Safety Data Sheet according to Regulation (EC) No1907/2006

SDS No. : 290572
V003.4

Loctite 9464A Kit component

Revision: 20.03.2014
printing date: 15.12.2014

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

1.1. Product identifier
Loctite 9464A Kit component

Contains:
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)
RP Bisphenol F-epichlorohydrin resin, MW<=700
1,4-Bis(glycidoxymethyl)cyclohexane

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use:
2-c-epoxide adhesive

1.3. Details of the supplier of the safety data sheet
Henkel Limited
2 Bishop Square Business Park
AL109EY Herfordshire Hatfield

Great Britain

Phone: +44 1606 593933
Fax-no.: +44 1606 863762

ua-productsafety.uk@uk.henkel.com

1.4. Emergency telephone number
24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Skin irritation	Category 2
H315 Causes skin irritation.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Chronic hazards to the aquatic environment	Category 2
H411 Toxic to aquatic life with long lasting effects.	

Classification (DPD):

Xi - Irritant
R36/38 Irritating to eyes and skin.
Sensitizing
R43 May cause sensitisation by skin contact.
N - Dangerous for the environment
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:	
Signal word:	Warning
Hazard statement:	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H411 Toxic to aquatic life with long lasting effects.
Precautionary statement: Prevention	P273 Avoid release to the environment. P280 Wear protective gloves.
Precautionary statement: Response	P302+P352 IF ON SKIN: Wash with plenty of soap and water. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P337+P313 If eye irritation persists: Get medical advice/attention.

Label elements (DPD):

Xi - Irritant

N - Dangerous for the environment

Risk phrases:

R36/38 Irritating to eyes and skin.
R43 May cause sensitisation by skin contact.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

S24 Avoid contact with skin.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of water and soap.
S37 Wear suitable gloves.
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

Additional labeling:

Contains epoxy constituents. See information supplied by the manufacturer.

Contains:
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700),
RP Bisphenol F-epichlorohydrin resin, MW<=700,
1,4-Bis(glycidoxymethyl)cyclohexane

2.3. Other hazards
None if used properly.

SECTION 3: Composition/information on ingredients

General chemical description:
Epoxy resin

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	500-033-5 500-033-5 01-2119456619-26	30- 40 %	Skin irritation 2 H315 Skin sensitizer 1 H317 Serious eye irritation 2 H319 Chronic hazards to the aquatic environment 2 H411
RP Bisphenol F-epichlorohydrin resin, MW<=700 28064-14-4		30- 40 %	Serious eye irritation 2 H319 Skin irritation 2 H315 Skin sensitizer 1 H317 Chronic hazards to the aquatic environment 2 H411
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	238-098-4	1- 10 %	Skin irritation 2; Dermal H315 Skin sensitizer 1; Dermal H317 Serious eye irritation 2 H319

For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

Declaration of ingredients according to DPD (EC) No 1999/45:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	500-033-5 500-033-5 01-2119456619-26	30 - 40 %	R43 Xi - Irritant; R36/38 N - Dangerous for the environment; R51/53
RP Bisphenol F-epichlorohydrin resin, MW<=700 28064-14-4		30 - 40 %	Xi - Irritant; R36/38, R43 N - Dangerous for the environment; R51/53
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	238-098-4	1 - 10 %	Xi - Irritant; R36/38, R43

For full text of the R-Phrases indicated by codes see section 16 'Other Information'.
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Move to fresh air. If symptoms persist, seek medical advice.

Skin contact:
Rinse with running water and soap.
Obtain medical attention if irritation persists.

Eye contact:
Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

Ingestion:
Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed
SKIN: Redness, inflammation.

SKIN: Rash, Urticaria.

EYE: Irritation, conjunctivitis.

4.3. Indication of any immediate medical attention and special treatment needed
See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media:
Carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:
None known

5.2. Special hazards arising from the substance or mixture
In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.

5.3. Advice for firefighters
Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid skin and eye contact.

6.2. Environmental precautions
Do not let product enter drains.

6.3. Methods and material for containment and cleaning up
For small spills wipe up with paper towel and place in container for disposal.
For large spills absorb onto inert absorbent material and place in sealed container for disposal.
Wash spillage site thoroughly with soap and water or detergent solution.

6.4. Reference to other sections
See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Use only in well-ventilated areas.
Avoid skin and eye contact.
Prolonged or repeated skin contact should be avoided to minimise any risk of sensitisation.

