

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form : Mixture
Name : Hardener for epoxy primer
Trade name : ARMORHARDENER EP 200-20

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Use of the substance/mixture : The product is intended for professional use

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

NOVOL Sp. z o.o.
Żabikowska 7/9
62-052 KOMORNIKI
Poland
T 0048618109800 - F 0048618109809
www.novol.com
E-mail address of competent person responsible for the SDS : dokumentacja@novol.com

1.4. Emergency telephone number

Emergency number : 112

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Flammable liquids, Category 3	H226
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 1	H318
Skin sensitisation, Category 1	H317
Hazardous to the aquatic environment – Chronic Hazard, Category 2	H411

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



GHS02

GHS05

GHS07

GHS09

Signal word (CLP) :

Danger

Contains :

butan-1-ol; n-butanol, Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine

Hazard statements (CLP) :

H226 - Flammable liquid and vapour.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H411 - Toxic to aquatic life with long lasting effects.

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Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 - Avoid breathing vapours, spray.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call doctor if you feel unwell.

2.3. Other hazards

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	CAS-No.: 68082-29-1 EC-No.: 500-191-5 REACH-no: 01-2119972320-44	< 45	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 2, H411
xylene substance with national workplace exposure limit(s) (GB); substance with a Community workplace exposure limit (Note C)	CAS-No.: 1330-20-7 EC-No.: 215-535-7 EC Index-No.: 601-022-00-9 REACH-no: 01-2119488216-32	30 – 40	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315
butan-1-ol; n-butanol substance with national workplace exposure limit(s) (GB)	CAS-No.: 71-36-3 EC-No.: 200-751-6 EC Index-No.: 603-004-00-6 REACH-no: 01-2119484630-38	7 – 15	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H336 STOT SE 3, H335
Formaldehyde, polymer with N,N-dimethyl-1,3-propanediamine and phenol	CAS-No.: 445498-00-0 EC-No.: 610-196-5	6 – 11	Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,4,6-tris(dimethylaminomethyl)phenol	CAS-No.: 90-72-2 EC-No.: 202-013-9 EC Index-No.: 603-069-00-0 REACH-no: 01-2119560597-27	1.5 – 3.5	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319
N-(3-(trimethoxysilyl)propyl)ethylenediamine	CAS-No.: 1760-24-3 EC-No.: 217-164-6 REACH-no: 01-2119970215-39	0.5 – 1.3	Eye Dam. 1, H318 Skin Sens. 1, H317

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Amines, polyethylenepoly-, triethylenetetramine fraction	CAS-No.: 90640-67-8 EC-No.: 292-588-2 REACH-no: 01-2119487919-13	0.1 – 0.5	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412
methanol substance with national workplace exposure limit(s) (GB); substance with a Community workplace exposure limit	CAS-No.: 67-56-1 EC-No.: 200-659-6 EC Index-No.: 603-001-00-X REACH-no: 01-2119433307-44	< 0.013	Flam. Liq. 2, H225 Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Oral), H301 STOT SE 1, H370

Specific concentration limits:		
Name	Product identifier	Specific concentration limits
methanol	CAS-No.: 67-56-1 EC-No.: 200-659-6 EC Index-No.: 603-001-00-X REACH-no: 01-2119433307-44	(3 ≤C < 10) STOT SE 2, H371 (10 ≤C ≤ 100) STOT SE 1, H370

Note C : Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: General information. Refer to section 11.
First-aid measures after inhalation	: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact	: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention. If skin irritation continues, consult a doctor.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
First-aid measures after ingestion	: If swallowed: rinse mouth. Do NOT induce vomiting. Call a physician immediately.

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

Symptoms/effects after inhalation	: Vapours may cause drowsiness and dizziness.
Symptoms/effects after skin contact	: Prolonged or repeated contact may cause skin to become dry.
Symptoms/effects after eye contact	: May cause eye irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Dry chemical, CO2, alcohol-resistant foam or waterspray.
Unsuitable extinguishing media	: Do not use a heavy water stream.

