1,2-Ethanediamine, N,N`-bis(2-aminoethyl)-, polymer with methyloxirane	26950-63-0	-
1,6-Hexanediamine, 2,2,4-trimethyl-	3236-53-1	-
1,2-Cyclohexanedicarboxylic acid,	474919-59-0	-

dinonyl ester, branched and linear		
Triphenyl phosphite	101-02-0	-
Triethanolamine	102-71-6	-
Triethylene tetramine	112-24-3	-
1-(2-Aminoethyl) piperazine	140-31-8	-
Phenol	108-95-2	-
Piperazine	110-85-0	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention. May cause allergic respiratory reaction. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. May cause an allergic skin reaction.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.

Ingestion Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention. May produce an allergic reaction.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. See section 8 for more information.

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

Symptoms Burning sensation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. Itching. Rashes. Hives.

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

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy

sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Product is or contains a sensitizer. May cause sensitization by inhalation and skin contact. May cause sensitization by skin contact.

Hazardous Combustion Products
Carbon oxides.

5.3. Advice for firefighters

Special protective equipment for fire-fighters
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Provide extract ventilation to points where emissions occur. Remove contaminated clothing and shoes.

General Hygiene Considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Chemical name	EU	United Kingdom	France	Spain	Germany
p-tert-Butyl phenol 98-54-4	-	-	-	-	TWA: 0.08 ppm TWA: 0.5 mg/m³ S*
m-Xylene-.alpha., .alpha.`-diamine 1477-55-0	-	-	STEL: 0.1 mg/m³	-	-
Triethanolamine 102-71-6	-	-	-	TWA: 5 mg/m³	-
Piperazine 110-85-0	TWA 0.1 mg/m³ STEL 0.3 mg/m³	STEL: 0.3 mg/m³ TWA: 0.1 mg/m³	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³	STEL: 0.3 mg/m³ TWA: 0.1 mg/m³	TWA: 0.1 mg/m³
Chemical name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
p-tert-Butyl phenol 98-54-4	-	-	-	-	TWA: 0.08 ppm TWA: 0.5 mg/m³ H*
m-Xylene-.alpha.,	-	Ceiling: 0.1 mg/m³	-	Ceiling: 0.1 mg/m³	Ceiling: 0.02 ppm

.alpha.`-diamine 1477-55-0				iho*	Ceiling: 0.1 mg/m³ H*
Triethanolamine 102-71-6	-	TWA: 5 mg/m³	-	TWA: 5 mg/m³	TWA: 0.5 ppm TWA: 3.1 mg/m³
Piperazine 110-85-0	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³	-	STEL: 0.3 mg/m³ TWA: 0.1 mg/m³	TWA: 0.028 ppm TWA: 0.1 mg/m³ STEL: 0.084 ppm STEL: 0.3 mg/m³	TWA: 0.003 ppm TWA: 0.1 mg/m³
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
p-tert-Butyl phenol 98-54-4	H* STEL 0.4 ppm STEL 2.5 mg/m³ TWA: 0.08 ppm TWA: 0.5 mg/m³	STEL: 0.16 ppm STEL: 1 mg/m³ TWA: 0.08 ppm TWA: 0.5 mg/m³	-	-	-
m-Xylene-.alpha., .alpha.`-diamine 1477-55-0	STEL 0.1 mg/m³ TWA: 0.1 mg/m³ Ceiling 0.1 mg/m³	H* TWA: 0.1 mg/m³	P*	Ceiling: 0.1 mg/m³	-
Triethylene tetramine 112-24-3	-	-	STEL: 3 mg/m³ TWA: 1 mg/m³	TWA: 1 ppm TWA: 6 mg/m³ STEL: 3 ppm STEL: 12 mg/m³	-
Triethanolamine 102-71-6	STEL 1.6 ppm STEL 10 mg/m³ TWA: 0.8 ppm TWA: 5 mg/m³	STEL: 20 mg/m³ TWA: 5 mg/m³	-	TWA: 5 mg/m³ STEL: 10 mg/m³	TWA: 5 mg/m³ STEL: 15 mg/m³
Piperazine 110-85-0	STEL 0.3 mg/m³ TWA: 0.1 mg/m³	-	STEL: 0.3 mg/m³ TWA: 0.1 mg/m³	TWA: 0.1 ppm TWA: 0.3 mg/m³ STEL: 0.3 ppm STEL: 0.9 mg/m³	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³

Biological occupational exposure limits

Chemical name	European Union	United Kingdom	France	Spain	Germany
p-tert-Butyl phenol 98-54-4	-	-	-	-	2 mg/L
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
p-tert-Butyl phenol 98-54-4	-	2	-	-	-

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available

8.2. Exposure controls

Personal protective equipment

Eye/face protection Face protection shield.

