

SAFETY DATA SHEET



Penguard Tie Coat 100 Comp B

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

1.1 Product identifier

Product name	: Penguard Tie Coat 100 Comp B
Product code	: 621
Product description	: Hardener.
Product type	: Liquid.
Other means of identification	: Not available.

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

Use in coatings - Industrial use
Use in coatings - Professional use

1.3 Details of the supplier of the safety data sheet

Jotun A/S
P.O.Box 2021
3202 Sandefjord
Norway
Tel: + 47 33 45 70 00
Fax: +47 33 45 72 42
E-mail: SDSJotun@jotun.no

Jotun Paints (Europe) Ltd.
Stather Road
Flixborough, Scunthorpe
North Lincolnshire
DN15 8RR
England

Tel: +44 17 24 40 00 00
Fax: +44 17 24 40 01 00

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : Contact NHS Direct; phone 0845 4647 or 111. Open 24/7.

Supplier

Telephone number : +47 33 45 70 00 Jotun Norway (head office)

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
Acute Tox. 4, H332
Skin Corr. 1C, H314
Eye Dam. 1, H318
STOT SE 3, H335
STOT SE 3, H336
STOT RE 2, H373
Aquatic Chronic 3, H412

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

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

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

2.2 Label elements

SECTION 2: Hazards identification

Hazard pictograms



Signal word

: Danger.

Hazard statements

: H226 - Flammable liquid and vapour.
 H314 - Causes severe skin burns and eye damage.
 H332 - Harmful if inhaled.
 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

General

: Not applicable.

Prevention

: P280 - Wear protective gloves, protective clothing and eye or face protection.
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P273 - Avoid release to the environment.
 P260 - Do not breathe vapour or spray.

Response

: P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor.
 P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor.
 P363 - Wash contaminated clothing before reuse.
 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

: P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

Disposal

: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

: H208 - Contains Amines, polyethylenepoly-, triethylenetetramine fraction and 2,2'-iminodiethylamine. May produce an allergic reaction.

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

: Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings

: Not applicable.

Tactile warning of danger

: 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
xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≥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 Asp. Tox. 1, H304 Aquatic Chronic 3, H412	[1] [2]
butan-1-ol	REACH #: 01-2119484630-38 EC: 200-751-6 CAS: 71-36-3 Index: 603-004-00-6	≥10 - ≤20	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]
ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≥10 - ≤21	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	[1] [2]
2,4,6-tris(dimethylaminomethyl) phenol	REACH #: 01-2119560597-27 EC: 202-013-9 CAS: 90-72-2 Index: 603-069-00-0	≤10	Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Dam. 1, H318	[1]
hydrocarbons, C9, aromatics	REACH #: 01-2119455851-35 EC: 918-688-5 CAS: 64742-95-6	≤10	Flam. Liq. 3, H226 STOT SE 3, H335 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066	[1]
1-methoxy-2-propanol	REACH #: 01-2119457435-35 EC: 203-539-1 CAS: 107-98-2 Index: 603-064-00-3	≤10	Flam. Liq. 3, H226 STOT SE 3, H336	[1] [2]
Amines, polyethylenepoly-, triethylenetetramine fraction	REACH #: 01-2119487919-13 EC: 292-588-2 CAS: 90640-67-8	<1	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412 EUH071	[1]
2,2'-iminodiethylamine	REACH #: 01-2119473793-27 EC: 203-865-4 CAS: 111-40-0	<1	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 See Section 16 for the full text of the H statements declared above.	[1] [2]

SECTION 3: Composition/information on ingredients

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.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

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. Flush contaminated skin with plenty of 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. 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. Do not induce vomiting unless directed to do so by medical personnel. 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

SECTION 4: First aid measures

- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

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.

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

SECTION 6: Accidental release measures

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 : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

Danger criteria

Penguard Tie Coat 100 Comp B

SECTION 7: Handling and storage

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

See Technical Data Sheet / packaging for further information.

