EPOCAST® 1635 B US

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

1.1 Product identifier

Trade name : EPOCAST® 1635 B US

Unique Formula Identifier (UFI) : PKCV-S0QT-W00R-YPJ0

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

Use of the Substance/Mixture : Adhesives

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe) BV
Address : Grijpenlaan 18
3300 Tienen
Belgium
Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40

E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

1.4 Emergency telephone

Emergency telephone : Centres Antipoison et de Toxicovigilance:
ANGERS: 02 41 48 21 21
BORDEAUX: 05 56 96 40 80
LILLE: 0 825 812 822
LYON: 04 72 11 69 11
MARSEILLE 04 91 75 25 25
NANCY: 03 83 32 36 36
PARIS: 01 40 05 48 48
RENNES: 02 99 59 22 22
STRASBOURG: 03 88 37 37 37
TOULOUSE: 05 61 77 74 47
EUROPE: +32 35 75 1234
France ORFILA: +33(0)145425959
ASIA: +65 6336-6011
China: +86 20 39377888
+86 532 83889090
India: + 91 22 42 87 5333
Australia: 1800 786 152
New Zealand: 0800 767 437
USA: +1 800-424-9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin corrosion, Sub-category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 1B	H360D: May damage the unborn child.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Danger

Hazard Statements :

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H360D	May damage the unborn child.
H411	Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : EUH071 Corrosive to the respiratory tract.

Precautionary Statements :

Prevention:

P201	Obtain special instructions before use.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

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

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

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 POISON CENTER/ doctor.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P391 Collect spillage.

Hazardous ingredients which must be listed on the label:

Amines, polyethylenepoly-, triethylenetetramine fraction
m-phenylenediamine
2-(2-aminoethylamino)ethanol

Additional Labeling

Restricted to professional users.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Amines

Hazardous ingredients

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Amines, polyethylenepoly-, triethylenetetramine fraction	90640-67-8 292-588-2 01-2119487919-13	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Chronic 3; H412 EUH071	>= 10 - < 20
m-phenylenediamine	108-45-2 203-584-7 612-147-00-3	Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 Eye Irrit. 2; H319 Skin Sens. 1; H317 Muta. 2; H341 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Chronic aquatic toxicity): 1 Acute toxicity estimate	>= 2,5 - < 10

		Acute oral toxicity: 450 mg/kg	
2-(2-aminoethylamino)ethanol	111-41-1 203-867-5 603-194-00-0 -	Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Repr. 1B; H360Df STOT SE 3; H335 (Respiratory system) specific concentration limit STOT SE 3; H335 >= 5 %	>= 0,3 - < 1
Substances with a workplace exposure limit :			
xylene	1330-20-7 215-535-7 601-022-00-9 01-2119488216-32	Flam. Liq. 3; H226 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system) STOT RE 2; H373 Asp. Tox. 1; H304 Aquatic Chronic 3; H412	>= 0,0025 - < 0,025

For explanation of abbreviations see section 16.

The test data for this product do not support the official Annex VI classification according to Regulation (EC) No. 1272/2008 and amendments, therefore you may see inconsistencies between the official Annex VI classification as mentioned in section 2 and/or 3 and the other sections of the SDS.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
No action shall be taken involving any personal risk or without suitable training.
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact	:	Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Risks	:	May cause an allergic skin reaction. Causes serious eye damage. May damage the unborn child. Causes severe burns. Corrosive to the respiratory tract.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	Exercise caution when using a high volume water jet as it may scatter and spread fire

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Metal oxides Carbon oxides Nitrogen oxides (NOx)

5.3 Advice for firefighters

Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal considerations see section 13., See Section 1 for emergency contact information., For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national

regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Keep in properly labeled containers.

Advice on common storage : For incompatible materials please refer to Section 10 of this SDS.

