



SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by UK REACH Regulation SI 2019/758

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

1.1 Product identifier

Product identifier : 845R
Product name : Epoxy Activator
Product type : Liquid.
Other means of identification : 1250060133
Date of issue/ Date of revision : 25 May 2024
Version : 1.12
Date of previous issue : 21 May 2024

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

Identified uses : Coating component.
Uses advised against : Not for sale to or use by consumers.

1.3 Details of the supplier of the safety data sheet

Axalta Coating Systems Germany GmbH & Co. KG
Christbusch 25
DE 42285 Wuppertal
+49 (0)202 529-0

e-mail address of person responsible for this SDS : sds-competence@axalta.com

Axalta Coating Systems UK Ltd.
Unit 1, Quadrant Park, Mundells
GB Welwyn Garden City, Hertfordshire, AL7 1FS
+44 (0)1707 518 000

1.4 Emergency telephone number

Supplier

Telephone number : +(44)-870-8200418
Hours of operation :

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to UK CLP/GHS

Flam. Liq. 3, H226
Skin Irrit. 2, H315
Eye Dam. 1, H318
Skin Sens. 1, H317
STOT SE 3, H335
STOT SE 3, H336
STOT RE 2, H373
Asp. Tox. 1, H304

SECTION 2: Hazards identification

Aquatic Chronic 3, H412

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements**Hazard pictograms****Signal word**

: Danger

Contains

: Reaction mass of ethylbenzene and xylene
butan-1-ol
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine
ethylenediamine
Ethan-1,2-diamine, N-(2-aminoethyl)-N'-3-(trimethoxysilyl)propyl
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL)PROPYL]
-, HOMOPOLYMER

Hazard statements

: H226 - Flammable liquid and vapour.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H336 - May cause drowsiness or dizziness.
H373 - May cause damage to organs through prolonged or repeated exposure.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements**Prevention**

: P280 - Wear protective gloves. Wear eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 - Do not breathe vapour.

Response

: P301 + P331 - IF SWALLOWED: Do NOT induce vomiting.
P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.

Storage

: Not applicable.

Disposal

: Not applicable.

Supplemental label elements

: Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Not applicable.

2.3 Other hazards**Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII**

: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification

: None known.

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

Product/ingredient name	Identifiers	%	Classification	Type
Reaction mass of ethylbenzene and xylene	REACH #: 01-2119539452-40 EC: 905-588-0	≥25 - ≤50	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 3, H412	[1]
butan-1-ol	REACH #: 01-2119484630-38 EC: 200-751-6 CAS: 71-36-3 Index: 603-004-00-6	≥25 - ≤37	Flam. Liq. 3, H226 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336	[1] [2]
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl] ethylenediamine	EC: 252-390-9 CAS: 35141-30-1	≤10	Acute Tox. 4, H332 Eye Dam. 1, H318 Skin Sens. 1A, H317	[1]
ethylenediamine	REACH #: 01-2119480383-37 EC: 203-468-6 CAS: 107-15-3	≤0.76	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 3, H311 Acute Tox. 4, H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1B, H334 Skin Sens. 1B, H317 Aquatic Chronic 3, H412	[1] [3]
Ethan-1,2-diamine, N-(2-aminoethyl)-N'-3-(trimethoxysilyl)propyl	CAS: 103526-27-8	<1	Acute Tox. 4, H332 Eye Dam. 1, H318 Skin Sens. 1A, H317	[1]
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HOMOPOLYMER	CAS: 162339-40-4	<1	Acute Tox. 4, H332 Eye Dam. 1, H318 Skin Sens. 1A, H317	[1]
methanol	REACH #: 01-2119433307-44 EC: 200-659-6 CAS: 67-56-1 Index: 603-001-00-X	≤0.23	Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT SE 1, H370	[1] [2]
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HYDROCHLORIDE (1:1)	CAS: 97763-30-9	≤0.2	Acute Tox. 4, H332 Eye Dam. 1, H318 Skin Sens. 1A, H317	[1]
2,2'-iminodiethylamine	EC: 203-865-4 CAS: 111-40-0 Index: 612-058-00-X	≤0.2	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT SE 3, H335 See Section 16 for the full text of the H statements declared above.	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