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5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Carbon monoxide. Other toxic gases.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Remove ignition sources. Ensure that there is a suitable ventilation system. Avoid any direct or indirect contact with ingredients released. Avoid contact with skin and eyes. Use personal protective equipment as required. See Section 8.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. See Section 8.

6.2. Environmental precautions

Avoid release to the environment. Do not allow to enter into surface water or drains. Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

6.3. Methods and material for containment and cleaning up

For containment : Cover spill with non combustible material, e.g.: sand, earth, vermiculite. Mechanically recover the product.

6.4. Reference to other sections

Disposal considerations. See Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Wear personal protective equipment.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed.
Storage temperature : 5 – 35 °C

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

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xylene (1330-20-7)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Xylene, mixed isomers, pure
IOEL TWA [ppm]	50 ppm
IOEL STEL	442 mg/m ³
IOEL STEL [ppm]	100 ppm
Remark	Skin
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
United Kingdom - Occupational Exposure Limits	
Local name	Xylene
WEL TWA (OEL TWA) [1]	220 mg/m ³ o-,m-,p- or mixed isomers
WEL TWA (OEL TWA) [2]	50 ppm o-,m-,p- or mixed isomers
WEL STEL (OEL STEL)	441 mg/m ³ o-,m-,p- or mixed isomers
WEL STEL (OEL STEL) [ppm]	100 ppm o-,m-,p- or mixed isomers
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
United Kingdom - Biological limit values	
Local name	Xylene, o-, m-, p- or mixed isomers
BMGV	650 mmol/mol Creatinine Parameter: methyl hippuric acid - Medium: urine - Sampling time: Post shift
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
butan-1-ol; n-butanol (71-36-3)	
United Kingdom - Occupational Exposure Limits	
Local name	Butan-1-ol
WEL STEL (OEL STEL)	154 mg/m ³
WEL STEL (OEL STEL) [ppm]	50 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
methanol (67-56-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Methanol
IOEL TWA	260 mg/m ³
IOEL TWA [ppm]	200 ppm
Remark	Skin
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
United Kingdom - Occupational Exposure Limits	
Local name	Methanol
WEL TWA (OEL TWA) [1]	266 mg/m ³
WEL TWA (OEL TWA) [2]	200 ppm

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methanol (67-56-1)	
WEL STEL (OEL STEL)	333 mg/m ³
WEL STEL (OEL STEL) [ppm]	250 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	EN 482. Workplace exposure - General requirements for the performance of procedures for the measurement of chemical agents.

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

xylene (1330-20-7)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	289 mg/m ³
Acute - local effects, inhalation	289 mg/m ³
Long-term - systemic effects, dermal	180 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	77 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, inhalation	174 mg/m ³
Acute - local effects, inhalation	174 mg/m ³
Long-term - systemic effects, oral	1.6 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	14.8 mg/m ³
Long-term - systemic effects, dermal	108 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.327 mg/l
PNEC aqua (marine water)	0.327 mg/l
PNEC aqua (intermittent, freshwater)	0.327 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	12.46 mg/kg dwt
PNEC sediment (marine water)	12.46 mg/kg dwt
PNEC (Soil)	
PNEC soil	2.31 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	6.58 mg/l
butan-1-ol; n-butanol (71-36-3)	
DNEL/DMEL (Workers)	
Long-term - local effects, inhalation	310 mg/m ³