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
xylene	EH40/2005 WELs (United Kingdom (UK), 1/2020). [xylene, o-,m-, p- or mixed isomers] Absorbed through skin. STEL: 441 mg/m ³ 15 minutes. STEL: 100 ppm 15 minutes. TWA: 220 mg/m ³ 8 hours. TWA: 50 ppm 8 hours.
butan-1-ol	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 154 mg/m ³ 15 minutes. STEL: 50 ppm 15 minutes.
ethylbenzene	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 552 mg/m ³ 15 minutes. STEL: 125 ppm 15 minutes. TWA: 100 ppm 8 hours. TWA: 441 mg/m ³ 8 hours.
1-methoxy-2-propanol	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 560 mg/m ³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 375 mg/m ³ 8 hours. TWA: 100 ppm 8 hours.
2,2'-iminodiethylamine	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. TWA: 4.3 mg/m ³ 8 hours. TWA: 1 ppm 8 hours.

Biological exposure indices

Product/ingredient name	Exposure indices
xylene	EH40/2005 BMGVs (United Kingdom (UK), 8/2018) [Xylene, o-, m-, p- or mixed isomers] BGV: 650 mmol/mol creatinine, methyl hippuric acid [in urine]. Sampling time: post shift.

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

DNELs/DMELs

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Type	Exposure	Value	Population	Effects
xylene	DNEL	Long term Oral	5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	65.3 mg/m ³	General population	Local
	DNEL	Long term Inhalation	65.3 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	125 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	212 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	221 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	221 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	260 mg/m ³	General population	Local
	DNEL	Short term Inhalation	260 mg/m ³	General population	Systemic
	DNEL	Short term Inhalation	442 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	442 mg/m ³	Workers	Systemic
	butan-1-ol	DNEL	Long term Oral	1.5625 mg/kg bw/day	General population
DNEL		Long term Dermal	3.125 mg/kg bw/day	General population	Systemic
DNEL		Long term Inhalation	55.357 mg/m ³	General population	Systemic
DNEL		Long term Inhalation	155 mg/m ³	General population	Local
DNEL		Long term Inhalation	310 mg/m ³	Workers	Local
ethylbenzene	DMEL	Long term Inhalation	442 mg/m ³	Workers	Local
	DMEL	Short term Inhalation	884 mg/m ³	Workers	Systemic
	DNEL	Long term Oral	1.6 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	15 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	77 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	180 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	293 mg/m ³	Workers	Local
	2,4,6-tris(dimethylaminomethyl) phenol	DMEL	Long term Dermal	0.2 mg/kg bw/day	Workers
DNEL		Long term Inhalation	0.31 mg/m ³	Workers	Systemic
DNEL		Long term Oral	0.075 mg/kg bw/day	General population	Systemic
DNEL		Short term Dermal	0.075 mg/kg bw/day	General population	Systemic
DNEL		Long term Dermal	0.075 mg/kg bw/day	General population	Systemic
DNEL		Short term Inhalation	0.13 mg/m ³	General population	Systemic
DNEL		Long term Inhalation	0.13 mg/m ³	General population	Systemic
DNEL		Long term Dermal	0.15 mg/kg bw/day	Workers	Systemic

SECTION 8: Exposure controls/personal protection

hydrocarbons, C9, aromatics	DNEL	Long term Inhalation	0.53 mg/m ³	Workers	Systemic
	DNEL	Short term Dermal	0.6 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	2.1 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	12.5 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	151 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	7.5 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Inhalation	32 mg/m ³	General population [Consumers]	Systemic
	DNEL	Long term Oral	7.5 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Inhalation	0.41 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	1.9 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	178.57 mg/m ³	General population	Local
	DNEL	Short term Inhalation	640 mg/m ³	General population	Local
	DNEL	Long term Inhalation	837.5 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	1066.67 mg/m ³	Workers	Local
	1-methoxy-2-propanol	DNEL	Short term Inhalation	1152 mg/m ³	General population
DNEL		Short term Inhalation	1286.4 mg/m ³	Workers	Systemic
DNEL		Long term Oral	33 mg/kg bw/day	General population	Systemic
DNEL		Long term Inhalation	43.9 mg/m ³	General population	Systemic
DNEL		Long term Dermal	78 mg/kg bw/day	General population	Systemic
DNEL		Long term Dermal	183 mg/kg bw/day	Workers	Systemic
DNEL		Long term Inhalation	369 mg/m ³	Workers	Systemic
DNEL		Short term Inhalation	553.5 mg/m ³	Workers	Local
DNEL		Short term Inhalation	553.5 mg/m ³	Workers	Systemic
DNEL		Long term Inhalation	0.096 mg/m ³	General population	Systemic
Amines, polyethylenepoly-, triethylenetetramine fraction	DNEL	Long term Oral	0.14 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.54 mg/m ³	Workers	Systemic
2,2'-iminodiethylamine	DNEL	Long term Inhalation	0.87 mg/m ³	Workers	Local
	DNEL	Long term Dermal	1.1 mg/cm ²	Workers	Local
	DNEL	Short term Inhalation	2.6 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	4.6 mg/m ³	General population	Systemic
	DNEL	Short term Dermal	4.88 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	4.88 mg/kg bw/day	General population	Systemic