Hygiene measures:
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.
Good industrial hygiene practices should be observed.

7.2. Conditions for safe storage, including any incompatibilities
Store in a cool, well-ventilated place.

7.3. Specific end use(s)
2-c-epoxide adhesive

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient	ppm	mg/m³	Type	Category	Remarks
BARIUM SULPHATE, INHALABLE DUST 7727-43-7		10	Time Weighted Average (TWA):		EH40 WEL
BARIUM SULPHATE, RESPIRABLE DUST 7727-43-7		4	Time Weighted Average (TWA):		EH40 WEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	aqua (freshwater)					0,006 mg/L	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	aqua (marine water)					0,0006 mg/L	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	aqua (intermittent releases)					0,018 mg/L	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	STP					10 mg/L	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	sediment (freshwater)				0,996 mg/kg		
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	sediment (marine water)				0,0996 mg/kg		
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	soil				0,196 mg/kg		
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	oral					11 mg/kg food	

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	worker	Dermal	Acute/short term exposure - systemic effects		8,33 mg/kg bw/day	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	worker	inhalation	Acute/short term exposure - systemic effects		12,25 mg/m3	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	worker	Dermal	Long term exposure - systemic effects		8,33 mg/kg bw/day	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	worker	inhalation	Long term exposure - systemic effects		12,25 mg/m3	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	general population	Dermal	Acute/short term exposure - systemic effects		3,571 mg/kg bw/day	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	general population	Dermal	Long term exposure - systemic effects		3,571 mg/kg bw/day	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	general population	inhalation	Acute/short term exposure - systemic effects		0,75 mg/m3	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	general population	inhalation	Long term exposure - systemic effects		0,75 mg/m3	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	general population	oral	Acute/short term exposure - systemic effects		0,75 mg/kg bw/day	
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	general population	oral	Long term exposure - systemic effects		0,75 mg/kg bw/day	

Biological Exposure Indices:
None

8.2. Exposure controls:

Respiratory protection:
Ensure adequate ventilation.
An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area
Filter type: A

Hand protection:
Chemical-resistant protective gloves (EN 374).
Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:
Wear protective glasses.

Skin protection:
Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	paste white
Odor	odorless
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Initial boiling point	> 148 °C (> 298.4 °F)
Flash point	> 148 °C (> 298.4 °F)
Decomposition temperature	No data available / Not applicable
Vapour pressure (50 °C (122 °F))	< 700 mbar
Density ()	1,4 g/cm3
Bulk density	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (Solvent: Water)	Insoluble
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity
Reaction with strong acids.
Reacts with strong oxidants.
Reaction with some curing agents may produce an exothermic reaction which in large masses could cause runaway polymerization.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
See section reactivity

10.4. Conditions to avoid
No decomposition if used according to specifications.

10.5. Incompatible materials
See section reactivity

10.6. Hazardous decomposition products
carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

General toxicological information:
The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Oral toxicity:
May cause irritation to the digestive tract.

Inhalative toxicity:
May cause irritation to respiratory system.

Skin irritation:
Causes skin irritation.

Eye irritation:
Causes serious eye irritation.

Sensitizing:
May cause an allergic skin reaction.

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	LD50	15.000 mg/kg	oral		rat	

Acute inhalative toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	LD50	23.000 mg/kg	dermal		rabbit	
RP Bisphenol F-epichlorohydrin resin, MW<=700 28064-14-4	LD50	> 6.000 mg/kg	dermal		rabbit	

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	slightly irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	negative	bacterial reverse mutation assay (e.g Ames test)			OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay)

SECTION 12: Ecological information

General ecological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

12.1. Toxicity

Ecotoxicity:

Toxic to aquatic life with long lasting effects.

Do not empty into drains / surface water / ground water.

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	LC50	1,750000 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
RP Bisphenol F-epichlorohydrin resin, MW<=700 28064-14-4	EC50	3,5 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

12.2. Persistence and degradability

Persistence and Biodegradability:

The product is not biodegradable.

Hazardous components CAS-No.	Result	Route of application	Degradability	Method

RP Bisphenol F-epichlorohydrin resin, MW<=700 28064-14-4		aerobic	10 - 16 %	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)

12.3. Bioaccumulative potential / 12.4. Mobility in soil

Mobility:
Cured adhesives are immobile.

Bioaccumulative potential:
No data available.

