



Safety Data Sheet according to (EC) No 1907/2006 as amended

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LOCTITE EA 9464 B

SDS No. : 653664
V004.0

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

1.1. Product identifier

LOCTITE EA 9464 B

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

Intended use:

Epoxy adhesive

1.3. Details of the supplier of the safety data sheet

Henkel Ltd

Adhesives

Wood Lane End

HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000

ua-productsafety.uk@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.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

Sub-category 1B

H314 Causes severe skin burns and eye damage.

Serious eye damage

Category 1

H318 Causes serious eye damage.

Skin sensitizer

Category 1

H317 May cause an allergic skin reaction.

Toxic to reproduction

Category 2

H361 Suspected of damaging fertility or the unborn child.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:**Contains**

Butadiene-acrylonitrile

formaldehyde, polymeric reaction products with 4- tertbutylphenol, mphenylenebis(methylamine) and trimethylhexane- 1,6-diamine

Bis(aminopropyl)piperazine

Isophorone diamine

2-piperazin-1-ylethylamine

m-Phenylenebis(methylamine)

Signal word:

Danger

Hazard statement:

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H361 Suspected of damaging fertility or the unborn child.

**Precautionary statement:
Prevention**

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 [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

2.3. Other hazards

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

Following substances are present in a concentration $\geq 0,1\%$ and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in concentration $\geq$ the concentration limit that are assessed to be a PBT, vPvB or ED.

SECTION 3: Composition/information on ingredients**3.2. Mixtures**

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

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
Butadiene-acrylonitrile 68683-29-4	20- 40 %	Skin Irrit. 2, H315 Skin Sens. 1, H317		
Barite (Ba(SO ₄)) 13462-86-7 236-664-5	10- 20 %			EU OEL
formaldehyde, polymeric reaction products with 4- tertbutylphenol, mphenylenebis(methylamine) and trimethylhexane- 1,6- diamine	5- < 10 %	Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Chronic 3, H412		
benzyl alcohol 100-51-6 202-859-9 01-2119492630-38	5- < 10 %	Acute Tox. 4, Oral, H302 Acute Tox. 4, Inhalation, H332 Eye Irrit. 2, H319	dermal:ATE = 2.500 mg/kg inhalation:ATE = 4,17 mg/l;dust/mist	
Bis(aminopropyl)piperazine 7209-38-3 230-589-1 01-2120747740-54	5- < 10 %	Acute Tox. 4, Oral, H302 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412		
Isophorone diamine 2855-13-2 220-666-8 01-2119514687-32	1- < 5 %	Skin Sens. 1A, H317 Eye Dam. 1, H318 Skin Corr. 1B, H314 Acute Tox. 4, Oral, H302	Skin Sens. 1A; H317; C >= 0,001 % ===== oral:ATE = 1.030 mg/kg inhalation:ATE = 5,011 mg/l;	
2-piperazin-1-ylethylamine 140-31-8 205-411-0 01-2119471486-30	1- < 5 %	Acute Tox. 3, Dermal, H311 Acute Tox. 4, Oral, H302 Skin Corr. 1B, H314 Aquatic Chronic 3, H412 Skin Sens. 1, H317 Repr. 2, H361	inhalation:ATE = > 10 mg/l;dust/mist	
m-Phenylenebis(methylamine) 1477-55-0 216-032-5 01-2119480150-50	1- < 3 %	Acute Tox. 4, Oral, H302 Skin Corr. 1B, H314 Skin Sens. 1B, H317 Acute Tox. 4, Inhalation, H332 Aquatic Chronic 3, H412 Eye Dam. 1, H318		

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.

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: Rash, Urticaria.

Causes burns.

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:

water, carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:

High pressure waterjet

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 (NO_x) can be released.

5.3. Advice for firefighters

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

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

Avoid contact with skin and eyes.

Wear protective equipment.

Ensure adequate ventilation.

Keep away from sources of ignition.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Dispose of contaminated material as waste according to Section 13.

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.

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.

See advice in section 8

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.

Protect against contamination.

Store in a cool, well-ventilated place.