Hand Protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear
Odor	Acrid
Color	No information available
Odor Threshold	No data available

Property	Values	Remarks Method
pH	No data available	
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	>90 °C	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	1	
Water Solubility	Moderately soluble	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/water	Data Lacking	
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Viscosity	150 cP	None known

9.2. Other information

Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

10.3. Possibility of hazardous reactions

Possibility of Hazardous Reactions	None under normal processing.
Hazardous Polymerization	Hazardous polymerization does not occur.

10.4. Conditions to avoid

Exposure to air or moisture over prolonged periods.

10.5. Incompatible materials

Oxidizing agent, Acids, Bases.

10.6. Hazardous decomposition products

Carbon oxides.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause sensitization in susceptible persons.
Eye contact	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause sensitization by skin contact.
Ingestion	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. May cause additional affects as listed under "Inhalation".

Information on toxicological effects

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Itching. Rashes. Hives.

Numerical measures of toxicity

Acute Toxicity

Unknown acute toxicity

99 % of the mixture consists of ingredient(s) of unknown toxicity
32 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
37 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
99 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
84 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
99 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Propylene glycol diamine, 2-amino-, diether with Propylene	= 242 mg/kg (Rat)	= 360 mg/kg (Rabbit)	-
p-tert-Butyl phenol	= 4000 mg/kg (Rat)	= 2318 mg/kg (Rabbit)	-
m-Xylene-.alpha., .alpha.`-diamine	= 660 mg/kg (Rat)	= 2 g/kg (Rabbit)	= 700 ppm (Rat) 1 h
Triphenyl phosphite	= 444 mg/kg (Rat) = 1590 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 6.7 mg/L (Rat) 1 h
Triethylene tetramine	= 2500 mg/kg (Rat)	= 550 mg/kg (Rabbit)	-
Triethanolamine	= 4190 mg/kg (Rat)	> 16 mL/kg (Rat) > 20 mL/kg (Rabbit)	-
Piperazine	= 600 mg/kg (Rat)	= 1590 mg/kg (Rabbit)	-
1-(2-Aminoethyl) piperazine	= 2140 µL/kg (Rat)	= 880 µL/kg (Rabbit)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes burns.

Serious eye damage/eye irritation Classification based on data available for ingredients. Risk of serious damage to eyes. Causes burns.

Respiratory or skin sensitization May cause sensitization by inhalation. May cause sensitization by skin contact.

Germ cell mutagenicity Contains a known or suspected mutagen. Classification based on data available for ingredients. Suspected of causing genetic defects.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Carcinogenicity No information available.

Reproductive Toxicity Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. Suspected of damaging fertility or the unborn child.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	EU - Annex VI Reproductive
p-tert-Butyl phenol	Repr. 2
Piperazine	Repr. 2

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Very toxic to aquatic life with long lasting effects. .

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
p-tert-Butyl phenol	72h EC50: = 11.2 mg/L (Desmodesmus subspicatus)	96h LC50: = 6.9 mg/L (Cyprinus carpio) 96h LC50: 4.71 - 5.62 mg/L (Pimephales promelas)	EC50 = 0.21 mg/L 5 min	48h EC50: = 3.9 mg/L 48h EC50: 3.4 - 4.5 mg/L
Triethylene tetramine	72h EC50: = 2.5 mg/L (Desmodesmus subspicatus) 96h EC50: = 3.7 mg/L (Pseudokirchneriella subcapitata) 72h EC50: = 20 mg/L (Pseudokirchneriella subcapitata)	96h LC50: = 570 mg/L (Poecilia reticulata) 96h LC50: = 495 mg/L (Pimephales promelas)	-	48h EC50: = 31.1 mg/L
Triethanolamine	96h EC50: = 169 mg/L (Desmodesmus subspicatus) 72h EC50: = 216 mg/L (Desmodesmus subspicatus)	96h LC50: 10600 - 13000 mg/L (Pimephales promelas) 96h LC50: > 1000 mg/L (Pimephales promelas) 96h LC50: 450 - 1000 mg/L (Lepomis macrochirus)	-	24h EC50: = 1386 mg/L
Piperazine	-	96h LC50: > 10000 mg/L (Lepomis macrochirus)	EC50 = 430 mg/L 30 min	96h EC50: = 6915 mg/L
1-(2-Aminoethyl) piperazine	72h EC50: = 495 mg/L (Pseudokirchneriella subcapitata)	96h LC50: >= 100 mg/L (Oncorhynchus mykiss) 96h LC50: > 1000 mg/L (Poecilia	EC50 > 10000 mg/L 17 h	48h EC50: = 32 mg/L

		reticulata) 96h LC50: 1950 - 2460 mg/L (Pimephales promelas)		