Further information on storage stability : Stable under normal conditions.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
aluminium	7429-90-5	VME	10 mg/m3	FR VLE
	Further information: Permissible limit values (circular)			
		VME (powder)	5 mg/m3	FR VLE
	Further information: Permissible limit values (circular)			
xylene	1330-20-7	VME	50 ppm 221 mg/m3	FR VLE
	Further information: Risk of penetration through skin, Regulatory binding exposure limits			
		VLCT (VLE)	100 ppm 442 mg/m3	FR VLE
	Further information: Risk of penetration through skin, Regulatory binding exposure limits			
		TWA	50 ppm 221 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	100 ppm 442 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		TWA	50 ppm 221 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the			

	skin, Indicative			
		STEL	100 ppm 442 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
m-phenylenediamine	Workers	Inhalation	Long-term systemic effects	0,24 mg/m3
	Workers	Dermal	Long-term systemic effects	0,12 mg/kg bw/day
	Workers	Dermal	Long-term local effects	0,0005 mg/cm2
	Consumers	Inhalation	Long-term systemic effects	0,03 mg/m3
	Consumers	Dermal	Long-term systemic effects	0,06 mg/kg bw/day
	Consumers	Dermal	Long-term local effects	0,0003 mg/cm2
	Consumers	Oral	Long-term systemic effects	0,06 mg/kg bw/day
Amines, polyethylenepoly-, triethylenetetramine fraction	Workers	Inhalation	Long-term systemic effects	0,54 mg/m3
	Consumers	Inhalation	Long-term systemic effects	0,096 mg/m3
	Consumers	Oral	Long-term systemic effects	14 mg/kg bw/day
xylene	Workers	Inhalation	Long-term systemic effects	221 mg/m3
	Workers	Inhalation	Acute systemic effects	442 mg/m3
	Workers	Inhalation	Long-term local effects	221 mg/m3
	Workers	Inhalation	Acute local effects	442 mg/m3
	Workers	Dermal	Long-term systemic effects	212 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	65,3 mg/m3
	Consumers	Inhalation	Acute systemic effects	260 mg/m3
	Consumers	Inhalation	Long-term local effects	65,3 mg/m3
	Consumers	Inhalation	Acute local effects	260 mg/m3
	Consumers	Dermal	Long-term systemic effects	125 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	12,5 mg/kg bw/day
2-(2-aminoethylamino)ethanol	Workers	Inhalation	Long-term systemic effects	0,704 mg/m3

	Workers	Dermal	Long-term systemic effects	2 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0,174 mg/m3
	Consumers	Dermal	Long-term systemic effects	1 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0,1 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
m-phenylenediamine	Fresh water	0,001 mg/l
	Sea water	0 mg/l
	Sewage treatment plant	1 mg/l
	Fresh water sediment	0,004 mg/kg dry weight (d.w.)
	Sea sediment	0 mg/kg dry weight (d.w.)
	Soil	0 mg/kg dry weight (d.w.)
Siloxanes and silicones, di-Me, reaction products with silica	Fresh water sediment	> 100 mg/kg
	Remarks:Assessment Factors	
	Soil	23 mg/kg
	Remarks:Assessment Factors	
Amines, polyethylenepoly-, triethylenetetramine fraction	Fresh water	0,027 mg/l
	Sea water	0,003 mg/l
	Sewage treatment plant	0,13 mg/l
	Fresh water sediment	8,572 mg/kg dry weight (d.w.)
	Sea sediment	0,857 mg/kg dry weight (d.w.)
	Soil	1,25 mg/kg dry weight (d.w.)
xylene	Fresh water	0,044 mg/l
	Remarks:Assessment Factors	
	Freshwater - intermittent	0,01 mg/l
	Remarks:Assessment Factors	
	Sea water	0,004 mg/l
	Remarks:Assessment Factors	
	Sewage treatment plant	1,6 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	2,52 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Sea sediment	0,252 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Soil	0,852 mg/kg
	Remarks:Assessment Factors	
2-(2-aminoethylamino)ethanol	Fresh water	0,022 mg/l
	Sea water	0,002 mg/l
	Sewage treatment plant	82,2 mg/l

	Fresh water sediment	0,172 mg/kg dry weight (d.w.)
	Sea sediment	0,017 mg/kg dry weight (d.w.)
	Soil	0,019 mg/kg dry weight (d.w.)
	Oral	0,001 mg/kg

8.2 Exposure controls

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection
Material : butyl-rubber
Break through time : > 8 h

Material : Nitrile rubber
Break through time : 10 - 480 min

Material : Ethyl Vinyl Alcohol Laminate (EVAL)
Break through time : > 8 h

Remarks : Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : W A R N I N G ! This product contains quartz, which has been classified by IARC as carcinogenic for humans (Group 1), and which can cause silicosis and lung cancer following exposure to respirable dust. It is therefore important to take particular care to avoid inhalation exposure when mechanically processing cured material (e.g. grinding, sanding, sawing).
Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines
Equipment should conform to EN 14387