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SECTION 3: Composition/information on ingredients

Type

[1] Substance classified with a physical, health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
 pain
 watering
 redness
- Inhalation** : Adverse symptoms may include the following:
 respiratory tract irritation
 coughing
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness

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SECTION 4: First aid measures

- Skin contact** : Adverse symptoms may include the following:
 pain or irritation
 redness
 blistering may occur
- Ingestion** : Adverse symptoms may include the following:
 stomach pains
 nausea or vomiting

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Recommended: alcohol-resistant foam, CO₂, powders, water spray.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.
- Hazardous combustion products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.
- Special protective equipment for fire-fighters** : Appropriate breathing apparatus may be required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Exclude sources of ignition and ventilate the area. Avoid breathing vapour or mist. Refer to protective measures listed in sections 7 and 8.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions** : Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.3 Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Preferably clean with a detergent. Avoid using solvents.

- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
 See Section 8 for information on appropriate personal protective equipment.
 See Section 13 for additional waste treatment information.

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SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Prevent the creation of flammable or explosive concentrations of vapours in air and avoid vapour concentrations higher than the occupational exposure limits.
 In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard.
 Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear antistatic footwear and clothing and floors should be of the conducting type.
 Keep away from heat, sparks and flame. No sparking tools should be used.
 Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding.
 Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
 Put on appropriate personal protective equipment (see Section 8).
 Never use pressure to empty. Container is not a pressure vessel.
 Always keep in containers made from the same material as the original one.
 Comply with the health and safety at work laws.
 Do not allow to enter drains or watercourses.

Information on fire and explosion protection

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations.

Notes on joint storage

Keep away from: oxidising agents, strong alkalis, strong acids.

Additional information on storage conditions

Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P5c	5000 tonne	50000 tonne

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
butan-1-ol	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 154 mg/m ³ 15 minutes. STEL: 50 ppm 15 minutes.
methanol	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 333 mg/m ³ 15 minutes. STEL: 250 ppm 15 minutes. TWA: 266 mg/m ³ 8 hours. TWA: 200 ppm 8 hours.
2,2'-iminodiethylamine	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed

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through skin.

TWA: 4.3 mg/m³ 8 hours.

TWA: 1 ppm 8 hours.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Reaction mass of ethylbenzene and xylene	DNEL	Long term Dermal	212 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	221 mg/m ³	Workers	Systemic
butan-1-ol	DNEL	Long term Oral	1.5625 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	3.125 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	55.357 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	155 mg/m ³	General population	Local
	DNEL	Long term Inhalation	310 mg/m ³	Workers	Local
	DNEL	Long term Oral	0.83 mg/kg bw/day	General population	Systemic
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl] ethylenediamine	DNEL	Long term Inhalation	2.9 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	16.45 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	50 mg/m ³	General population	Local
	DNEL	Long term Inhalation	50 mg/m ³	General population	Local
	DNEL	Short term Inhalation	50 mg/m ³	General population	Systemic
	DNEL	Short term Inhalation	260 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	260 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	260 mg/m ³	Workers	Systemic
	DNEL	Long term Oral	0.11 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	6.25 mg/m ³	General population	Systemic
ethylenediamine	DNEL	Long term Inhalation	25 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	196 ppm	Workers	Systemic
methanol	DNEL	Short term Oral	4 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	4 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	4 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	4 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	20 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Dermal	20 mg/kg bw/day	Workers	Systemic

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2,2'-iminodiethylamine	DNEL	Long term Dermal	20 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	26 mg/m ³	General population	Local
	DNEL	Long term Inhalation	26 mg/m ³	General population	Local
	DNEL	Short term Inhalation	26 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	26 mg/m ³	General population	Systemic
	DNEL	Short term Inhalation	130 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	130 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	130 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	130 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	3.6 ppm	Workers	Systemic
	DNEL	Long term Inhalation	0.87 mg/m ³	Workers	Local
	DNEL	Long term Dermal	1.1 mg/cm ²	Workers	Local
	DNEL	Short term Inhalation	2.6 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	4.6 mg/m ³	General population	Systemic
	DNEL	Short term Dermal	4.88 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	4.88 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	11.4 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	15.4 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	27.5 mg/m ³	General population	Systemic
	DNEL	Short term Inhalation	92.1 mg/m ³	Workers	Systemic