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butan-1-ol; n-butanol (71-36-3)	
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	3.125 mg/kg bodyweight/day
Long-term - local effects, inhalation	55 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	0.082 mg/l
PNEC aqua (marine water)	0.0082 mg/l
PNEC aqua (intermittent, freshwater)	2.25 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.178 mg/kg dwt
PNEC sediment (marine water)	0.0178 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.015 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	2476 mg/l
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine (68082-29-1)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	1.1 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	3.9 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	0.56 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.97 mg/m ³
Long-term - systemic effects, dermal	0.56 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.00434 mg/l
PNEC aqua (marine water)	0.000434 mg/l
PNEC aqua (intermittent, freshwater)	0.0434 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	434.02 mg/kg dwt
PNEC sediment (marine water)	43.4 mg/kg dwt
PNEC (Soil)	
PNEC soil	86.78 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	3.84 mg/l
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	0.6 mg/kg bodyweight/day
Acute - systemic effects, inhalation	2.1 mg/m ³
Long-term - systemic effects, dermal	0.15 mg/kg bodyweight/day

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2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Long-term - systemic effects, inhalation	0.53 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, dermal	0.075 mg/kg bodyweight/day
Acute - systemic effects, inhalation	0.13 mg/m ³
Long-term - systemic effects, oral	0.075 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.13 mg/m ³
Long-term - systemic effects, dermal	0.075 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.046 mg/l
PNEC aqua (marine water)	0.0046 mg/l
PNEC aqua (intermittent, freshwater)	0.46 mg/l
PNEC aqua (intermittent, marine water)	0.046 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.2621 mg/kg dwt
PNEC sediment (marine water)	0.026211 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.0254 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	0.2 mg/l
N-(3-(trimethoxysilyl)propyl)ethylenediamine (1760-24-3)	
PNEC (Water)	
PNEC aqua (freshwater)	0.062 mg/l
PNEC aqua (marine water)	0.0062 mg/l
PNEC aqua (intermittent, freshwater)	0.62 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.22 mg/kg dwt
PNEC sediment (marine water)	0.022 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.0085 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	25 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

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8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Viton® II	6 (> 480 minutes)	0,7 mm		EN 374-3
Disposable gloves	Nitrile rubber (NBR)	2 (> 30 minutes)	0,4 mm		EN 374-3

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Respiratory protection			
Device	Filter type	Condition	Standard
Gas mask with filter type	Filter A1/B1		EN 14387

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: light yellow.
Odour	: characteristic. Amine-like.
Odour threshold	: 0.9 – 9 mg/m ³ Xylene
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: 119 – 142 °C
Flammability	: Not applicable
Explosive properties	: No data available.
Explosive limits	: Not available
Lower explosion limit	: 1.1 vol % Xylene
Upper explosion limit	: 8 vol % Xylene
Flash point	: 25 °C
Auto-ignition temperature	: 355 °C

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Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Solubility	: Slightly soluble.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: 9 hPa Xylene
Vapour pressure at 50°C	: Not available
Density	: 0.9 g/cm ³
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Keep away from sources of ignition. Prevent build-up of electrostatic charges (e.g. by grounding). Protect from sunlight. Avoid high temperatures.

10.5. Incompatible materials

No contact with: strong acids, strong bases and strong oxidants.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition may produce : Carbon monoxide. Other toxic gases.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	: Not classified. (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified.

xylene (1330-20-7)	
LD50 oral rat	3523 mg/kg rat
LD50 dermal rabbit	12126 mg/kg bodyweight Animal: rabbit, Animal sex: male
LC50 Inhalation - Rat	27124 mg/l
butan-1-ol; n-butanol (71-36-3)	
LD50 oral rat	2292 mg/kg Source: ECHA