Filter type : Combined particulates, ammonia/amines and organic vapor type (AK-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Form	:	paste
Color	:	gray
Odor	:	amine-like
Odor Threshold	:	No data is available on the product itself.
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flammability	:	No data is available on the product itself.
Lower explosion limit / Lower flammability limit	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	No data is available on the product itself.
Flash point	:	99 °C Method: Pensky-Martens closed cup
Autoignition temperature	:	No data is available on the product itself.
Decomposition temperature	:	No data is available on the product itself.
pH	:	substance/mixture is non-soluble (in water)
Viscosity		
Viscosity, dynamic	:	82 000 mPa.s (20 °C)
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Vapor pressure	:	< 1,33 hPa (20 °C)
Density	:	1,7 g/cm3 (20 °C)
Relative density	:	1,7
Relative vapor density	:	No data is available on the product itself.
Particle characteristics	:	No data is available on the product itself.

9.2 Other information

Miscibility with water	:	immiscible
Molecular weight	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Not classified due to lack of data.

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 2 000 mg/kg Method: Expert judgment
Acute inhalation toxicity	:	Acute toxicity estimate: > 20 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 2 000 mg/kg Method: Calculation method

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Acute oral toxicity	:	LD50 (Rat, male and female): 1 716,2 mg/kg Method: OECD Test Guideline 401 Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit, male and female): 1 465,4 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is moderately toxic after single contact with skin.

m-phenylenediamine:

Acute oral toxicity : LD50 (Rat, male): 450 mg/kg
Method: OECD Test Guideline 401

Acute toxicity estimate (Rat, male): 450 mg/kg

Acute inhalation toxicity : LC50 (Rat, male): 3,2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : see user defined free text (Rabbit, male): 1 500 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is moderately toxic after single contact with skin.
Remarks: Information given is based on data obtained from similar substances.

2-(2-aminoethylamino)ethanol:

Acute oral toxicity : LD50 (Rat, male and female): 2 150 mg/kg
Method: OECD Test Guideline 401
GLP: no
Assessment: The component/mixture is low toxic after single ingestion.

Acute inhalation toxicity : LC0 (Rat): 51.3 mg/m3
Exposure time: 8 h
Test atmosphere: vapor
Method: OECD Test Guideline 403
GLP: no
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2 000 mg/kg

LD50 (Rat, male and female): > 2 000 mg/kg
Method: OECD Test Guideline 402
GLP: no
Assessment: The substance or mixture has no acute dermal toxicity

xylene:

Acute oral toxicity : LD50 (Mouse, male and female): 3 523 - 4 000 mg/kg
Method: Directive 67/548/EEC, Annex V, B.1.
GLP: no
Assessment: The substance or mixture has no acute oral

toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): 27,1 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Other guidelines
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit, male): 12 126 mg/kg
Assessment: The component/mixture is moderately toxic after single contact with skin.

Skin corrosion/irritation

Causes severe burns.

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species	:	reconstructed human epidermis (RhE)
Assessment	:	Causes burns.
Method	:	OECD Test Guideline 435
Result	:	Corrosive after 3 minutes to 1 hour of exposure

Species	:	Rabbit
Assessment	:	Causes burns.
Method	:	OECD Test Guideline 404
Result	:	Corrosive after 3 minutes to 1 hour of exposure

m-phenylenediamine:

Species	:	Rabbit
Assessment	:	No skin irritation
Method	:	OECD Test Guideline 404
Result	:	slight irritation

2-(2-aminoethylamino)ethanol:

Species	:	Rabbit
Assessment	:	Causes burns.
Method	:	OECD Test Guideline 404
Result	:	Corrosive after 3 minutes to 1 hour of exposure
GLP	:	no

xylene:

Species	:	Rabbit
Exposure time	:	4 h
Assessment	:	Irritating to skin.
Method	:	Regulation (EC) No. 440/2008, Annex, B.4
Result	:	Skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species	:	Rabbit
Assessment	:	Risk of serious damage to eyes.
Method	:	OECD Test Guideline 405
Result	:	Irreversible effects on the eye

m-phenylenediamine:

Species	:	Rabbit
Assessment	:	Irritant
Method	:	OECD Test Guideline 405
Result	:	Irritating to eyes.

2-(2-aminoethylamino)ethanol:

Species	:	Rabbit
Assessment	:	Corrosive
Method	:	OECD Test Guideline 405
Result	:	Irreversible effects on the eye
GLP	:	no

xylene:

Species	:	Rabbit
Result	:	Eye irritation

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified due to lack of data.

