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	:	4 May 2025
Version	:	1.23
Date of previous issue	:	5 April 2025

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

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
Aquatic Chronic 3, H412

SECTION 2: Hazards identification

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.

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.

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

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, CO_2, 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.

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 tonnes	50000 tonnes

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 15 minutes: 154 mg/m³. STEL 15 minutes: 50 ppm.
methanol	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** Absorbed through skin. STEL 15 minutes: 333 mg/m³. STEL 15 minutes: 250 ppm. TWA 8 hours: 266 mg/m³. TWA 8 hours: 200 ppm.
2,2'-iminodiethylamine	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** Absorbed

SECTION 8: Exposure controls/personal protection

	through skin. TWA 8 hours: 4.3 mg/m³. TWA 8 hours: 1 ppm.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: British Standard BS EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) British Standard BS EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) British Standard BS EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Result
Reaction mass of ethylbenzene and xylene	**DNEL - Workers - Long term - Dermal** 212 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Inhalation** 221 mg/m³ Effects: Systemic
butan-1-ol	**DNEL - General population - Long term - Oral** 1.5625 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Dermal** 3.125 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 55.357 mg/m³ Effects: Systemic **DNEL - General population - Long term - Inhalation** 155 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 310 mg/m³ Effects: Local
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl] ethylenediamine	**DNEL - General population - Long term - Oral** 0.83 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 2.9 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Inhalation** 16.45 mg/m³ Effects: Systemic **DNEL - General population - Short term - Inhalation** 50 mg/m³ Effects: Local **DNEL - General population - Long term - Inhalation** 50 mg/m³

SECTION 8: Exposure controls/personal protection

	Effects: Local **DNEL - General population - Short term - Inhalation** 50 mg/m³ Effects: Systemic **DNEL - Workers - Short term - Inhalation** 260 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 260 mg/m³ Effects: Local **DNEL - Workers - Short term - Inhalation** 260 mg/m³ Effects: Systemic
ethylenediamine	**DNEL - General population - Long term - Oral** 0.11 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 6.25 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Inhalation** 25 mg/m³ Effects: Systemic
methanol	**DNEL - Workers - Long term - Inhalation** 196 ppm Effects: Systemic **DNEL - General population - Short term - Oral** 4 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Oral** 4 mg/kg bw/day Effects: Systemic **DNEL - General population - Short term - Dermal** 4 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Dermal** 4 mg/kg bw/day Effects: Systemic **DNEL - Workers - Short term - Dermal** 20 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Dermal** 20 mg/kg bw/day Effects: Systemic **DNEL - General population - Short term - Inhalation** 26 mg/m³ Effects: Local **DNEL - General population - Long term - Inhalation** 26 mg/m³

SECTION 8: Exposure controls/personal protection

	Effects: Local **DNEL - General population - Short term - Inhalation** 26 mg/m³ Effects: Systemic **DNEL - General population - Long term - Inhalation** 26 mg/m³ Effects: Systemic **DNEL - Workers - Short term - Inhalation** 130 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 130 mg/m³ Effects: Local **DNEL - Workers - Short term - Inhalation** 130 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Inhalation** 130 mg/m³ Effects: Systemic
2,2'-iminodiethylamine	**DNEL - Workers - Long term - Inhalation** 3.6 ppm Effects: Systemic **DNEL - Workers - Long term - Inhalation** 0.87 mg/m³ Effects: Local **DNEL - Workers - Long term - Dermal** 1.1 mg/cm² Effects: Local **DNEL - Workers - Short term - Inhalation** 2.6 mg/m³ Effects: Local **DNEL - General population - Long term - Inhalation** 4.6 mg/m³ Effects: Systemic **DNEL - General population - Short term - Dermal** 4.88 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Dermal** 4.88 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Dermal** 11.4 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Inhalation** 15.4 mg/m³ Effects: Systemic **DNEL - General population - Short term - Inhalation** 27.5 mg/m³

SECTION 8: Exposure controls/personal protection

Effects: Systemic

DNEL - Workers - Short term - Inhalation
92.1 mg/m³
Effects: Systemic

PNECs

Product/ingredient name	Result
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 **Marine water** 2.08 mg/l