Refer to Technical Data Sheet

7.3. Specific end use(s)

Epoxy adhesive

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Barite (Ba(SO ₄)) 13462-86-7 [BARIUM COMPOUNDS, SOLUBLE (AS BA)]		0,5	Time Weighted Average (TWA):		EH40 WEL
Barite (Ba(SO ₄)) 13462-86-7 [BARIUM (SOLUBLE COMPOUNDS AS BA)]		0,5	Time Weighted Average (TWA):	Indicative	ECTLV
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS, INHALABLE DUST]		6	Time Weighted Average (TWA):		EH40 WEL
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS, RESPIRABLE DUST]		2,4	Time Weighted Average (TWA):		EH40 WEL
Silicon dioxide 112945-52-5 [Dust, respirable dust]		4	Time Weighted Average (TWA):		EH40 WEL
Silicon dioxide 112945-52-5 [Dust, inhalable dust]		10	Time Weighted Average (TWA):		EH40 WEL

Occupational Exposure Limits

Valid for
Ireland

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
2,2',2''-Nitrilotriethanol 102-71-6 [TRIETHANOLAMINE]		5	Time Weighted Average (TWA):		IR_OEL
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS]		6	Time Weighted Average (TWA):		IR_OEL
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS]		2,4	Time Weighted Average (TWA):		IR_OEL
Silicon dioxide 112945-52-5 [DUSTS NON-SPECIFIC]		10	Time Weighted Average (TWA):		IR_OEL
Silicon dioxide 112945-52-5 [DUSTS NON-SPECIFIC]		4	Time Weighted Average (TWA):		IR_OEL
m-Phenylenebis(methylamine) 1477-55-0 [M-XYLENE A,A'-DIAMINE (M-PHENYLENEBIS(METHYLAMINE))]		0,1	Time Weighted Average (TWA):		IR_OEL
m-Phenylenebis(methylamine) 1477-55-0 [M-XYLENE A,A'-DIAMINE (M-PHENYLENEBIS(METHYLAMINE))]		0,1	Time Weighted Average (TWA):		IR_OEL

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	sewage treatment plant (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				
Benzyl alcohol 100-51-6	Air						no hazard identified
Benzyl alcohol 100-51-6	Predator						no potential for bioaccumulation
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	sewage treatment plant (STP)		3,18 mg/l				
2-Piperazin-1-ylethylamine 140-31-8	aqua (freshwater)		0,058 mg/l				
2-Piperazin-1-ylethylamine 140-31-8	aqua (marine water)		0,006 mg/l				
2-Piperazin-1-ylethylamine 140-31-8	sediment (freshwater)				215 mg/kg		
2-Piperazin-1-ylethylamine 140-31-8	sediment (marine water)				21,5 mg/kg		
2-Piperazin-1-ylethylamine 140-31-8	sewage treatment plant (STP)		250 mg/l				
2-Piperazin-1-ylethylamine 140-31-8	Freshwater - intermittent		0,58 mg/l				
2-Piperazin-1-ylethylamine 140-31-8	Soil				1 mg/kg		
m-Phenylenebis(methylamine) 1477-55-0	aqua (freshwater)		0,094 mg/l				
m-Phenylenebis(methylamine) 1477-55-0	aqua (marine water)		0,009 mg/l				
m-Phenylenebis(methylamine) 1477-55-0	aqua (intermittent releases)		0,152 mg/l				
m-Phenylenebis(methylamine) 1477-55-0	sewage treatment plant (STP)		10 mg/l				
m-Phenylenebis(methylamine) 1477-55-0	sediment (freshwater)				12,4 mg/kg		
m-Phenylenebis(methylamine)	sediment				1,24 mg/kg		