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Exposure routes	:	Skin
Species	:	Guinea pig
Assessment	:	Probability or evidence of skin sensitisation in humans
Method	:	OECD Test Guideline 406
Result	:	Probability or evidence of skin sensitisation in humans

m-phenylenediamine:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin
Species	:	Mouse
Assessment	:	May cause sensitisation by skin contact.
Method	:	OECD Test Guideline 429
Result	:	May cause sensitisation by skin contact.

2-(2-aminoethylamino)ethanol:

Test Type	:	Local lymph node assay (LLNA)

Exposure routes	:	Skin
Species	:	Mouse
Assessment	:	Probability or evidence of low to moderate skin sensitisation rate in humans
Method	:	OECD Test Guideline 429
Result	:	Probability or evidence of low to moderate skin sensitisation rate in humans
GLP	:	no

xylene:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin
Species	:	Mouse
Assessment	:	Did not cause sensitisation on laboratory animals.
Method	:	OECD Test Guideline 429
Result	:	Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Product:

Germ cell mutagenicity- Assessment	:	Animal testing did not show any mutagenic effects.

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Test system: Salmonella tryphimurium and E. coli Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive GLP: yes Test Type: Micronucleus test Test system: Human lymphocytes Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 487 Result: negative
Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Species: Mouse (male and female) Cell type: Bone marrow Application Route: Intraperitoneal injection Dose: 0 - 600 mg/kg Method: OECD Test Guideline 474 Result: negative

m-phenylenediamine:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: positive

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Application Route: Oral
Dose: 16, 33, 65 mg/kg/day
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Germ cell mutagenicity-Assessment : Animal testing did not show any mutagenic effects.

2-(2-aminoethylamino)ethanol:

Genotoxicity in vitro : Test Type: reverse mutation assay
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: no

Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: no

Genotoxicity in vivo : Application Route: Oral
Dose: 3000 mg/kg
Result: negative

Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Oral
Dose: 0; 500; 1000; 2000 mg/kg bw
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Test Type: in vivo assay
Species: Drosophila melanogaster (vinegar fly) (male)
Application Route: Oral
Exposure time: 7 d
Method: OECD Test Guideline 477
Result: negative

xylene:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: Regulation (EC) No. 440/2008, Annex, B.10
Result: negative

Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: Regulation (EC) No. 440/2008, Annex, B.19
Result: negative

Test Type: gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: Regulation (EC) No. 440/2008, Annex, B.17
Result: negative

Test Type: reverse mutation assay
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: negative

Genotoxicity in vivo : Test Type: Chromosome aberration test in vitro
Species: Mouse (male and female)
Application Route: Subcutaneous
Dose: 1 ml/kg
Method: OECD Test Guideline 478
Result: negative

Test Type: Chromosome aberration test in vitro
Species: Rat (male and female)
Application Route: Intraperitoneal injection
Dose: 1 ml/kg
Method: OECD Test Guideline 478
Result: negative

Test Type: Micronucleus test
Species: Mouse (male)
Application Route: Intraperitoneal injection
Dose: 106, 220, 320, 440 mg/kg
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Not classified due to lack of data.

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species	:	Mouse, male
Application Route	:	Dermal
NOAEL	:	>= 50 mg/kg bw/day
Method	:	OECD Test Guideline 451
Result	:	negative

Species	:	Mouse, male
Application Route	:	Dermal
Exposure time	:	104 weeks

NOAEL	:	>= 20 mg/kg bw/day
Method	:	OECD Test Guideline 451
Result	:	negative

xylene:

Species	:	Mouse, male and female
Application Route	:	Oral
Exposure time	:	103 weeks
Dose	:	0, 500 or 1000 mg/kg
Frequency of Treatment	:	5 days/week
Method	:	Regulation (EC) No. 440/2008, Annex, B.32
Result	:	negative

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	103 weeks
Dose	:	0, 250 or 500 mg/kg
Frequency of Treatment	:	5 days/week
Method	:	Regulation (EC) No. 440/2008, Annex, B.32
Result	:	negative

Reproductive toxicity

May damage the unborn child.