SECTION 8: Exposure controls/personal protection

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.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result
Reaction mass of ethylbenzene and xylene	**Rat - Oral - LD50** 3523 to 4000 mg/kg **Rabbit - Dermal - LD50** 121236 mg/kg **Rat - Inhalation - LC50 Vapour** 6350 to 6700 ppm [4 hours]
butan-1-ol	**Rat - Oral - LD50** 790 mg/kg Toxic effects: Liver - Fatty liver degeneration Kidney, Ureter, and Bladder - Other changes Blood - Other changes **Rabbit - Dermal - LD50** 3400 mg/kg **Rat - Inhalation - LC50 Vapour** 24000 mg/m³ [4 hours]
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl] ethylenediamine	**Rat - Male, Female - Oral - LD50** 2295 mg/kg EPA [OPPTS 870.1100 Acute Oral Toxicity] **Rat - Inhalation - LC50 Dusts and mists** 1.49 mg/l [4 hours] OECD 403
ethylenediamine	**Rat - Oral - LD50** 1200 mg/kg Toxic effects: Behavioral - Ataxia **Rat - Male - Inhalation - LC50 Vapour** 14.7 mg/l [4 hours] ISO TC 58

SECTION 11: Toxicological information

Ethan-1,2-diamine, N-(2-aminoethyl)-N'-3-(trimethoxysilyl)propyl	**Rat - Inhalation - LC50 Dusts and mists** 2.44 mg/l [4 hours] OECD [Acute Inhalation Toxicity]
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL) -N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HOMOPOLYMER	**Rat - Inhalation - LC50 Dusts and mists** 2.44 mg/l [4 hours] OECD [Acute Inhalation Toxicity]
methanol	**Rabbit - Dermal - LD50** 15800 mg/kg **Rat - Oral - LD50** 5600 mg/kg **Rat - Inhalation - LC50 Gas.** 64000 ppm [4 hours] **Rat - Inhalation - LC50 Gas.** 145000 ppm [1 hours]
2,2'-iminodiethylamine	**Rat - Oral - LD50** 1080 mg/kg Toxic effects: Behavioral - Convulsions or effect on seizure threshold **Rabbit - Dermal - LD50** 1090 mg/kg **Rat - Inhalation - LC50 Dusts and mists** 0.19 mg/l [4 hours]

Conclusion/Summary [Product] : Not available.

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

Skin corrosion/irritation

Product/ingredient name	Result
butan-1-ol	**Rabbit - Skin - Moderate irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 20 mg

SECTION 11: Toxicological information

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result
butan-1-ol	**Rabbit - Eyes - Severe irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 2 mg **Rabbit - Eyes - Severe irritant** Amount/concentration applied: 0.005 Ml **Rabbit - Eyes - Severe irritant** Amount/concentration applied: 1.62 mg **Rabbit - Eyes - Cornea opacity** OECD [Acute Eye Irritation/Corrosion] Observation period: 7 days Irritation score: 2.11 Not reversible
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl] ethylenediamine	**Rabbit - Eyes - Visible necrosis** Duration of treatment/exposure: 24 hours Observation period: 24 hours Not reversible
Ethan-1,2-diamine, N-(2-aminoethyl)-N'-3-(trimethoxysilyl)propyl	**Rabbit - Eyes - Severe irritant** Not reversible
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL) -N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HOMOPOLYMER	**Rabbit - Eyes - Severe irritant** Not reversible
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL) -N2-[3-(TRIMETHOXYSILYL)PROPYL]-, HYDROCHLORIDE (1:1)	**Rabbit - Eyes - Severe irritant** Not reversible

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name	Result
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl] ethylenediamine	**Guinea pig - skin** Result: Sensitising

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Not available.