12.5. Results of PBT and vPvB assessment

Hazardous components **CAS-No.**	**PBT/vPvB**
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:
Dispose of in accordance with local and national regulations.

Disposal of uncleaned packages:
After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.
Disposal must be made according to official regulations.

Waste code
08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

SECTION 14: Transport information

14.1. UN number

ADR	3082
RID	3082
ADNR	3082
IMDG	3082
IATA	3082

14.2. UN proper shipping name

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-F Epichlorhydrin resin,Bisphenol-A Epichlorhydrin resin)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-F Epichlorhydrin resin,Bisphenol-A Epichlorhydrin resin)
ADNR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-F Epichlorhydrin resin,Bisphenol-A Epichlorhydrin resin)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-F Epichlorhydrin resin,Bisphenol-A Epichlorhydrin resin)
IATA	Environmentally hazardous substance, liquid, n.o.s. (Bisphenol-F Epichlorhydrin resin,Bisphenol-A Epichlorhydrin resin)

14.3. Transport hazard class(es)

ADR	9
RID	9
ADNR	9
IMDG	9
IATA	9

14.4. Packaging group

ADR	III
RID	III
ADNR	III
IMDG	III
IATA	III

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADNR	not applicable
IMDG	Marine pollutant
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable Tunnelcode: (E)
RID	not applicable
ADNR	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

VOC content < 3 %

(1999/13/EC)

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text
of all abbreviations indicated by codes in this safety data sheet are as follows:

R36/38 Irritating to eyes and skin.
R43 May cause sensitisation by skin contact.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Further information:

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Safety Data Sheet according to Regulation (EC) No1907/2006

SDS No. : 290576
V003.0

Loctite 9464B Kit component

Revision: 25.03.2014
printing date: 15.12.2014

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

1.1. Product identifier
Loctite 9464B Kit component

Contains:
Butadiene-acrylonitrile
Bis(aminopropyl)piperazine
Isophorone diamine
4-Tert-butylphenol
m-Phenylenebis(methylamine)
2-Piperazin-1-ylethylamine
Piperazine

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use:
Epoxy Hardener

1.3. Details of the supplier of the safety data sheet
Henkel Limited
2 Bishop Square Business Park
AL109EY Herfordshire Hatfield

Great Britain

Phone: +44 1606 593933
Fax-no.: +44 1606 863762

ua-productsafety.uk@uk.henkel.com

1.4. Emergency telephone number
24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Skin corrosion	Category 1B
H314 Causes severe skin burns and eye damage.	
Respiratory sensitizer	Category 1
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	

Classification (DPD):

C - Corrosive
R34 Causes burns.
Sensitizing
R42/43 May cause sensitization by inhalation and skin contact.
Dangerous for the environment
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:	
Signal word:	Danger
Hazard statement:	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Precautionary statement: Prevention	P261 Avoid breathing vapours. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement: Response	P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor/…

Label elements (DPD):

C - Corrosive

Risk phrases:
R34 Causes burns.
R42/43 May cause sensitization by inhalation and skin contact.

Safety phrases:
S23 Do not breathe vapour.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Contains:
Butadiene-acrylonitrile,
Bis(aminopropyl)piperazine,
Isophorone diamine,
4-Tert-butylphenol,
m-Phenylenebis(methylamine),
2-Piperazin-1-ylethylamine,
Piperazine