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
Reaction mass of ethylbenzene and xylene	Fresh water	0.327 mg/l	-
	Marine water	0.327 mg/l	-
	Sewage Treatment Plant	6.58 mg/l	-
	Fresh water sediment	12.46 mg/kg dwt	-
	Marine water sediment	12.46 mg/kg dwt	-
	Soil	2.31 mg/kg	-
	butan-1-ol	Fresh water	0.082 mg/l
Marine water		0.0082 mg/l	-
Fresh water sediment		0.324 mg/kg dwt	-
Marine water sediment		0.0324 mg/kg dwt	-
Soil		0.017 mg/kg dwt	-
Sewage Treatment Plant		2476 mg/l	-
ethylenediamine		Marine water	0.002 mg/l
	Fresh water	0.016 mg/l	-
	Sediment	7.68 mg/kg	-
methanol	Sewage Treatment Plant	100 mg/l	-
	Soil	100 mg/kg	-
	Sediment	7.7 mg/kg	-

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SECTION 8: Exposure controls/personal protection

	Marine water	2.08 mg/l	-
	Fresh water	20.8 mg/l	-

8.2 Exposure controls

Appropriate engineering controls : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Use safety eyewear designed to protect against splash of liquids.

Skin protection

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Gloves : Duration / breakthrough time: <1 hour,
Glove material: NBR, nitrile rubber, material thickness as splash protection: at least 0.2 mm, (EN374)
Glove material: NBR, nitrile rubber Material thickness for short-term contact: at least 0.5 mm, (EN374)

The recommendation for the type or types of glove to use when handling this product is based on information from the following source:

Expert judgment

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Body protection : Personnel should wear antistatic clothing made of natural fibres or of high-temperature-resistant synthetic fibres.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators.

Environmental exposure controls : Do not allow to enter drains or watercourses.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties**Appearance**

Physical state	: Liquid.	
Colour	: Clear.	
Odour	: Not available.	
Odour threshold	: Not available.	
Melting point/freezing point	: Technically not possible to measure	
Initial boiling point and boiling range	: 67 to 250°C (152.6 to 482°F)	
Flammability (solid, gas)	: Not available.	
Upper/lower flammability or explosive limits	: Lower: 1% Upper: 11.3% Not available.	
Flash point	: Closed cup: 24°C (75.2°F)	
Auto-ignition temperature	: 355°C (671°F)	
Decomposition temperature	: Not applicable.	
pH	: Not applicable.	
Viscosity	: Dynamic (room temperature): 18 mPa·s Kinematic (room temperature): 21 mm ² /s Kinematic (40°C): 3.1 mm ² /s	
Solubility in water	: Not available.	
Miscible with water	: No.	
Partition coefficient: n-octanol/water	: Not applicable.	
Vapour pressure	: 0.8 kPa (6 mm Hg)	
Relative density	: Not available.	
Density	: 0.877 g/cm ³	
Vapour density	: Not available.	
Explosive properties	: Not available.	
Oxidising properties	: Not available.	
Weight volatiles	: 77.3 % (w/w)	
VOC content	: 77.3 % (w/w)	(2010/75/EU)

9.2 Other information**9.2.1 Information with regard to physical hazard classes**

Further information Not available.

9.2.2 Other safety characteristics

Miscible with water : No.

Further information Not available.

room temperature (=20°C)

SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : When exposed to high temperatures may produce hazardous decomposition products.
- 10.5 Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.
- 10.6 Hazardous decomposition products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.
Not applicable

SECTION 11: Toxicological information**11.1 Information on toxicological effects**