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Effects on fetal development	:	Test Type: Pre-natal Species: Rat Application Route: Oral Dose: 75/325/750 mg/kg bw/day Duration of Single Treatment: 10 d General Toxicity Maternal: NOAEL: >= 750 mg/kg body weight Developmental Toxicity: NOAEL: >= 750 mg/kg body weight Method: OECD Test Guideline 414 Result: No teratogenic effects Test Type: Pre-natal Species: Rabbit Application Route: Dermal Dose: 5/50/125 mg/kg bw/day Duration of Single Treatment: 13 d General Toxicity Maternal: NOAEL: 50 mg/kg body weight Developmental Toxicity: NOAEL: >= 125 mg/kg body weight Method: OECD Test Guideline 414 Result: No teratogenic effects
Reproductive toxicity - Assessment	:	The reprotoxic effects of Triethylenetetramine (TETA) are under further evaluation as part of the EU REACH program due in part to the aminoethyl ethanolamine (AEEA) content.

2-(2-aminoethylamino)ethanol:

Effects on fertility	:	Test Type: Reproduction / Developmental Toxicity Screening Test

Species: Rat, male and female
Application Route: Oral
Dose: 0, 50, 250, 1000 mg/kg bw/day milligram per kilogram
General Toxicity Parent: NOAEL: 250 mg/kg body weight
General Toxicity F1: NOEL: 50 mg/kg body weight
Method: OECD Test Guideline 421
Result: positive
GLP: yes

Effects on fetal development : Species: Rat, male and female
Application Route: Oral
Dose: 0, 0.2, 1, 5, 50 mg/kg bw/day
General Toxicity Maternal: NOAEL: 50 mg/kg body weight
Developmental Toxicity: LOAEL: 0,2 mg/kg body weight
Method: OECD Test Guideline 421
Result: Teratogenic effects.
GLP: yes

Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 0, 0.5, 2, 10, 50 mg/kg bw/da
General Toxicity Maternal: NOAEL: 50 mg/kg body weight
Developmental Toxicity: NOAEL: 50 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments, May damage the unborn child. Suspected of damaging fertility.

xylene:

Effects on fertility : Species: Rat, male and female
Application Route: inhalation (vapor)
Dose: 0, 60, 250 or 500 ppm
Duration of Single Treatment: 6 h
Frequency of Treatment: 7 days/week
General Toxicity Parent: NOAEC: 500 ppm
General Toxicity F1: NOAEC: 500 ppm
Result: No effects on fertility and early embryonic development were detected.

STOT-single exposure

Corrosive to the respiratory tract.

Components:

2-(2-aminoethylamino)ethanol:

Target Organs : Respiratory Tract
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

xylene:

Exposure routes	:	Inhalation
Target Organs	:	Respiratory Tract
Assessment	:	May cause respiratory irritation., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT-repeated exposure

Not classified due to lack of data.

Components:

xylene:

Exposure routes	:	Inhalation
Assessment	:	May cause damage to organs through prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Repeated dose toxicity

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species	:	Rat, male and female
NOAEL	:	350 mg/kg
Application Route	:	Oral
Exposure time	:	28 d
Number of exposures	:	7 d
Dose	:	100/350/1000 mg/kg bw/day
Method	:	OECD Test Guideline 407
Target Organs	:	Lungs
Remarks	:	Information given is based on data obtained from similar substances.

Species	:	Dog, male and female
NOAEL	:	125 mg/kg
Application Route	:	Oral
Target Organs	:	Lungs
Remarks	:	Information given is based on data obtained from similar substances.

Species	:	Dog, male and female
NOAEL	:	50 mg/kg
Application Route	:	Oral
Method	:	Subchronic toxicity
Remarks	:	Information given is based on data obtained from similar substances.

Species	:	Rat, male and female
NOAEL	:	50 mg/kg
Application Route	:	Oral
Exposure time	:	26 weeks
Dose	:	50/175/600 mg/kg bw/day
Method	:	OECD Test Guideline 408
Target Organs	:	Lungs

Remarks	:	Information given is based on data obtained from similar substances.