2.3. Other hazards
None if used properly.

SECTION 3: Composition/information on ingredients

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Butadiene-acrylonitrile 68683-29-4		>= 20- < 25 %	Skin irritation 2 H315 Skin sensitizer 1 H317
Benzyl alcohol 100-51-6	202-859-9 01-2119492630-38	>= 5- < 10 %	Acute toxicity 4; Oral H302 Acute toxicity 4; Inhalation H332 Serious eye irritation 2 H319
Bis(aminopropyl)piperazine 7209-38-3	230-589-1	>= 5- < 10 %	Skin corrosion 1B H314
Isophorone diamine 2855-13-2	220-666-8 01-2119514687-32	>= 1- < 5 %	Acute toxicity 4; Dermal H312 Acute toxicity 4; Oral H302 Skin corrosion 1B H314 Skin sensitizer 1 H317 Chronic hazards to the aquatic environment 3 H412
4-Tert-butylphenol 98-54-4	202-679-0 01-2119489419-21	>= 1- < 2,5 %	Skin irritation 2; Dermal H315 Skin sensitizer 1; Dermal H317 Serious eye damage 1 H318 Specific target organ toxicity - single exposure 3; Inhalation H335 Toxic to reproduction 2 H361
m-Phenylenebis(methylamine) 1477-55-0	216-032-5 01-2119480150-50	>= 1- < 2,5 %	Acute toxicity 4; Oral H302 Skin corrosion 1B H314 Skin sensitizer 1; Dermal H317 Acute toxicity 4; Inhalation H332 Chronic hazards to the aquatic environment 3 H412
2-Piperazin-1-ylethylamine 140-31-8	205-411-0 01-2119471486-30	>= 1- < 2,5 %	Acute toxicity 3; Dermal H311 Acute toxicity 4; Oral H302 Skin corrosion 1B H314 Chronic hazards to the aquatic environment 3 H412 Skin sensitizer 1 H317
Piperazine 110-85-0	203-808-3 01-2119480384-35 01-2119480384-39	>= 1- < 2,5 %	Toxic to reproduction 2 H361fd Skin corrosion 1B H314 Respiratory sensitizer 1 H334 Skin sensitizer 1 H317 Flammable solids 1 H228

For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

Declaration of ingredients according to DPD (EC) No 1999/45:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Butadiene-acrylonitrile 68683-29-4		>= 20 - < 25 %	Xi - Irritant; R38, R43
Benzyl alcohol 100-51-6	202-859-9 01-2119492630-38	>= 5 - < 10 %	Xn - Harmful; R20/22
Bis(aminopropyl)piperazine 7209-38-3	230-589-1	>= 5 - < 10 %	C - Corrosive; R34
Isophorone diamine 2855-13-2	220-666-8 01-2119514687-32	>= 1 - < 5 %	C - Corrosive; R34 Xn - Harmful; R21/22 R43 R52/53
4-Tert-butylphenol 98-54-4	202-679-0 01-2119489419-21	>= 1 - < 2,5 %	Xi - Irritant; R37/38, R41, R43 Xn - Harmful; R62 N - Dangerous for the environment; R51/53
m-Phenylenebis(methylamine) 1477-55-0	216-032-5 01-2119480150-50	>= 1 - < 2,5 %	Xn - Harmful; R20 Xn - Harmful; R22 C - Corrosive; R34 Xi - Irritant; R43 R52/53
2-Piperazin-1-ylethylamine 140-31-8	205-411-0 01-2119471486-30	>= 1 - < 2,5 %	C - Corrosive; R34 R43 Xn - Harmful; R21/22 R52/53
Piperazine 110-85-0	203-808-3 01-2119480384-35 01-2119480384-39	>= 1 - < 2,5 %	R42/43 C - Corrosive; R34 Toxic for reproduction - category 3.; R62, R63 F - Highly flammable; R11

For full text of the R-Phrases indicated by codes see section 16 'Other Information'.
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Move to fresh air.
In case of adverse health effects seek medical advice.

Skin contact:
Rinse with running water and soap.
Seek medical advice.

Eye contact:
Rinse immediately with plenty of running water (for 10 minutes). Seek medical attention if necessary.

Ingestion:
Rinse out mouth, drink 1-2 glasses of water, do not induce vomiting.
Seek medical advice.

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

Causes burns.

SKIN: Rash, Urticaria.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

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

See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media:
Carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:
None known

5.2. Special hazards arising from the substance or mixture
In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.

5.3. Advice for firefighters
Wear self-contained breathing apparatus.
Wear protective equipment.

Additional information:
In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation.
Avoid skin and eye contact.
Wear protective equipment.

6.2. Environmental precautions
Do not let product enter drains.

6.3. Methods and material for containment and cleaning up
For large spills absorb onto inert absorbent material and place in sealed container for disposal.
Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections
See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid skin and eye contact.
Use only in well-ventilated areas.
Gloves and safety glasses should be worn
Do not inhale vapors and fumes.

Hygiene measures:
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.
Good industrial hygiene practices should be observed.

7.2. Conditions for safe storage, including any incompatibilities
Store in sealed original container.
Store in a cool, well-ventilated place.

