

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

1.1. Product identifier

Product form : Mixture
Product name : Altro Patch Hardener
Product code : PUFC5H
Product group : End product

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

1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use
Use of the substance/mixture : Amine Epoxy Hardener - Industrial flooring & wall coatings.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer

Altro Resin Systems
Unit 3 Station Road Industrial Estate
Station Road
GB- DT2 0AE Maiden Newton Dorchester
T 01300 320620
sds@altro.com - www.altro.com

1.4. Emergency telephone number

Emergency number : 01462 480480
Monday - Friday 09:00 - 17:00

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to GB CLP (SI 2019:720 as amended)

Acute toxicity (oral), Category 4	H302
Skin corrosion/irritation, Category 1, Sub-Category 1C	H314
Serious eye damage/eye irritation, Category 1	H318
Skin sensitisation, Category 1	H317

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 GB CLP (SI 2019:720 as amended)

Hazard pictograms (GHS UK) :



GHS05

GHS07

Signal word (GHS UK) :

Danger

Contains

ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine; Nitric acid, ammonium calcium salt; 2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL; Bis((dimethylamino)methyl)phenol

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Hazard statements (GHS UK)	: H302 - Harmful if swallowed. H314 - Causes severe skin burns and eye damage. H317 - May cause an allergic skin reaction.
Precautionary statements (GHS UK)	: P260 - Do not breathe fume, vapours. P264 - Wash hands thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P272 - Contaminated work clothing should not be allowed out of the workplace. P280 - Wear eye protection, protective clothing, protective gloves. P301+P312 - IF SWALLOWED: Call a POISON CENTER if you feel unwell.

2.3. Other hazards

Results of PBT and vPvB assessment

Component	
Substance(s) not meeting the PBT criteria of UK REACH regulation, in accordance with Annex XIII	ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2), ETHANOL (64-17-5), BENZYL DIMETHYLAMINE (103-83-3), Nitric acid, ammonium calcium salt (15245-12-2), 2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL (90-72-2), Bis((dimethylamino)methyl)phenol (71074-89-0)
Substance(s) not meeting the vPvB criteria of UK REACH regulation, in accordance with Annex XIII	ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2), ETHANOL (64-17-5), BENZYL DIMETHYLAMINE (103-83-3), Nitric acid, ammonium calcium salt (15245-12-2), 2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL (90-72-2), Bis((dimethylamino)methyl)phenol (71074-89-0)

Results of Endocrine Disruptor assessment

Component	
Substance(s) not considered as endocrine disrupting. They are not included in the list established in accordance with Article 59(1) of UK REACH for having endocrine disrupting properties, nor identified as having endocrine disrupting properties in accordance with the criteria set out in GB BPR and GB PPP	ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine(2855-13-2), 2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL(90-72-2), Bis((dimethylamino)methyl)phenol(71074-89-0), ETHANOL(64-17-5), Nitric acid, ammonium calcium salt(15245-12-2), BENZYL DIMETHYLAMINE(103-83-3)

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to GB CLP (SI 2019:720 as amended)
ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine	CAS-No.: 2855-13-2 EC-No.: 220-666-8 UK Index-No.: 612-067-00-9	≥ 75	Acute Tox. 4 (Oral), H302 (ATE=1030 mg/kg bodyweight) Acute Tox. 4 (Dermal), H312 (ATE=1100 mg/kg bodyweight) Skin Corr. 1, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Chronic 3, H412
2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL	CAS-No.: 90-72-2 EC-No.: 202-013-9 UK Index-No.: 603-069-00-0	≥ 10 – < 30	Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Skin Corr. 1C, H314 Eye Dam. 1, H318
Bis((dimethylamino)methyl)phenol	CAS-No.: 71074-89-0	≥ 1 – < 5	Skin Corr. 1C, H314