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Ingestion may cause nausea, diarrhea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine, ethylenediamine, Ethan-1,2-diamine, N-(2-aminoethyl)-N'-3-(trimethoxysilyl)propyl, 1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HOMOPOLYMER, 1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HYDROCHLORIDE (1:1), 2,2'-iminodiethylamine. May produce an allergic reaction.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Reaction mass of ethylbenzene and xylene	LC50 Inhalation Vapour	Rat	6350 to 6700 ppm	4 hours
	LD50 Dermal	Rabbit	121236 mg/kg	-
	LD50 Oral	Rat	3523 to 4000 mg/kg	-
butan-1-ol	LC50 Inhalation Vapour	Rat	24000 mg/m ³	4 hours
	LD50 Dermal	Rabbit	3400 mg/kg	-
	LD50 Oral	Rat	790 mg/kg	-
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine	LC50 Inhalation Dusts and mists	Rat	1.49 mg/l	4 hours
	LD50 Oral	Rat - Male, Female	2295 mg/kg	-
ethylenediamine	LC50 Inhalation Vapour	Rat - Male	14.7 mg/l	4 hours
	LD50 Oral	Rat	1200 mg/kg	-
Ethan-1,2-diamine, N-	LC50 Inhalation Dusts and	Rat	2.44 mg/l	4 hours

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(2-aminoethyl)-N'-3-(trimethoxysilyl)propyl 1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HOMOPOLYMER methanol	mists					
	LC50 Inhalation Dusts and mists	Rat	2.44 mg/l	4 hours		
	LC50 Inhalation Gas.	Rat	145000 ppm	1 hours		
	LC50 Inhalation Gas.	Rat	64000 ppm	4 hours		
	LD50 Dermal	Rabbit	15800 mg/kg	-		
	LD50 Oral	Rat	5600 mg/kg	-		
	2,2'-iminodiethylamine	LC50 Inhalation Dusts and mists	Rat	0.19 mg/l	4 hours	
	LD50 Dermal	Rabbit	1090 mg/kg	-		
	LD50 Oral	Rat	1080 mg/kg	-		

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
mixture	2071.8	2559.6	N/A	27.0	20.7
Reaction mass of ethylbenzene and xylene	N/A	1100	N/A	11	N/A
butan-1-ol	790	3400	N/A	24	N/A
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl] ethylenediamine	2295	N/A	N/A	N/A	1.49
ethylenediamine	1200	300	N/A	14.7	N/A
Ethan-1,2-diamine, N-(2-aminoethyl)-N'-3-(trimethoxysilyl)propyl	N/A	N/A	N/A	N/A	2.44
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HOMOPOLYMER	N/A	N/A	N/A	N/A	2.44
methanol	100	300	64000	3	N/A
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HYDROCHLORIDE (1:1)	N/A	N/A	N/A	N/A	2.44
2,2'-iminodiethylamine	1080	1090	N/A	N/A	0.19

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
butan-1-ol	Eyes - Cornea opacity	Rabbit	2.11	-	7 days
	Eyes - Severe irritant	Rabbit	-	0.005 MI	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Eyes - Visible necrosis	Rabbit	-	24 hours	24 hours
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl] ethylenediamine	Eyes - Severe irritant	Rabbit	-	-	-
	Eyes - Severe irritant	Rabbit	-	-	-
Ethan-1,2-diamine, N-(2-aminoethyl)-N'-3-(trimethoxysilyl)propyl 1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HOMOPOLYMER	Eyes - Severe irritant	Rabbit	-	-	-
	Eyes - Severe irritant	Rabbit	-	-	-
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HYDROCHLORIDE (1:1)	Eyes - Severe irritant	Rabbit	-	-	-

Sensitisation

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SECTION 11: Toxicological information

Product/ingredient name	Route of exposure	Species	Result
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl] ethylenediamine	skin	Guinea pig	Sensitising

Mutagenicity**Carcinogenicity****Reproductive toxicity****Teratogenicity****Specific target organ toxicity (single exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
Reaction mass of ethylbenzene and xylene	Category 3	-	Respiratory tract irritation
butan-1-ol	Category 3	-	Respiratory tract irritation
methanol	Category 3	-	Narcotic effects
2,2'-iminodiethylamine	Category 1 Category 3	- -	- Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Reaction mass of ethylbenzene and xylene	Category 2	-	-

Aspiration hazard

Product/ingredient name	Result
Reaction mass of ethylbenzene and xylene	ASPIRATION HAZARD - Category 1

Information on likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

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SECTION 11: Toxicological information