7.3. Specific end use(s)
Epoxy Hardener

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient	ppm	mg/m³	Type	Category	Remarks
BARIUM SULPHATE, INHALABLE DUST 7727-43-7		10	Time Weighted Average (TWA):		EH40 WEL
BARIUM SULPHATE, RESPIRABLE DUST 7727-43-7		4	Time Weighted Average (TWA):		EH40 WEL
SILICA, AMORPHOUS, INHALABLE DUST 112945-52-5		6	Time Weighted Average (TWA):		EH40 WEL
SILICA, AMORPHOUS, RESPIRABLE DUST 112945-52-5		2,4	Time Weighted Average (TWA):		EH40 WEL
PIPERAZINE 110-85-0		0,1	Time Weighted Average (TWA):		EH40 WEL
PIPERAZINE 110-85-0		0,3	Short Term Exposure Limit (STEL):		EH40 WEL
PIPERAZINE 110-85-0		0,1	Time Weighted Average (TWA):	Indicative	ECTLV
PIPERAZINE 110-85-0		0,3	Short Term Exposure Limit (STEL):	Indicative	ECTLV

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Benzyl alcohol 100-51-6	soil				0,456 mg/kg		
Benzyl alcohol 100-51-6	STP					39 mg/L	
Benzyl alcohol 100-51-6	sediment (freshwater)				5,27 mg/kg		
Benzyl alcohol 100-51-6	sediment (marine water)				0,527 mg/kg		
Benzyl alcohol 100-51-6	aqua (marine water)					0,1 mg/L	
Benzyl alcohol 100-51-6	aqua (intermittent releases)					2,3 mg/L	
Benzyl alcohol 100-51-6	aqua (freshwater)					1 mg/L	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	aqua (freshwater)					0,06 mg/L	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	aqua (marine water)					0,006 mg/L	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	aqua (intermittent releases)					0,23 mg/L	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	sediment (freshwater)				5,784 mg/kg		
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	sediment (marine water)				0,578 mg/kg		
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	soil				1,121 mg/kg		
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	STP					3,18 mg/L	
m-Phenylenebis(methylamine) 1477-55-0	aqua (freshwater)					0,094 mg/L	
m-Phenylenebis(methylamine) 1477-55-0	aqua (marine water)					0,0094 mg/L	
m-Phenylenebis(methylamine) 1477-55-0	aqua (intermittent releases)					0,152 mg/L	
m-Phenylenebis(methylamine) 1477-55-0	STP					10 mg/L	
m-Phenylenebis(methylamine) 1477-55-0	sediment (freshwater)				0,43 mg/kg		
m-Phenylenebis(methylamine) 1477-55-0	sediment (marine water)				0,043 mg/kg		
m-Phenylenebis(methylamine) 1477-55-0	soil				0,045 mg/kg		
2-Piperazin-1-ylethylamine 140-31-8	aqua (freshwater)					0,058 mg/L	
2-Piperazin-1-ylethylamine 140-31-8	aqua (marine water)					0,0058 mg/L	
2-Piperazin-1-ylethylamine 140-31-8	sediment (freshwater)				215 mg/kg		
2-Piperazin-1-ylethylamine 140-31-8	aqua (marine water)				21,5 mg/kg		
2-Piperazin-1-ylethylamine 140-31-8	soil				42,9 mg/kg		
2-Piperazin-1-ylethylamine 140-31-8	STP					250 mg/L	
Piperazine 110-85-0	aqua (freshwater)					1,25 mg/L	
Piperazine 110-85-0	aqua (marine water)					0,125 mg/L	
Piperazine 110-85-0	aqua (intermittent					1,25 mg/L	