Species	:	Mouse, male and female
NOAEL	:	92 mg/kg, 600 ppm
Application Route	:	Oral
Exposure time	:	120/600/3000 ppm
Method	:	OECD Test Guideline 408
Remarks	:	Information given is based on data obtained from similar substances.

m-phenylenediamine:

Species	:	Rat, male and female
NOAEL	:	6 mg/kg
Application Route	:	oral (gavage)
Exposure time	:	90 d
Number of exposures	:	daily
Dose	:	2/6/18 mg/kg bw/day
Method	:	OECD Test Guideline 408

2-(2-aminoethylamino)ethanol:

Species	:	Rat, male and female
NOAEL	:	> 1000 mg/kg/d
Application Route	:	Skin contact
Exposure time	:	28 d
Number of exposures	:	daily
Dose	:	0, 100, 300, 1000 mg/kg bw/d
Method	:	OECD Test Guideline 410
GLP	:	yes

Species	:	Rat, male and female
NOEL	:	60 mg/kg/d
Application Route	:	oral (gavage)
Exposure time	:	28 d
Dose	:	0, 60; 250; 1000 mg/kg bw/d
Method	:	OECD Test Guideline 407
GLP	:	yes

xylene:

Species	:	Rat, male
NOEC	:	7817 mg/m3
Application Route	:	Inhalation
Test atmosphere	:	vapor
Exposure time	:	13 weeks 6 h
Number of exposures	:	5 days/week
Dose	:	0, 1954, 3908, 7817 mg/m3
Method	:	Chronic toxicity
Target Organs	:	hearing organs

Species	:	Rat, male and female
NOAEL	:	250 mg/kg
Application Route	:	Oral
Exposure time	:	103 weeks

Number of exposures	:	5 days/week
Dose	:	0/250/500 mg/kg bw/day
Species	:	Rat, male and female
NOAEL	:	150 mg/kg
LOAEL	:	150 mg/kg
Application Route	:	Oral
Exposure time	:	90 days 90 Days
Number of exposures	:	7 days/week
Dose	:	0, 150, 750 or 1500 mg/kg/day
Method	:	OECD Test Guideline 408
Target Organs	:	Kidney, Liver

Aspiration hazard

Not classified due to lack of data.

Components:

xylene:

May be fatal if swallowed and enters airways.

11.2 Information on other hazards

Endocrine disrupting properties

Not classified due to lack of data.

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Assessment : Does not have endocrine disrupting properties.

m-phenylenediamine:

Assessment : Does not have endocrine disrupting properties.

2-(2-aminoethylamino)ethanol:

Assessment : Does not have endocrine disrupting properties.

xylene:

Assessment : Does not have endocrine disrupting properties.

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 570 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.1.

LC50 (Leuciscus idus (Golden orfe)): 200 - 500 mg/l
Exposure time: 96 h

LC50 (Pimephales promelas (fathead minnow)): 330 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: Fish Acute Toxicity Test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31,1 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): 20 mg/l
Exposure time: 72 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 201

EC10 (Selenastrum capricornutum (green algae)): 1,34 mg/l
Exposure time: 72 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEC (Bacteria): >= 100 mg/l
Exposure time: 28 d
Method: OECD Test Guideline 216

EC50 (Bacteria): > 100 mg/l
Exposure time: 28 h
Method: OECD Test Guideline 216

EC50 (Bacteria): 15,7 mg/l
Exposure time: 2 h
Test Type: static test
Test substance: Fresh water

NOEC (Bacteria): 1,3 mg/l
Exposure time: 2 h
Test Type: static test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: 1,9 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to soil dwelling organisms : NOEC: ca. 62,5 mg/kg
Exposure time: 56 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 222

EC50: > 1 000 mg/kg
Exposure time: 56 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 222

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

m-phenylenediamine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 512 mg/l
Exposure time: 96 h
Test Type: flow-through test
Test substance: Fresh water
Method: Fish Acute Toxicity Test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Gammarus fasciatus (freshwater shrimp)): 7,8 mg/l
Exposure time: 48 h
Test Type: flow-through test
Test substance: Fresh water
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): 5,63 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

NOEC (Selenastrum capricornutum (green algae)): 0,915 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (activated sludge): 100 mg/l
Exposure time: 0,5 h
Test substance: Fresh water
Method: OECD Test Guideline 209

Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,05 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: flow-through test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 211
GLP: yes

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

2-(2-aminoethylamino)ethanol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 640 mg/l
Exposure time: 96 h
Test substance: Fresh water
Method: Calculation method
GLP: no

Toxicity to daphnia and other aquatic invertebrates : EC50 : 140 mg/l
Exposure time: 48 h

EC50 (Daphnia magna (Water flea)): 22 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202
GLP: yes

NOEC (Daphnia magna (Water flea)): 10 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 358 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: DIN 38412
GLP: no

ErC10 (Desmodesmus subspicatus (green algae)): 156 mg/l

Exposure time: 72 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: DIN 38412
GLP: no