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Name	Product identifier	%	Classification according to GB CLP (SI 2019:720 as amended)
ETHANOL	CAS-No.: 64-17-5 EC-No.: 200-578-6 UK Index-No.: 603-002-00-5	≥ 1 – < 5	Flam. Liq. 2, H225 Eye Irrit. 2, H319
Nitric acid, ammonium calcium salt	CAS-No.: 15245-12-2 EC-No.: 239-289-5	≥ 1 – < 5	Acute Tox. 4 (Oral), H302 (ATE=1150 mg/kg bodyweight) Eye Dam. 1, H318
BENZYLDIMETHYLAMINE	CAS-No.: 103-83-3 EC-No.: 203-149-1 UK Index-No.: 612-074-00-7	< 0.1	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Acute Tox. 4 (Dermal), H312 (ATE=1100 mg/kg bodyweight) Acute Tox. 3 (Inhalation), H331 (ATE=0.5 mg/l/4h) Acute Tox. 3 (Inhalation:dust,mist), H331 (ATE=0.5 mg/l/4h) Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Chronic 3, H412

Specific concentration limits:

Name	Product identifier	Specific concentration limits (%)
ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine	CAS-No.: 2855-13-2 EC-No.: 220-666-8 UK Index-No.: 612-067-00-9	(0.001 ≤ C ≤ 100) Skin Sens. 1A; H317

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	: Get medical advice/attention if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.
First-aid measures after skin contact	: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.
First-aid measures after eye contact	: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: Drink plenty of water. Go into open air and ventilate suspected area. If swallowed, seek medical advice immediately and show this container or label.

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

Symptoms/effects	: Treat symptomatically.
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4.3. Indication of any immediate medical attention and special treatment needed

No specific recommendations.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide. Dry powder. Water spray. Water fog.
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5.2. Special hazards arising from the substance or mixture

Fire hazard : Thermal decomposition can lead to the release of irritating gases and vapours.

5.3. Advice for firefighters

Firefighting instructions : Do not use water jet to extinguish. Control run-off water by containing and keeping it out of sewers and watercourses.

Protection during firefighting : Use self-contained breathing apparatus and chemically 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 : Wear recommended personal protective equipment.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Do not allow to enter sewers, surface or groundwater.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Absorb remaining liquid with sand or inert absorbent and remove to safe place. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not breathe vapours. Do not handle until all safety precautions have been read and understood. Keep only in original container.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Store in a well-ventilated place. Keep cool. Store in a dry place. Store in a closed container.

7.3. Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

ETHANOL (64-17-5)

United Kingdom - Occupational Exposure Limits

WEL TWA (OEL TWA)	380 mg/m ³
	200 ppm

8.1.2. Recommended monitoring procedures

No additional information available

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8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	20.1 mg/m ³
Acute - local effects, inhalation	0.073 mg/m ³
Long-term - local effects, inhalation	0.073 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, oral	0.3 mg/kg bodyweight/day
Long-term - systemic effects, oral	0.3 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.06 mg/l
PNEC aqua (marine water)	0.006 mg/l
PNEC aqua (intermittent, freshwater)	0.23 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	5.784 mg/kg dwt
PNEC sediment (marine water)	0.578 mg/kg dwt
PNEC (Soil)	
PNEC soil	1.121 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	3.18 mg/l
ETHANOL (64-17-5)	
DNEL/DMEL (Workers)	
Acute - local effects, dermal	950 mg/m ³
Acute - local effects, inhalation	1900 mg/m ³
Long-term - systemic effects, dermal	343 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	950 mg/m ³
DNEL/DMEL (General population)	
Acute - local effects, dermal	950 mg/m ³
Acute - local effects, inhalation	950 mg/m ³
Long-term - systemic effects, oral	87 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	114 mg/m ³
Long-term - systemic effects, dermal	206 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.96 mg/l
PNEC aqua (marine water)	0.79 mg/l
PNEC aqua (intermittent, freshwater)	2.75 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	3.6 mg/kg dwt

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ETHANOL (64-17-5)	
PNEC sediment (marine water)	2.9 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.63 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	0.72 g/kg food
PNEC (STP)	
PNEC sewage treatment plant	580 mg/l
BENZYLDIMETHYLAMINE (103-83-3)	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	2.8 mg/kg bodyweight/day
Acute - systemic effects, inhalation	9.9 mg/m ³
Long-term - systemic effects, dermal	1.4 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	4.9 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, dermal	1 mg/kg bodyweight/day
Acute - systemic effects, inhalation	1.74 mg/m ³
Acute - systemic effects, oral	0.5 mg/kg bodyweight/day
Long-term - systemic effects, oral	0.25 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.87 mg/m ³
Long-term - systemic effects, dermal	0.5 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.0048 mg/l
PNEC aqua (marine water)	0.00048 mg/l
PNEC aqua (intermittent, freshwater)	0.0134 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.071 mg/kg dwt
PNEC sediment (marine water)	0.0071 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.0114 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	534 mg/l
Nitric acid, ammonium calcium salt (15245-12-2)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	13.9 mg/kg bw/day
Long-term - systemic effects, inhalation	98 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, oral	10 mg/kg bodyweight/day
Long-term - systemic effects, oral	8.33 mg/kg bw/day