	releases)						
Piperazine 110-85-0	sediment (freshwater)				4,5 mg/kg		
Piperazine 110-85-0	sediment (marine water)				0,45 mg/kg		
Piperazine 110-85-0	soil				11,5 mg/kg		
Piperazine 110-85-0	STP					54 mg/L	
Piperazine 110-85-0	oral				4,6 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Benzyl alcohol 100-51-6	general population	oral	Acute/short term exposure - systemic effects		25 mg/kg bw/day	
Benzyl alcohol 100-51-6	general population	oral	Long term exposure - systemic effects		5 mg/kg bw/day	
Benzyl alcohol 100-51-6	worker	inhalation	Acute/short term exposure - systemic effects		450 mg/m3	
Benzyl alcohol 100-51-6	worker	inhalation	Long term exposure - systemic effects		90 mg/m3	
Benzyl alcohol 100-51-6	general population	inhalation	Acute/short term exposure - systemic effects		95,5 mg/m3	
Benzyl alcohol 100-51-6	general population	inhalation	Long term exposure - systemic effects		19,1 mg/m3	
Benzyl alcohol 100-51-6	worker	Dermal	Acute/short term exposure - systemic effects		47 mg/kg bw/day	
Benzyl alcohol 100-51-6	worker	Dermal	Long term exposure - systemic effects		9,5 mg/kg bw/day	
Benzyl alcohol 100-51-6	general population	Dermal	Acute/short term exposure - systemic effects		28,5 mg/kg bw/day	
Benzyl alcohol 100-51-6	general population	Dermal	Long term exposure - systemic effects		5,7 mg/kg bw/day	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	worker	inhalation	Acute/short term exposure - systemic effects		20,1 mg/m3	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	worker	inhalation	Acute/short term exposure - local effects		20,1 mg/m3	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	general population	oral	Long term exposure - systemic effects		0,526 mg/kg bw/day	
2-Piperazin-1-ylethylamine 140-31-8	worker	Dermal	Acute/short term exposure - systemic effects		20 mg/kg bw/day	
2-Piperazin-1-ylethylamine 140-31-8	worker	inhalation	Acute/short term exposure - systemic effects		21,4 mg/m3	
2-Piperazin-1-ylethylamine 140-31-8	worker	Dermal	Acute/short term exposure - local effects		0,04 mg/cm2	
2-Piperazin-1-ylethylamine 140-31-8	worker	Dermal	Long term exposure - systemic effects		3,3 mg/kg bw/day	
2-Piperazin-1-ylethylamine 140-31-8	worker	inhalation	Long term exposure - systemic effects		3,6 mg/m3	
2-Piperazin-1-ylethylamine 140-31-8	worker	Dermal	Long term exposure - local effects		0,006 mg/cm2	
2-Piperazin-1-ylethylamine 140-31-8	general population	Dermal	Acute/short term exposure - systemic effects		10 mg/kg bw/day	
2-Piperazin-1-ylethylamine 140-31-8	general population	inhalation	Acute/short term exposure - systemic effects		5,3 mg/m3	
2-Piperazin-1-ylethylamine 140-31-8	general population	oral	Acute/short term exposure - systemic effects		1,5 mg/kg bw/day	
2-Piperazin-1-ylethylamine 140-31-8	general population	oral	Acute/short term exposure - local effects		0,02 mg/cm2	
2-Piperazin-1-ylethylamine 140-31-8	general population	Dermal	Long term exposure -		1,7 mg/kg bw/day	

			systemic effects			
2-Piperazin-1-ylethylamine 140-31-8	general population	inhalation	Long term exposure - systemic effects		0,9 mg/m3	
2-Piperazin-1-ylethylamine 140-31-8	general population	oral	Long term exposure - systemic effects		0,3 mg/kg bw/day	
2-Piperazin-1-ylethylamine 140-31-8	general population	Dermal	Long term exposure - local effects		0,003 mg/cm2	
Piperazine 110-85-0	worker	Dermal	Acute/short term exposure - systemic effects		0,042 mg/kg bw/day	
Piperazine 110-85-0	worker	inhalation	Acute/short term exposure - systemic effects		0,3 mg/m3	
Piperazine 110-85-0	worker	Dermal	Acute/short term exposure - local effects		2 %	
Piperazine 110-85-0	worker	inhalation	Acute/short term exposure - local effects		0,3 mg/m3	
Piperazine 110-85-0	worker	Dermal	Long term exposure - systemic effects		0,014 mg/kg bw/day	
Piperazine 110-85-0	worker	inhalation	Long term exposure - systemic effects		0,1 mg/m3	
Piperazine 110-85-0	worker	inhalation	Long term exposure - local effects		0,3 mg/m3	
Piperazine 110-85-0	general population	oral	Long term exposure - systemic effects		1,5 mg/kg bw/day	

Biological Exposure Indices:
None

8.2. Exposure controls:

Respiratory protection:
Ensure adequate ventilation.
Do not inhale vapors and fumes.
An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area
Filter type: A

Hand protection:
Chemical-resistant protective gloves (EN 374).
Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:
Tightly fitting safety goggles
Avoid eye contact.

Skin protection:
Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	paste black
Odor	amine-like
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Initial boiling point	No data available / Not applicable
Flash point	No data available / Not applicable
Decomposition temperature	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Density ()	1,36 g/cm3
Bulk density	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative)	No data available / Not applicable
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Keep away from strong oxidizing agents, strong Lewis or mineral acids.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if used according to specifications.
Avoid contact with acids and oxidizing agents.
Avoid contact with water.