1477-55-0	(marine water)						
m-Phenylenebis(methylamine) 1477-55-0	Soil				2,44 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		20 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	General population	oral	Long term exposure - systemic effects		4 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	Workers	inhalation	Acute/short term exposure - systemic effects		110 mg/m3	no hazard identified
Benzyl alcohol 100-51-6	Workers	inhalation	Long term exposure - systemic effects		22 mg/m3	no hazard identified
Benzyl alcohol 100-51-6	General population	inhalation	Acute/short term exposure - systemic effects		27 mg/m3	no hazard identified
Benzyl alcohol 100-51-6	General population	inhalation	Long term exposure - systemic effects		5,4 mg/m3	no hazard identified
Benzyl alcohol 100-51-6	Workers	dermal	Acute/short term exposure - systemic effects		40 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	Workers	dermal	Long term exposure - systemic effects		8 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	General population	dermal	Acute/short term exposure - systemic effects		20 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	General population	dermal	Long term exposure - systemic effects		4 mg/kg	no hazard identified
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	Workers	inhalation	Long term exposure - local effects		0,073 mg/m3	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	Workers	inhalation	Acute/short term exposure - local effects		0,073 mg/m3	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	General population	oral	Long term exposure - systemic effects		0,526 mg/kg	
2-Piperazin-1-ylethylamine 140-31-8	Workers	inhalation	Acute/short term exposure - local effects		80 mg/m3	
2-Piperazin-1-ylethylamine 140-31-8	Workers	inhalation	Long term exposure - local effects		0,015 mg/m3	
2-Piperazin-1-ylethylamine 140-31-8	Workers	Inhalation	Acute/short term exposure - systemic effects		10,6 mg/m3	
2-Piperazin-1-ylethylamine 140-31-8	Workers	dermal	Long term exposure - systemic effects		3,33 mg/kg	
2-Piperazin-1-ylethylamine 140-31-8	Workers	Inhalation	Long term exposure - systemic effects		10,6 mg/m3	
m-Phenylenebis(methylamine) 1477-55-0	Workers	dermal	Long term exposure - systemic effects		0,33 mg/kg	
m-Phenylenebis(methylamine) 1477-55-0	Workers	inhalation	Long term exposure - systemic effects		1,2 mg/m3	
m-Phenylenebis(methylamine) 1477-55-0	Workers	inhalation	Long term exposure - local effects		0,2 mg/m3	

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/extraction.

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 (EN 14387)

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:

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.

Protective eye equipment should conform to EN166.

Skin protection:

Wear suitable protective clothing.

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions.

Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	liquid
Delivery form	liquid
Colour	black
Odor	typical
Melting point	Not applicable, Product is a liquid
Initial boiling point	> 150 °C (> 302 °F)
Flammability	Currently under determination
Explosive limits	Currently under determination
Flash point	> 80,00 °C (> 176 °F)
Auto-ignition temperature	Currently under determination
Decomposition temperature	Currently under determination
pH	Not applicable
pH	Product is non-soluble (in water).
Viscosity (kinematic)	Currently under determination
Solubility (qualitative)	Currently under determination
Partition coefficient: n-octanol/water	Not applicable
	Mixture

Vapour pressure	Currently under determination
Density	1,36 g/cm ³ None
()	
Relative vapour density:	Currently under determination
Particle characteristics	Currently under determination

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with strong oxidants.

Reaction with strong acids.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Stable under normal conditions of storage and use.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

carbon oxides.

SECTION 11: Toxicological information

1.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**Acute oral toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Butadiene-acrylonitrile 68683-29-4	LD50	> 15.380 mg/kg	rat	not specified
Barite (Ba(SO ₄)) 13462-86-7	LD50	30.700 - 36.400 mg/kg	rat	not specified
Barite (Ba(SO ₄)) 13462-86-7	LD50	> 15.000 mg/kg	rat	not specified
benzyl alcohol 100-51-6	LD50	1.620 mg/kg	rat	not specified
Bis(aminopropyl)piperazine 7209-38-3	LD50	1.980 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Isophorone diamine 2855-13-2	Acute toxicity estimate (ATE)	1.030 mg/kg		Expert judgement
m-Phenylenebis(methylamine) 1477-55-0	LD50	980 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Butadiene-acrylonitrile 68683-29-4	LD50	> 3.000 mg/kg	rabbit	not specified
benzyl alcohol 100-51-6	Acute toxicity estimate (ATE)	2.500 mg/kg		Expert judgement
Isophorone diamine 2855-13-2	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
2-piperazin-1- ylethylamine 140-31-8	LD50	866 mg/kg	rabbit	Draize Test
m- Phenylenebis(methylamin e) 1477-55-0	LD50	> 3.100 mg/kg	rat	not specified