Toxicity to microorganisms : EC50 (activated sludge): > 1 003 mg/l
Exposure time: 0,5 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: ISO Method, other
GLP: no

EC50 (Bacteria): 134,8 mg/l
Exposure time: 17 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: DIN 38412
GLP: no

xylene:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2,6 mg/l
End point: mortality
Exposure time: 96 h
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : NOEC (Ceriodaphnia dubia (Water flea)): 1 mg/l
End point: Immobilization
Exposure time: 24 h
Test Type: static test
Test substance: Fresh water
Method: Other guidelines
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 4,7 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,44 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

GLP: yes

Toxicity to microorganisms : NOEC (activated sludge): 16 mg/l
Exposure time: 28 d
Test Type: static test
Analytical monitoring: no
Method: Other guidelines
GLP: yes

IC50 (Bacteria): 96 mg/l
Exposure time: 24 h

Toxicity to fish (Chronic toxicity) : NOEC: 0,714 mg/l
Exposure time: 56 d
Species: Oncorhynchus mykiss (rainbow trout)
Test Type: flow-through test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,96 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia (Water flea)
Analytical monitoring: yes
Test substance: Fresh water
GLP: no
Remarks: Information given is based on data obtained from similar substances.

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Biodegradability : Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 162 d
Method: OECD Test Guideline 301D
Test substance: Fresh water

Test Type: aerobic
Inoculum: activated sludge
Result: Not inherently biodegradable.
Biodegradation: 20 %
Related to: Dissolved organic carbon (DOC)
Exposure time: 84 d
Method: OECD Test Guideline 302A
Test substance: Fresh water

m-phenylenediamine:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge

Concentration: 2 mg/l
Result: Not biodegradable
Biodegradation: 30 %
Exposure time: 28 d
Method: OECD Test Guideline 301D
GLP: yes
Remarks: Based on data from similar materials

Photodegradation : Test Type: Water
Method: Indirect Photolysis Screening Test: Sunlight
Photolysis in Waters Containing Dissolved Humic Substances

2-(2-aminoethylamino)ethanol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

Biochemical Oxygen Demand (BOD) : 66.3 - 109.6 %
Incubation time: 28 d
Method: OECD Test Guideline 301F

Chemical Oxygen Demand (COD) : 1090 mgO2/g

xylene:

Biodegradability : Test Type: aerobic
Inoculum: Sewage (STP effluent)
Result: Readily biodegradable.
Biodegradation: > 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Test substance: Fresh water
GLP: yes

12.3 Bioaccumulative potential

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Partition coefficient: n-octanol/water : log Pow: -2,08 - 2,90 (20 °C)
Method: QSAR

m-phenylenediamine:

Partition coefficient: n-octanol/water : log Pow: -0,39 (25 °C)
pH: 7
Method: QSAR
GLP: no

2-(2-aminoethylamino)ethanol:

Bioaccumulation	:	Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): 2,1 - 3,7 Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: -1,46 (25 °C) pH: 10,6 - 11 Method: OECD Test Guideline 107 GLP: no

xylene:

Bioaccumulation	:	Species: Fish Exposure time: 56 d Bioconcentration factor (BCF): 25,9 Test substance: Fresh water Remarks: Bioaccumulation is unlikely.
Partition coefficient: n-octanol/water	:	log Pow: 3,16 (20 °C) pH: 7 Method: Calculation method

12.4 Mobility in soil

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Distribution among environmental compartments	:	Koc: 3162,28, log Koc: 3,5 Method: OECD Test Guideline 106

2-(2-aminoethylamino)ethanol:

Distribution among environmental compartments	:	Koc: 4,2 Koc: 3,524

xylene:

Distribution among environmental compartments	:	Medium: Soil Koc: ca. 537, log Koc: ca. 2,73 Method: OECD Test Guideline 121

12.5 Results of PBT and vPvB assessment

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Assessment	:	Not persistent, bioaccumulative, and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

m-phenylenediamine:

Assessment	:	Not persistent, bioaccumulative, and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

2-(2-aminoethylamino)ethanol:

Assessment : Not persistent, bioaccumulative, and toxic (PBT).
This substance is not considered to be very persistent and very bioaccumulating (vPvB).

xylene:

Assessment : Not persistent, bioaccumulative, and toxic (PBT).
This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Endocrine disrupting properties

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Assessment : Does not have endocrine disrupting properties.

m-phenylenediamine:

Assessment : Does not have endocrine disrupting properties.