10.5. Incompatible materials

See section reactivity

10.6. Hazardous decomposition products

carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

General toxicological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Oral toxicity:
May cause irritation to the digestive tract.

Skin irritation:
Causes severe skin burns and eye damage.

Sensitizing:
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Butadiene-acrylonitrile 68683-29-4	LD50	> 15.380 mg/kg	oral		rat	
Benzyl alcohol 100-51-6	LD50	1.620 mg/kg	oral		rat	
Isophorone diamine 2855-13-2	LD50	1.030 mg/kg	oral		rat	
Piperazine 110-85-0	LD50	2.600 mg/kg	oral		rat	

Acute inhalative toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Benzyl alcohol 100-51-6	Acute toxicity estimate (ATE)	4,17 mg/l	inhalation			Expert judgement
Benzyl alcohol 100-51-6	LC50	> 4,178 mg/l		4 h	rat	
m-Phenylenebis(methylamine) 1477-55-0	LC50	2,4 mg/l	inhalation	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Butadiene-acrylonitrile 68683-29-4	LD50	> 3.000 mg/kg	dermal		rabbit	
2-Piperazin-1-ylethylamine 140-31-8	LD50	866 mg/kg	dermal		rabbit	
Piperazine 110-85-0	LD50	8.300 mg/kg	dermal		rabbit	OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Benzyl alcohol 100-51-6	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
4-Tert-butylphenol 98-54-4	irritating			
2-Piperazin-1-ylethylamine 140-31-8	corrosive		rabbit	

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Benzyl alcohol 100-51-6	Category II	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Benzyl alcohol 100-51-6	moderately irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Isophorone diamine 2855-13-2	corrosive		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
4-Tert-butylphenol 98-54-4	Category 1 (irreversible effects on the eye)		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Benzyl alcohol 100-51-6	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Isophorone diamine 2855-13-2	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
4-Tert-butylphenol 98-54-4	sensitising			
m-Phenylenebis(methylamine) 1477-55-0	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
2-Piperazin-1-ylethylamine 140-31-8	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Benzyl alcohol 100-51-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		
Isophorone diamine 2855-13-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		EU Method B.13/14 (Mutagenicity)
4-Tert-butylphenol 98-54-4	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
4-Tert-butylphenol 98-54-4	negative	intraperitoneal		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
m-Phenylenebis(methylamine) 1477-55-0	negative	in vitro mammalian chromosome aberration test	with and without		
	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		

Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Isophorone diamine 2855-13-2	NOAEL=< 60 mg/kg	oral: drinking water	13 weeks	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
4-Tert-butylphenol 98-54-4	LOAEL=>= 200 mg/kg	oral: gavage	daily	rat	
m-Phenylenebis(methylamine) 1477-55-0	LOAEL=>= 600 mg/kg	oral: gavage	28 days daily	rat	other guideline:

SECTION 12: Ecological information

General ecological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

12.1. Toxicity

Ecotoxicity:

Do not empty into drains / surface water / ground water.

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Benzyl alcohol 100-51-6	LC50	646 mg/l	Fish	48 h	Leuciscus idus	DIN 38412-15
Benzyl alcohol 100-51-6	EC50	360 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Benzyl alcohol 100-51-6	EC50	640 mg/l	Algae	96 h	Scenedesmus quadricauda	OECD Guideline 201 (Alga, Growth Inhibition Test)
Isophorone diamine 2855-13-2	LC50	110 mg/l	Fish	96 h	Leuciscus idus	EU Method C.1 (Acute Toxicity for Fish)
Isophorone diamine 2855-13-2	EC50	42 mg/l	Daphnia	24 h	Daphnia magna	
Isophorone diamine 2855-13-2	NOEC	1,5 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	EU Method C.3 (Algal Inhibition test)
	EC50	37 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	EU Method C.3 (Algal Inhibition test)
Isophorone diamine 2855-13-2	NOEC	3 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
4-Tert-butylphenol 98-54-4	LC50	5,14 mg/l	Fish	96 h	Pimephales promelas	EU Method C.1 (Acute Toxicity for Fish)
4-Tert-butylphenol 98-54-4	EC50	3,9 mg/l	Daphnia	48 h	Daphnia magna	
4-Tert-butylphenol 98-54-4	EC50	11,2 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09
4-Tert-butylphenol 98-54-4	NOEC	0,73 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
m-Phenylenebis(methylamine) 1477-55-0	LC50	> 100 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
m-Phenylenebis(methylamine) 1477-55-0	EC50	16 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
m-Phenylenebis(methylamine) 1477-55-0	NOEC	22,9 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
	EC50	33,3 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
m-Phenylenebis(methylamine) 1477-55-0	NOEC	4,7 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
2-Piperazin-1-ylethylamine 140-31-8	LC50	> 100 mg/l	Fish	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-Piperazin-1-ylethylamine 140-31-8	EC50	32 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-Piperazin-1-ylethylamine 140-31-8	NOEC	31 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
	EC50	495 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Piperazine 110-85-0	LC50	> 100 mg/l	Fish	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
Piperazine 110-85-0	EC50	10 - 100 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Piperazine	EC50	> 1.000 mg/l	Algae	72 h	Selenastrum capricornutum	OECD Guideline