Acute inhalative toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
benzyl alcohol 100-51-6	Acute toxicity estimate (ATE)	4,17 mg/l	dust/mist			Expert judgement
benzyl alcohol 100-51-6	LC50	> 4,178 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Isophorone diamine 2855-13-2	LC50	> 5,01 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Isophorone diamine 2855-13-2	Acute toxicity estimate (ATE)	5,011 mg/l				Expert judgement
2-piperazin-1- ylethylamine 140-31-8	Acute toxicity estimate (ATE)	> 10 mg/l	dust/mist	4 h		Calculation method
m- Phenylenebis(methylamin e) 1477-55-0	LC50	1,16 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
benzyl alcohol 100-51-6	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Bis(aminopropyl)piperazi ne 7209-38-3	Category 1B (corrosive)		rabbit	BASF Test
2-piperazin-1- ylethylamine 140-31-8	corrosive	20 min	rabbit	not specified

Serious eye damage/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
benzyl alcohol 100-51-6	irritating	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Isophorone diamine 2855-13-2	corrosive		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
benzyl alcohol 100-51-6	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Bis(aminopropyl)piperazine 7209-38-3	sensitising	Skin sensitisation		QSAR (Quantitative Structure Activity Relationship)
Isophorone diamine 2855-13-2	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
2-piperazin-1- ylethylamine 140-31-8	sensitising	Guinea pig maximisation test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
m- Phenylenebis(methylamin e) 1477-55-0	Sub-Category 1B (sensitising)	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances 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		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Bis(aminopropyl)piperazine 7209-38-3	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		JAPAN: Guidelines for Screening Mutagenicity Testing Of Chemicals
Isophorone diamine 2855-13-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		EU Method B.13/14 (Mutagenicity)
2-piperazin-1- ylethylamine 140-31-8	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2-piperazin-1- ylethylamine 140-31-8	negative	DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro	with and without		not specified
2-piperazin-1- ylethylamine 140-31-8	negative	mammalian cell gene mutation assay	with and without		not specified
m- Phenylenebis(methylamin e) 1477-55-0	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		not specified
m- Phenylenebis(methylamin e) 1477-55-0	negative	in vitro mammalian chromosome aberration test	with and without		not specified
benzyl alcohol 100-51-6	negative	intraperitoneal		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
2-piperazin-1- ylethylamine 140-31-8	negative	intraperitoneal		mouse	not specified

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
benzyl alcohol 100-51-6	not carcinogenic	oral: gavage	104 weeks once daily, 5 days/week	rat	male/female	equivalent or similar OECD Guideline 451 (Carcinogenicity Studies)

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
benzyl alcohol 100-51-6	NOAEL P 200 mg/kg	screening	oral: gavage	mouse	not specified
2-piperazin-1- ylethylamine 140-31-8	NOAEL P 8000 ppm NOAEL F1 8000 ppm	screening	oral: drinking water	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

STOT-single exposure:

No data available.

STOT-repeated exposure::

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
benzyl alcohol 100-51-6	NOAEL 400 mg/kg	oral: gavage	13 weeks once daily, 5 days/week	rat	equivalent or similar to OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
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)
2-piperazin-1- ylethylamine 140-31-8	NOAEL 2000 ppm	oral: drinking water	>= 28 d daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
m- Phenylenebis(methylamin e) 1477-55-0	LOAEL >= 600 mg/kg	oral: gavage	28 days daily	rat	Guidelines for 28-Day Repeat Dose Toxicity Test (Japan)

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

SECTION 12: Ecological information

General ecological information:

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

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Barite (Ba(SO ₄)) 13462-86-7	LC50	Toxicity > Water solubility	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Barite (Ba(SO ₄)) 13462-86-7	NOEC	Toxicity > Water solubility	33 d	Danio rerio	OECD Guideline 210 (fish early lite stage toxicity test)
benzyl alcohol 100-51-6	LC50	460 mg/l	96 h	Pimephales promelas	EPA OPP 72-1 (Fish Acute Toxicity Test)
Isophorone diamine 2855-13-2	LC50	110 mg/l	96 h	Leuciscus idus	EU Method C.1 (Acute Toxicity for Fish)
2-piperazin-1-ylethylamine 140-31-8	LC50	> 100 mg/l	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	OECD Guideline 203 (Fish, Acute Toxicity Test)
m-Phenylenebis(methylamine) 1477-55-0	LC50	87,6 mg/l	96 h	Oryzias latipes	OECD Guideline 203 (Fish, Acute Toxicity Test)

Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Butadiene-acrylonitrile 68683-29-4	EC50	1.000 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Barite (Ba(SO ₄)) 13462-86-7	EC50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
benzyl alcohol 100-51-6	EC50	230 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Bis(aminopropyl)piperazine 7209-38-3	EC50	47,9 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Isophorone diamine 2855-13-2	EC50	23 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-piperazin-1-ylethylamine 140-31-8	EC50	32 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
m-Phenylenebis(methylamine) 1477-55-0	EC50	15,2 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Barite (Ba(SO ₄)) 13462-86-7	NOEC	Toxicity > Water solubility	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
benzyl alcohol 100-51-6	NOEC	51 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Isophorone diamine 2855-13-2	NOEC	3 mg/l	21 d	Daphnia magna	OECD Guideline 202 (Daphnia sp. Chronic Immobilisation Test)
m-Phenylenebis(methylamine) 1477-55-0	NOEC	4,7 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Butadiene-acrylonitrile 68683-29-4	EC50	> 1.000 mg/l	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
Barite (Ba(SO ₄)) 13462-86-7	EC50	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Barite (Ba(SO ₄)) 13462-86-7	NOEC	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
benzyl alcohol 100-51-6	EC50	770 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
benzyl alcohol 100-51-6	NOEC	310 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Bis(aminopropyl)piperazine 7209-38-3	EC50	32,3 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Bis(aminopropyl)piperazine 7209-38-3	NOEC	6,97 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Isophorone diamine 2855-13-2	EC10	11,2 mg/l	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
Isophorone diamine 2855-13-2	EC50	> 50 mg/l	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
2-piperazin-1-ylethylamine 140-31-8	NOEC	31 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-piperazin-1-ylethylamine 140-31-8	EC50	495 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
m-Phenylenebis(methylamine) 1477-55-0	EC50	33,3 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
m-Phenylenebis(methylamine) 1477-55-0	NOEC	22,9 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Barite (Ba(SO ₄)) 13462-86-7	EC0	> 10.000 mg/l	30 min		not specified
benzyl alcohol 100-51-6	EC10	658 mg/l	17 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test)
Isophorone diamine 2855-13-2	EC10	1.120 mg/l	18 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test)
2-piperazin-1-ylethylamine 140-31-8	EC10	100 mg/l	17 h		not specified
m-Phenylenebis(methylamine) 1477-55-0	EC50	> 1.000 mg/l	30 min	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
benzyl alcohol 100-51-6	readily biodegradable	aerobic	92 - 96 %	14 d	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
Bis(aminopropyl)piperazine 7209-38-3	not readily biodegradable.	aerobic	0 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Isophorone diamine 2855-13-2	not readily biodegradable.	aerobic	8 %	28 d	EU Method C.4-A (Determination of the "Ready" Biodegradability Dissolved Organic Carbon (DOC) Die-Away Test)
2-piperazin-1-ylethylamine 140-31-8	under test conditions no biodegradation observed	aerobic	0 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
m-Phenylenebis(methylamine) 1477-55-0	not readily biodegradable.	aerobic	49 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)

12.3. Bioaccumulative potential

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Barite (Ba(SO ₄)) 13462-86-7	74,4			Lepomis macrochirus	other guideline:

12.4. Mobility in soil

Hazardous substances CAS-No.	LogPow	Temperature	Method
benzyl alcohol 100-51-6	1,05	20 °C	EU Method A.8 (Partition Coefficient)
Bis(aminopropyl)piperazine 7209-38-3	-1,43	25 °C	QSAR (Quantitative Structure Activity Relationship)
Isophorone diamine 2855-13-2	0,99	23 °C	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)
m-Phenylenebis(methylamine) 1477-55-0	0,18	25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
Barite (Ba(SO ₄)) 13462-86-7	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.
benzyl alcohol 100-51-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Bis(aminopropyl)piperazine 7209-38-3	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.
2-piperazin-1-ylethylamine 140-31-8	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.

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

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

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

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information**14.1. UN number**

ADR	2735
RID	2735
ADN	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)
ADN	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
ADN	8
IMDG	8
IATA	8

14.4. Packing group

ADR	II
RID	II
ADN	II
IMDG	II
IATA	II

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

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

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EC)	< 3 %

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:

H302 Harmful if swallowed.
H311 Toxic 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.
H361 Suspected of damaging fertility or the unborn child.
H412 Harmful to aquatic life with long lasting effects.

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

Further information:

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