2-(2-aminoethylamino)ethanol:

Assessment : Does not have endocrine disrupting properties.

xylene:

Assessment : Does not have endocrine disrupting properties.

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.
Toxic to aquatic life with long lasting effects.

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

m-phenylenediamine:

Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

2-(2-aminoethylamino)ethanol:

Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

Additional ecological information : No data available

xylene:

Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 2735

ADR : UN 2735

RID : UN 2735

IMDG : UN 2735

IATA : UN 2735

14.2 UN proper shipping name

ADN : AMINES, LIQUID, CORROSIVE, N.O.S.
(TRIETHYLENE TETRAMINE)

ADR : AMINES, LIQUID, CORROSIVE, N.O.S.
(TRIETHYLENE TETRAMINE)

RID : AMINES, LIQUID, CORROSIVE, N.O.S.
(TRIETHYLENE TETRAMINE)

IMDG : AMINES, LIQUID, CORROSIVE, N.O.S.
(TRIETHYLENE TETRAMINE)

IATA : Amines, liquid, corrosive, n.o.s.
(TRIETHYLENE TETRAMINE)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	8	
ADR	8	
RID	8	

IMDG	:	8
IATA	:	8

14.4 Packing group

ADN

Packing group	:	II
Classification Code	:	C7
Hazard Identification Number	:	80
Labels	:	8

ADR

Packing group	:	II
Classification Code	:	C7
Hazard Identification Number	:	80
Labels	:	8
Tunnel restriction code	:	(E)

RID

Packing group	:	II
Classification Code	:	C7
Hazard Identification Number	:	80
Labels	:	8

IMDG

Packing group	:	II
Labels	:	8
EmS Code	:	F-A, S-B

IATA (Cargo)

Packing instruction (cargo aircraft)	:	855
Packing instruction (LQ)	:	Y840
Packing group	:	II
Labels	:	Corrosive

IATA (Passenger)

Packing instruction (passenger aircraft)	:	851
Packing instruction (LQ)	:	Y840
Packing group	:	II
Labels	:	Corrosive

14.5 Environmental hazards

ADN

Environmentally hazardous	:	yes

ADR

Environmentally hazardous	:	yes

RID

Environmentally hazardous	:	yes

IMDG

Marine pollutant	:	yes(PHENYLENEDIAMINES)

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data

Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorization (Article 59).	:	This product does not contain substances of very high concern.
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries must be considered:: Number on list 3 Number on list 30: 2-(2-aminoethylamino)ethanol Number on list 40 This substance/mixture shall not be used in aerosol dispensers intended for supply to the general public for entertainment and decorative purposes. Number on list 75 If you intend to use this product as tattoo ink, please contact your vendor.

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E2	ENVIRONMENTAL HAZARDS

Occupational Illnesses (R-461-3, France)	:	43, 4 bis, 84, 49 bis, 49
Reinforced medical supervision (R4624-23)	:	The product has no CMR properties category 1, 1A or 1B
Installations classified for the protection of the environment (Environment Code R511-9)	:	4511

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

15.2 Chemical Safety Assessment

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

SECTION 16: Other information

Full text of H-Statements

H226	:	Flammable liquid and vapor.
H301	:	Toxic if swallowed.
H302	:	Harmful if swallowed.
H302 + H312	:	Harmful if swallowed or in contact with skin.
H304	:	May be fatal if swallowed and enters airways.
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.
H332	:	Harmful if inhaled.
H335	:	May cause respiratory irritation.
H341	:	Suspected of causing genetic defects.
H360Df	:	May damage the unborn child. Suspected of damaging fertility.
H373	:	May cause damage to organs through prolonged or repeated exposure if inhaled.
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.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Muta.	:	Germ cell mutagenicity
Repr.	:	Reproductive toxicity
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure
2000/39/EC	:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
FR VLE	:	France. Occupational Exposure Limits
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit

FR VLE / VME : Time Weighted Average
FR VLE / VLCT (VLE) : Short Term Exposure Limit

Further information

Classification of the mixture:		**Classification procedure:**
Skin Corr. 1B	H314	Calculation method
Eye Dam. 1	H318	Calculation method
Skin Sens. 1	H317	Calculation method
Repr. 1B	H360D	Calculation method
Aquatic Chronic 2	H411	Calculation method

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