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butan-1-ol; n-butanol (71-36-3)	
LD50 dermal rabbit	3430 mg/kg Source: ECHA
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine (68082-29-1)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), Guideline: EU Method B.1 tris (Acute Oral Toxicity - Acute Toxic Class Method)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))
Amines, polyethylenepoly-, triethylenetetramine fraction (90640-67-8)	
LD50 oral rat	1591.4 mg/kg Source: ECHA Chem
LD50 dermal rat	1465.3 mg/kg Source: ECHA Chem
ATE CLP (oral)	1591.4 mg/kg bodyweight
ATE CLP (dermal)	1465.3 mg/kg bodyweight
Formaldehyde, polymer with N,N-dimethyl-1,3- propanediamine and phenol (445498-00-0)	
ATE CLP (oral)	500 mg/kg bodyweight
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
LD50 oral rat	2169 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 1916 - 2455
LD50 dermal rat	1280 mg/kg
ATE CLP (oral)	500 mg/kg bodyweight
ATE CLP (dermal)	1280 mg/kg bodyweight
N-(3-(trimethoxysilyl)propyl)ethylenediamine (1760-24-3)	
LD50 oral rat	2400 mg/kg Source: OECD 401, EEC 67/548 1967
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit, Guideline: EPA OPPTS 870.1200 (Acute Dermal Toxicity), Remarks on results: other:
LC50 Inhalation - Rat	1.49 – 2.44 mg/l air Animal: rat, Guideline: EPA OPPTS 870.1300 (Acute inhalation toxicity), Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)
methanol (67-56-1)	
ATE CLP (oral)	100 mg/kg bodyweight
ATE CLP (dermal)	300 mg/kg bodyweight
ATE CLP (gases)	700 ppmv/4h
ATE CLP (vapours)	3 mg/l/4h
ATE CLP (dust,mist)	0.5 mg/l/4h
Skin corrosion/irritation : Causes skin irritation.	
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine (68082-29-1)	
pH	10.98 Temp.: 25 °C Concentration: 1 vol%
Amines, polyethylenepoly-, triethylenetetramine fraction (90640-67-8)	
pH	13.2 Source: ECHA Chem

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2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
pH	11
Serious eye damage/irritation	: Causes serious eye damage.
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine (68082-29-1)	
pH	10.98 Temp.: 25 °C Concentration: 1 vol%
Amines, polyethylenepoly-, triethylenetetramine fraction (90640-67-8)	
pH	13.2 Source: ECHA Chem
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
pH	11
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
butan-1-ol; n-butanol (71-36-3)	
STOT-single exposure	May cause drowsiness or dizziness. May cause respiratory irritation.
methanol (67-56-1)	
STOT-single exposure	Causes damage to organs.
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
xylene (1330-20-7)	
LOAEL (oral, rat, 90 days)	150 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents), Guideline: EPA OPP 82-1 (90-Day Oral Toxicity)
butan-1-ol; n-butanol (71-36-3)	
LOAEL (oral, rat, 90 days)	500 mg/kg bodyweight Animal: rat
NOAEL (oral, rat, 90 days)	125 mg/kg bodyweight Animal: rat
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine (68082-29-1)	
NOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
NOAEL (oral, rat, 90 days)	15 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents), Guideline: EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents), Remarks on results: other:
N-(3-(trimethoxysilyl)propyl)ethylenediamine (1760-24-3)	
NOAEL (oral, rat, 90 days)	≥ 500 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
NOAEL (dermal, rat/rabbit, 90 days)	≥ 1545 mg/kg bodyweight Animal: rat
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)

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butan-1-ol; n-butanol (71-36-3)	
Viscosity, kinematic	3.641 mm ² /s
N-(3-(trimethoxysilyl)propyl)ethylenediamine (1760-24-3)	
Viscosity, kinematic	3.1 mm ² /s Temp.: '20°C' Parameter: 'kinematic viscosity (in mm ² /s)'

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)

Hazardous to the aquatic environment, long-term (chronic) : Toxic to aquatic life with long lasting effects.