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Nitric acid, ammonium calcium salt (15245-12-2)	
Long-term - systemic effects, inhalation	29 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	0.45 mg/l
PNEC aqua (marine water)	0.045 mg/l
PNEC aqua (intermittent, freshwater)	4.5 µg/L
PNEC (STP)	
PNEC sewage treatment plant	18 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
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

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Provide local exhaust or general room ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

8.2.2. Personal protection equipment

Personal protective equipment:

Gloves. Dustproof clothing. Safety glasses.

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Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Wear eye protection

8.2.2.2. Skin protection

Skin and body protection:

Avoid contact with skin

Hand protection:

Standard EN 374 - Protective gloves against chemicals.

Other skin protection

Materials for protective clothing:

Wear protective clothing. Keep work clothing separately

8.2.2.3. Respiratory protection

Respiratory protection:

Wear suitable respiratory equipment in case of insufficient ventilation

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Colour	: Red-brown.
Odour	: Not available
Odour threshold	: Not available
pH	: Not available
Melting point	: Not available
Freezing point	: Not available
Boiling point	: Not available
Flash point	: > 150 °C
Flammability	: Not available
Explosive limits	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Relative vapour density at 20°C	: Not available
Relative density	: Not available
Density	: Not available
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
Viscosity, kinematic	: Not available
Explosive properties	: Not available

9.2. Other information

Particle characteristics	: Not applicable
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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

None under normal use.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Not relevant.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

Altro Patch Hardener	
ATE UK (oral)	896.961 mg/kg bodyweight
ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2)	
LD50 oral rat	1030 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	> 5.01 mg/l/4h
ETHANOL (64-17-5)	
LD50 oral rat	15010 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 14450 - 15560
LD50 oral	8300 mg/kg bodyweight Animal: mouse
LD50 dermal rabbit	> 2000 mg/kg
LC50 Inhalation - Rat	95.6 – 125 mg/l/4h
LC50 Inhalation - Rat (Vapours)	116.9 mg/l/4h
BENZYLDIMETHYLAMINE (103-83-3)	
LD50 oral rat	579 mg/kg
LD50 dermal rabbit	1477 mg/kg
LC50 Inhalation - Rat	≈ 2.052 mg/l air Animal: rat, 95% CL: 1720 - 2472

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Nitric acid, ammonium calcium salt (15245-12-2)	
LD50 oral rat	300 – 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), Guideline: EPA OPPTS 870.1100 (Acute Oral Toxicity), Guideline: other:
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
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
Skin corrosion/irritation	: Causes severe skin burns.
ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2)	
pH	11.6
Serious eye damage/irritation	: Causes serious eye damage.
ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2)	
pH	11.6
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)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2)	
LOAEL (oral, rat, 90 days)	160 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
ETHANOL (64-17-5)	
LOAEL (oral, rat, 90 days)	3200 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (oral, rat, 90 days)	1730 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents), Remarks on results: other:
NOAEL (subchronic, oral, animal/male, 90 days)	< 9700 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)
NOAEL (subchronic, oral, animal/female, 90 days)	> 9400 mg/kg bodyweight Animal: mouse, Animal sex: female, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)
BENZYL DIMETHYLAMINE (103-83-3)	
NOAEL (oral, rat, 90 days)	≈ 150 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents)
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)
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2)	
Viscosity, kinematic	19 mm ² /s Temp.: 'other:' Parameter: 'kinematic viscosity (in mm ² /s)'
ETHANOL (64-17-5)	
Viscosity, kinematic	1.488 mm ² /s

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Other information

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) : Not classified (Based on available data, the classification criteria are not met).

ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2)

LC50 - Fish [1]	110 mg/l Test organisms (species): Leuciscus idus
EC50 - Crustacea [1]	23 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	37 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	> 50 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
LOEC (chronic)	10 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	3 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

ETHANOL (64-17-5)

LC50 - Fish [1]	14.2 g/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	> 10000 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	275 mg/l Test organisms (species): Chlorella vulgaris
NOEC (chronic)	9.6 mg/l Test organisms (species): Daphnia magna Duration: '9 d'
NOEC chronic crustacea	9.6 mg/l Test organisms (species): Daphnia magna
NOEC chronic algae	280 mg/l Test organisms (species): Lemna gibbous

BENZYL DIMETHYLAMINE (103-83-3)

LC50 - Fish [1]	37.8 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	1.34 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	0.56 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
NOEC chronic crustacea	0.789 mg/l Water Flea, 21 d exposure - Huntsman MSDS (V3) 20/05/2022

Nitric acid, ammonium calcium salt (15245-12-2)

LC50 - Fish [1]	> 98.6 mg/l Test organisms (species): Rainbow Trout
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 - Crustacea [2]	490 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 100 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL (90-72-2)

LC50 - Fish [1]	> 100 mg/l Test organisms (species): Cyprinus carpio
LC50 - Fish [2]	718 mg/l

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2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL (90-72-2)

EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	46.7 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	25.5 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	84 mg/l Test organisms (species): Desmodesmus subspicatus

12.2. Persistence and degradability

Altro Patch Hardener

Persistence and degradability	Not rapidly degradable
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ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2)

Persistence and degradability	Not rapidly degradable
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ETHANOL (64-17-5)

Persistence and degradability	Not rapidly degradable
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BENZYL DIMETHYLAMINE (103-83-3)

Persistence and degradability	Not rapidly degradable
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Nitric acid, ammonium calcium salt (15245-12-2)

Persistence and degradability	Not rapidly degradable
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2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL (90-72-2)

Persistence and degradability	Not rapidly degradable
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Bis((dimethylamino)methyl)phenol (71074-89-0)

Persistence and degradability	Not rapidly degradable
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12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component

ISOPHORONEDIAMINE / 3-Aminomethyl-3-5,5-trimethylcyclohexylamine (2855-13-2)	This substance does not meet the PBT criteria of UK REACH regulation, annex XIII This substance does not meet the vPvB criteria of UK REACH regulation, annex XIII
ETHANOL (64-17-5)	This substance does not meet the PBT criteria of UK REACH regulation, annex XIII This substance does not meet the vPvB criteria of UK REACH regulation, annex XIII
BENZYL DIMETHYLAMINE (103-83-3)	This substance does not meet the PBT criteria of UK REACH regulation, annex XIII This substance does not meet the vPvB criteria of UK REACH regulation, annex XIII
Nitric acid, ammonium calcium salt (15245-12-2)	This substance does not meet the PBT criteria of UK REACH regulation, annex XIII This substance does not meet the vPvB criteria of UK REACH regulation, annex XIII
2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL (90-72-2)	This substance does not meet the PBT criteria of UK REACH regulation, annex XIII This substance does not meet the vPvB criteria of UK REACH regulation, annex XIII
Bis((dimethylamino)methyl)phenol (71074-89-0)	This substance does not meet the PBT criteria of UK REACH regulation, annex XIII This substance does not meet the vPvB criteria of UK REACH regulation, annex XIII

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12.6. Other adverse effects

Ozone : Not classified (Based on available data, the classification criteria are not met)






SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation : Disposal must be done according to official regulations.
 Waste treatment methods : Must follow special treatment according to local regulation.
 HP Code : HP6 - "Acute Toxicity:" waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure.
 HP8 - "Corrosive:" waste which on application can cause skin corrosion.
 HP13 - "Sensitising:" waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs.
 HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 2735	UN 2735	UN 2735	UN 2735	UN 2735
14.2. UN proper shipping name				
AMINES, LIQUID, CORROSIVE, N.O.S. (AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.)	AMINES, LIQUID, CORROSIVE, N.O.S. (AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.)	Amines, liquid, corrosive, n.o.s. (AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.)	AMINES, LIQUID, CORROSIVE, N.O.S. (AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.)	AMINES, LIQUID, CORROSIVE, N.O.S. (AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.)
Transport document description				
UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.), 8, III, (E)	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.), 8, III	UN 2735 Amines, liquid, corrosive, n.o.s. (AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.), 8, III	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.), 8, III	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.), 8, III
14.3. Transport hazard class(es)				
8	8	8	8	8
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No