SECTION 11: Toxicological information

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
Reaction mass of ethylbenzene and xylene	STOT SE 3, H335 (Respiratory tract irritation)
butan-1-ol	STOT SE 3, H335 (Respiratory tract irritation) STOT SE 3, H336 (Narcotic effects)
methanol	STOT SE 1, H370
2,2'-iminodiethylamine	STOT SE 3, H335 (Respiratory tract irritation)

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
Reaction mass of ethylbenzene and xylene	STOT RE 2, H373

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

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 [Product] : 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
Reaction mass of ethylbenzene and xylene	**Acute - LC50** OECD 203 Fish - Trout - *Oncorhynchus mykiss* 2.6 mg/l [96 hours] **Acute - LC50** OECD 202 Daphnia - Daphnia - *Daphnia magna* 1 mg/l [24 hours] **Acute - EC50** OECD 201 Algae - Algae - *Selenastrum capricornutum* 2.2 mg/l [73 hours] **Chronic - NOEC** OECD 301F Micro-organism - Activated sludge - *Activated sludge* 16 mg/l [28 days]
butan-1-ol	**Acute - LC50 - Fresh water** Fish - Fathead minnow - *Pimephales promelas* Age: 33 days; Size: 20.6 mm; Weight: 0.119 g 1730 mg/l [96 hours]

SECTION 12: Ecological information

	Effect: Mortality **Acute - EC50 - Fresh water** Daphnia - Water flea - *Daphnia magna* Age: 6 to 24 hours 1983 mg/l [48 hours] Effect: Intoxication
ethylenediamine	**Acute - LC50 - Fresh water** Daphnia - Water flea - *Daphnia magna* 26.5 mg/l [48 hours] Effect: Mortality **Acute - EC50 - Fresh water** Algae - Green algae - *Chlorella pyrenoidosa* 100 mg/l [96 hours] Effect: Growth **Chronic - NOEC - Fresh water** Daphnia - Water flea - *Daphnia magna* 0.16 mg/l [21 days] Effect: Behavior **Acute - LC50 - Fresh water** Fish - Fathead minnow - *Pimephales promelas* Weight: 0.3 to 1 g 115.7 mg/l [96 hours] Effect: Mortality
methanol	**Acute - LC50 - Marine water** Crustaceans - Common shrimp, sand shrimp - *Crangon crangon* - Adult 2500 mg/l [48 hours] Effect: Mortality **Acute - EC50 - Marine water** Algae - Green algae - *Ulva pertusa* 16.912 mg/l [96 hours] Effect: Reproduction **Chronic - NOEC - Marine water** Algae - Green algae - *Ulva pertusa* 9.96 mg/l [96 hours] Effect: Reproduction **Acute - LC50 - Fresh water** Fish - Zebra danio - *Danio rerio* - Egg Age: 12 290 mg/l [96 hours] Effect: Mortality
2,2'-iminodiethylamine	**Acute - LC50 - Fresh water** Fish - Guppy - *Poecilia reticulata* 1014 mg/l [96 hours] Effect: Mortality **Acute - EC50 - Fresh water** Algae - Green algae - *Raphidocelis subcapitata* 345.6 mg/l [96 hours] Effect: Population

Conclusion/Summary [Product] : Not available.

SECTION 12: Ecological information

12.2 Persistence and degradability

Not available.

Conclusion/Summary [Product] : 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 : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Reaction mass of ethylbenzene and xylene	No	No	No	Yes	No	No	No
butan-1-ol	No	No	No	No	No	No	No
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl] ethylenediamine	No	No	No	No	No	No	No
ethylenediamine	No	No	No	No	No	No	No
Ethan-1,2-diamine, N-(2-aminoethyl)-N'-3-(trimethoxysilyl)propyl	No	No	No	No	No	No	No
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL) PROPYL]-, HOMOPOLYMER	No	No	No	No	No	No	No
methanol	No	No	No	No	No	No	No
1,2-ETHANEDIAMINE, N1-(2-AMINOETHYL)-N2-[3-(TRIMETHOXYSILYL) PROPYL]-, HYDROCHLORIDE (1:1)	No	No	No	No	No	No	No
2,2'-iminodiethylamine	No	No	No	No	No	No	No

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

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.

SECTION 14: Transport information

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

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 : ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
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

SECTION 16: Other information

DNEL = Derived No Effect Level
EUH statement = GB CLP-specific Hazard statement
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
IMO = International Maritime Organization
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
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

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

SECTION 16: Other information

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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Notice to reader

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