110-85-0					(new name: Pseudokirchnerella subcapitata)	201 (Alga, Growth Inhibition Test)

12.2. Persistence and degradability

Persistence and Biodegradability:
The product is not biodegradable.

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Benzyl alcohol 100-51-6	readily biodegradable	aerobic	92 - 96 %	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
Isophorone diamine 2855-13-2		aerobic	8 %	OECD Guideline 301 A (new version) (Ready Biodegradability: DOC Die Away Test)
4-Tert-butylphenol 98-54-4	readily biodegradable	aerobic	98 %	OECD Guideline 301 A (new version) (Ready Biodegradability: DOC Die Away Test)
2-Piperazin-1-ylethylamine 140-31-8	under test conditions no biodegradation observed	aerobic	0 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Piperazine 110-85-0	readily biodegradable	aerobic	65 %	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)

12.3. Bioaccumulative potential / 12.4. Mobility in soil

Mobility:
Cured adhesives are immobile.

Bioaccumulative potential:
No data available.

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
Benzyl alcohol 100-51-6	1,08					
4-Tert-butylphenol 98-54-4	2,44					OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
2-Piperazin-1-ylethylamine 140-31-8	-1,48					OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Piperazine 110-85-0		0,3 - 0,9	42 d	Oryzias latipes	25 °C	OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)
Piperazine 110-85-0	-0,8					

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB

Benzyl alcohol 100-51-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Isophorone diamine 2855-13-2	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
4-Tert-butylphenol 98-54-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
m-Phenylenebis(methylamine) 1477-55-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
2-Piperazin-1-ylethylamine 140-31-8	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Piperazine 110-85-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Dispose of in accordance with local and national regulations.

Disposal of uncleaned packages:

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

SECTION 14: Transport information

14.1. UN number

ADR	2735
RID	2735
ADNR	2735
IMDG	2735
IATA	2735

14.2. UN proper shipping name

ADR	AMINES, LIQUID, CORROSIVE, N.O.S. (Bis(aminopropyl)piperazine,Isophoronediamine)
RID	AMINES, LIQUID, CORROSIVE, N.O.S. (Bis(aminopropyl)piperazine,Isophoronediamine)
ADNR	AMINES, LIQUID, CORROSIVE, N.O.S. (Bis(aminopropyl)piperazine,Isophoronediamine)
IMDG	AMINES, LIQUID, CORROSIVE, N.O.S. (Bis(aminopropyl)piperazine,Isophoronediamine)
IATA	Amines, liquid, corrosive, n.o.s. (Bis(aminopropyl)piperazine,Isophoronediamine)

14.3. Transport hazard class(es)

ADR	8
RID	8
ADNR	8
IMDG	8
IATA	8

14.4. Packaging group

ADR	III
RID	III
ADNR	III
IMDG	III
IATA	III

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADNR	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable Tunnelcode: (E)
RID	not applicable
ADNR	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

VOC content (1999/13/EC) < 3,00 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text
of all abbreviations indicated by codes in this safety data sheet are as follows:

R11 Highly flammable.
R20 Harmful by inhalation.
R20/22 Harmful by inhalation and if swallowed.
R21/22 Harmful in contact with skin and if swallowed.
R22 Harmful if swallowed.
R34 Causes burns.
R37/38 Irritating to respiratory system and skin.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R42/43 May cause sensitization by inhalation and skin contact.
R43 May cause sensitisation by skin contact.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62 Possible risk of impaired fertility.
R63 Possible risk of harm to the unborn child.
H228 Flammable solid.
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.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
H412 Harmful to aquatic life with long lasting effects.

Further information:

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.