12.2. Persistence and degradability

Persistence and Degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Chemical name	Log Pow
p-tert-Butyl phenol	2.44
Triphenyl phosphite	4.98
Triethylene tetramine	-1.4
Triethanolamine	-2.53
1-(2-Aminoethyl) piperazine	-1.48

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

Chemical name	PBT and vPvB assessment
Propylene glycol diamine, 2-amino-, diether with Propylene	The substance is not PBT / vPvB
p-tert-Butyl phenol	The substance is not PBT / vPvB PBT assessment does not apply
m-Xylene-.alpha., .alpha.`-diamine	The substance is not PBT / vPvB
Triphenyl phosphite	The substance is not PBT / vPvB
Triethanolamine	The substance is not PBT / vPvB
Piperazine	The substance is not PBT / vPvB
1-(2-Aminoethyl) piperazine	The substance is not PBT / vPvB

12.6. Other adverse effects

Other adverse effects No information available.

Endocrine Disruptor Information

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances
p-tert-Butyl phenol	Group II Chemical	-
Triethylene tetramine	Group III Chemical	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused Dispose of in accordance with local regulations. Dispose of waste in accordance

products	with environmental legislation.
Contaminated packaging	No information available.

Section 14: TRANSPORT INFORMATION

IMDG/IMO

14.1 UN-No.	2735
14.2 Proper Shipping Name	POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Description	UN2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S. (PROPYLENE GLYCOL DIAMINE, 2-AMINO-, DIETHER WITH PROPYLENE, TRIETHYLENE TETRAMINE), 8, III, MARINE POLLUTANT
14.3 Hazard Class	8
14.4 Packing group	II
14.5 Marine Pollutant	Not applicable
Environmental hazard	Yes
14.6 Special Provisions	None
EmS-No.	F-A, S-B
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	No information available

RID

14.1 UN-No.	UN2735
14.2 Proper Shipping Name	POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Description	UN2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S. (PROPYLENE GLYCOL DIAMINE, 2-AMINO-, DIETHER WITH PROPYLENE, TRIETHYLENE TETRAMINE), 8, III, ENVIRONMENTALLY HAZARDOUS
14.3 Hazard Class	8
ADR/RID-Labels	8
14.4 Packing Group	II
14.5 Environmental hazard	Yes
14.6 Special Provisions	None
Classification code	C7

ADR

14.1 UN-No.	UN2735
14.2 Proper Shipping Name	POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Description	UN2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S. (PROPYLENE GLYCOL DIAMINE, 2-AMINO-, DIETHER WITH PROPYLENE, TRIETHYLENE TETRAMINE), 8, III, (E), ENVIRONMENTALLY HAZARDOUS
14.3 Hazard Class	8
14.4 Packing Group	II
14.5 Environmental hazard	Yes
14.6 Special Provisions	None 274
Classification code	C7
Tunnel restriction code	(E)

IATA

14.1 UN-No.	UN2735
14.2 Proper Shipping Name	AMINES, LIQUID, CORROSIVE, N.O.S.
Description	UN2735, AMINES, LIQUID, CORROSIVE, N.O.S. (PROPYLENE GLYCOL DIAMINE, 2-AMINO-, DIETHER WITH PROPYLENE, TRIETHYLENE

	TETRAMINE), 8, III
14.3 Hazard Class	8
14.4 Packing group	II
14.5 Environmental hazard	Yes
14.6 Special Provisions	None

ERG Code 8L

Section 15: REGULATORY INFORMATION

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

National regulations

France
Occupational Illnesses (R-463-3, France)

Chemical name	French RG number	Title
Triethylene tetramine 112-24-3	RG 49,RG 49bis	-
Triethanolamine 102-71-6	RG 49 RG 49,RG 49bis	-
Piperazine 110-85-0	RG 49,RG 49bis,RG 65,RG 66	-

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Authorizations and/or restrictions on use:
This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV). This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

Persistent Organic Pollutants
Not applicable.

Dangerous substance category per Seveso Directive (2012/18/EU)
E1 - Hazardous to the Aquatic Environment in Category Acute 1 or Chronic

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable.

International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

No information available.

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3

H301 - Toxic if swallowed
H302 - Harmful if swallowed
H311 - Toxic in contact with skin
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341 - Suspected of causing genetic defects
H361f - Suspected of damaging fertility
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects

Legend

SVHC: Substances of Very High Concern for Authorization:

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	-	Skin designation

Key literature references and sources for data

www.ChemADVISOR.com/

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This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006.

Disclaimer

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End of Safety Data Sheet