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ADR	IMDG	IATA	ADN	RID
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: C7
Special provisions (ADR)	: 274
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC03, LP01, R001
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T7
Portable tank and bulk container special provisions (ADR)	: TP1, TP28
Tank code (ADR)	: L4BN
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V12
Hazard identification number (Kemler No.)	: 80
Orange plates	:



Tunnel restriction code (ADR)	: E
EAC code	: 2X

Transport by sea

Special provisions (IMDG)	: 223, 274
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001, LP01
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP1, TP28
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-B
Stowage category (IMDG)	: A
Segregation (IMDG)	: 18 - Alkalis (SGG18), SG35
Properties and observations (IMDG)	: Colourless to yellowish liquids or solutions with a pungent odour. Miscible with or soluble in water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. Reacts violently with acids. Cause burns to skin, eyes and mucous membranes.

Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y841
PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 852
PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 856
CAO max net quantity (IATA)	: 60L
Special provisions (IATA)	: A3, A803
ERG code (IATA)	: 8L

Inland waterway transport

Classification code (ADN)	: C7
Special provisions (ADN)	: 274
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP

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Number of blue cones/lights (ADN) : 0

Rail transport

Classification code (RID) : C7
Special provisions (RID) : 274
Limited quantities (RID) : 5L
Excepted quantities (RID) : E1
Packing instructions (RID) : P001, IBC03, LP01, R001
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T7
Portable tank and bulk container special provisions (RID) : TP1, TP28
Tank codes for RID tanks (RID) : L4BN
Transport category (RID) : 3
Special provisions for carriage – Packages (RID) : W12
Colis express (express parcels) (RID) : CE8
Hazard identification number (RID) : 80

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. National regulations

UK REACH Annex XVII (Restriction List)

This product contains no substance(s) listed on UK REACH Annex XVII (Restriction List) equal to or above the level of SDS disclosure

UK REACH Annex XIV (Authorisation List)

This product contains no substance(s) listed on UK REACH Annex XIV (Authorisation List) equal to or above the 0.1% level of disclosure

UK REACH Candidate List (SVHC)

This product contains no substance(s) listed on the UK REACH Candidate List (SVHC) above the 0.1% level of disclosure

GB PIC Regulation (Prior Informed Consent)

This product contains no substance(s) listed on the GB PIC List equal to or above the level of SDS disclosure

POP Regulation (Persistent Organic Pollutants)

This product contains no substance(s) listed on the GB POP List equal to or above the level of SDS disclosure

Ozone Regulation (S.I. No. 168 of 2015)

This product contains no substance(s) listed on the GB Ozone Depletion List equal to or above the level of SDS disclosure

Control of Poisons and Explosives Precursors Act

This product contains no substance(s) listed as a reportable poison on the Control of Poisons and Explosives Precursors Regulations equal to or above the level of SDS disclosure

This product contains no substance(s) listed as a regulated poison on the Control of Poisons and Explosives Precursors Regulations equal to or above the level of SDS disclosure

This product contains substance(s) listed on the Control of Poisons and Explosives Precursors Regulations equal to or above the level of SDS disclosure: Calcium ammonium nitrate - 15245-12-2

This substance is not listed as a regulated poison on the Control of Poisons and Explosives Precursors Regulations

Drug Precursors Regulation (EC 273/2004)

This product contains no substance(s) listed on the GB Drug Precursors List equal to or above the level of SDS disclosure

15.1.2. Other Information

15.2. Chemical safety assessment

No additional information available

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SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
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
Flam. Liq. 2	Flammable liquids, Category 2
Skin Corr. 1	Skin corrosion/irritation, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Corr. 1C	Skin corrosion/irritation, Category 1, Sub-Category 1C
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1A	Skin sensitisation, category 1A
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

Safety Data Sheet (SDS), UK

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.