- Skin contact** : Adverse symptoms may include the following:
 pain or irritation
 redness
 blistering may occur
- Ingestion** : Adverse symptoms may include the following:
 stomach pains
 nausea or vomiting

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

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Reaction mass of ethylbenzene and xylene	Acute EC50 2.2 mg/l	Algae - Algae - <i>Selenastrum capricornutum</i>	73 hours
	Acute LC50 1 mg/l	Daphnia - Daphnia - <i>Daphnia magna</i>	24 hours
	Acute LC50 2.6 mg/l	Fish - Trout - <i>Oncorhynchus mykiss</i>	96 hours
	Chronic NOEC 16 mg/l	Micro-organism - Activated sludge - <i>Activated sludge</i>	28 days
butan-1-ol	Acute EC50 1983 mg/l Fresh water	Daphnia - Water flea - <i>Daphnia magna</i>	48 hours
	Acute LC50 1730000 µg/l Fresh water	Fish - Fathead minnow - <i>Pimephales promelas</i>	96 hours
ethylenediamine	Acute EC50 100000 µg/l Fresh water	Algae - Green algae - <i>Chlorella pyrenoidosa</i>	96 hours
	Acute LC50 26500 µg/l Fresh water	Daphnia - Water flea - <i>Daphnia magna</i>	48 hours
	Acute LC50 115.7 mg/l Fresh water	Fish - Fathead minnow - <i>Pimephales promelas</i>	96 hours
methanol	Chronic NOEC 0.16 mg/l Fresh water	Daphnia - Water flea - <i>Daphnia magna</i>	21 days
	Acute EC50 16.912 mg/l Marine water	Algae - Green algae - <i>Ulva pertusa</i>	96 hours
	Acute LC50 2500000 µg/l Marine water	Crustaceans - Common shrimp, sand shrimp - <i>Crangon crangon</i>	48 hours

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SECTION 12: Ecological information

2,2'-iminodiethylamine	Acute LC50 3289 mg/l Fresh water	- Adult Daphnia - Water flea - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 290 mg/l Fresh water	Fish - Zebra danio - <i>Danio rerio</i>	96 hours
	Chronic NOEC 9.96 mg/l Marine water	- Egg Algae - Green algae - <i>Ulva pertusa</i>	96 hours
	Acute LC50 1014000 µg/l Fresh water	Fish - Guppy - <i>Poecilia reticulata</i>	96 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Reaction mass of ethylbenzene and xylene	3.16	-	Low
butan-1-ol	1	-	Low
ethylenediamine	-7.02	-	Low
methanol	-0.77	<10	Low
2,2'-iminodiethylamine	-5.58	2.8 to 6.3	Low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.





Type of packaging	Waste catalogue
	15 01 10* packaging containing residues of or contaminated by hazardous substances

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SECTION 13: Disposal considerations

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	UN1263	UN1263	UN1263	UN1263
14.2 UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	No.	Yes.	No.	No.

Additional information

ADR/RID : **Tunnel code** (D/E)

ADN : The product is only regulated as an environmentally hazardous substance when transported in tank vessels.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

UK (GB)/REACH**Annex XIV - List of substances subject to authorisation****Annex XIV**

None of the components are listed.

Substances of very high concern

Intrinsic property	Ingredient name	Status	Reference number	Date of revision
Substance of equivalent concern for human health	ethylenediamine	Candidate	-	6/27/2018

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SECTION 15: Regulatory information

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not applicable.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category

P5c

National regulations

Product/ingredient name	List name	Name on list	Classification	Notes

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

🔍 Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
 GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = GB CLP-specific Hazard statement
 N/A = Not available
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 SGG = Segregation Group
 vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

Classification	Justification
Flam. Liq. 3, H226	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
STOT SE 3, H335	Calculation method
STOT SE 3, H336	Calculation method
STOT RE 2, H373	Calculation method
Asp. Tox. 1, H304	Calculation method
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements

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SECTION 16: Other information

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H370	Causes damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications

Acute Tox. 2	ACUTE TOXICITY - Category 2
Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Resp. Sens. 1B	RESPIRATORY SENSITISATION - Category 1B
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
Skin Sens. 1B	SKIN SENSITISATION - Category 1B
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 1	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 1
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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SECTION 16: Other information

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