Not rapidly degradable

xylene (1330-20-7)	
LC50 - Fish [1]	2.6 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	> 3.4 mg/l Test organisms (species): Ceriodaphnia dubia
NOEC chronic fish	> 1.3 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '56 d'

butan-1-ol; n-butanol (71-36-3)	
LC50 - Fish [1]	1376 mg/l Source: ECHA
EC50 - Crustacea [1]	1983 mg/l Source: ECHA
EC50 96h - Algae [1]	225 mg/l Source: ECHA
NOEC (chronic)	4.1 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine (68082-29-1)	
LC50 - Fish [1]	7.07 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	7.07 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	4.34 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

Amines, polyethylenepoly-, triethylenetetramine fraction (90640-67-8)	
LC50 - Fish [1]	330 mg/l Source: ECHA Chem
EC50 - Crustacea [1]	31.1 mg/l Source: ECHA Chem
EC50 72h - Algae [1]	20 mg/l Source: ECHA Chem

2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
LC50 - Fish [1]	> 100 mg/l Test organisms (species): Cyprinus carpio
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	46.7 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	25.5 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

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2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
EC50 96h - Algae [1]	34.812 mg/l Source: ECOSAR
N-(3-(trimethoxysilyl)propyl)ethylenediamine (1760-24-3)	
LC50 - Fish [1]	597 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	81 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	126 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	352 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
ErC50 algae	8.8 mg/l Source: OECD Guide-line 201,SIDS

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

butan-1-ol; n-butanol (71-36-3)	
Partition coefficient n-octanol/water (Log Pow)	0.9 Source: HSDB
Amines, polyethylenepoly-, triethylenetetramine fraction (90640-67-8)	
Partition coefficient n-octanol/water (Log Pow)	2.65 Source: ECHA Chem
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Partition coefficient n-octanol/water (Log Pow)	0.77
N-(3-(trimethoxysilyl)propyl)ethylenediamine (1760-24-3)	
Partition coefficient n-octanol/water (Log Pow)	-1.67

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Do not discharge into drains.
Product/Packaging disposal recommendations	: This material and its container must be disposed of as hazardous waste. Do not dispose of with domestic waste. After cleaning, recycle or dispose of at an authorised site.
Additional information	: Flammable vapours may accumulate in the container.
European List of Waste (LoW) code	: 08 01 11* - waste paint and varnish containing organic solvents or other dangerous substances 15 01 10* - packaging containing residues of or contaminated by dangerous substances




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SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

ADR	IMDG	IATA
14.1. UN number or ID number		
UN 1866	UN 1866	UN 1866
14.2. UN proper shipping name		
RESIN SOLUTION	RESIN SOLUTION	Resin solution
Transport document description		
UN 1866 RESIN SOLUTION, 3, III, (D/E), ENVIRONMENTALLY HAZARDOUS	UN 1866 RESIN SOLUTION, 3, III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS (25°C c.c.)	UN 1866 Resin solution, 3, III, ENVIRONMENTALLY HAZARDOUS
14.3. Transport hazard class(es)		
3	3	3
		
14.4. Packing group		
III	III	III
14.5. Environmental hazards		
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes
No supplementary information available		

14.6. Special precautions for user

Overland transport

Classification code (ADR) : F1
Limited quantities (ADR) : 5I
Special packing provisions (ADR) : PP1
Mixed packing provisions (ADR) : MP19
Transport category (ADR) : 3
Special provisions for carriage - Packages (ADR) : V12

Tunnel restriction code (ADR) : D/E
EAC code : •3Y

Transport by sea

Special provisions (IMDG) : 223, 955
Limited quantities (IMDG) : 5 L
Special packing provisions (IMDG) : PP1
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-E
Stowage category (IMDG) : A

Air transport

No data available

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

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SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:

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Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard

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Abbreviations and acronyms:	
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Data sources : ECHA (European Chemicals Agency).

Training advice : Handle in accordance with good industrial hygiene and safety procedures.

Full text of H- and EUH-statements:	
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2

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Full text of H- and EUH-statements:	
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H370	Causes damage to organs.
H371	May cause damage to organs.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Skin Corr. 1	Skin corrosion/irritation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT SE 1	Specific target organ toxicity – single exposure, Category 1
STOT SE 2	Specific target organ toxicity – Single exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
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
Aquatic Chronic 2	H411	Calculation method

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.