SECTION 8: Exposure controls/personal protection

	DNEL	Long term Dermal	4.88 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	11.4 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	15.4 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	27.5 mg/m ³	General population	Systemic
	DNEL	Short term Inhalation	92.1 mg/m ³	Workers	Systemic

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
xylene	Fresh water	0.327 mg/l	-
	Marine	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 dwt	-
butan-1-ol	Fresh water	0.082 mg/l	-
	Marine	0.0082 mg/l	-
	Sewage Treatment Plant	2476 mg/l	-
	Fresh water sediment	0.178 mg/kg dwt	-
	Marine water sediment	0.0178 mg/kg dwt	-
	Soil	0.015 mg/kg dwt	-
ethylbenzene	Fresh water	0.1 mg/l	-
	Marine	0.01 mg/l	-
	Sewage Treatment Plant	9.6 mg/l	-
	Fresh water sediment	13.7 mg/kg dwt	-
	Soil	2.68 mg/kg dwt	-
	Secondary Poisoning	20 mg/kg	-
2,4,6-tris(dimethylaminomethyl)phenol	Fresh water	0.084 mg/l	-
	Marine	0.0084 mg/l	-
	Sewage Treatment Plant	0.2 mg/l	-
	Fresh water	10 mg/l	-
1-methoxy-2-propanol	Marine	1 mg/l	-
	Sewage Treatment Plant	100 mg/l	-
	Fresh water sediment	52.3 mg/kg dwt	-
	Marine water sediment	5.2 mg/kg dwt	-
Amines, polyethylenepoly-, triethylenetetramine fraction	Soil	5.49 mg/kg dwt	-
	Fresh water	190 µg/l	Assessment Factors
	Fresh water sediment	95.9 mg/kg	Equilibrium Partitioning
	Marine water	38 µg/l	Assessment Factors
	Marine water sediment	19.2 mg/kg	Equilibrium Partitioning
	Soil	19.1 mg/kg	Equilibrium Partitioning
	Sewage Treatment Plant	4.25 mg/l	Assessment Factors
	Secondary Poisoning	0.18 mg/kg	Assessment Factors
	Fresh water	0.56 mg/l	-
	Marine	0.056 mg/l	-
2,2'-iminodiethylamine	Sewage Treatment Plant	6 mg/l	-
	Fresh water sediment	1072 mg/kg dwt	-
	Marine water sediment	107.2 mg/kg dwt	-
	Soil	214 mg/kg dwt	-

SECTION 8: Exposure controls/personal protection**8.2 Exposure controls**

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying to ISO 16321-1:2022 should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

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

Wear suitable gloves tested to ISO 374-1:2016.

Not recommended, gloves(breakthrough time) < 1 hour: PVC (> 0.5 mm)

May be used, gloves(breakthrough time) 4 - 8 hours: Viton® (> 0.7 mm), neoprene (> 0.35 mm), butyl rubber (> 0.4 mm)

Recommended, gloves(breakthrough time) > 8 hours: Teflon (> 0.35 mm), nitrile rubber (> 0.75 mm), 4H/Silver Shield® (> 0.07 mm), polyvinyl alcohol (PVA) (> 0.3 mm)

For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves.

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 : Use chemical-resistant protective suit / disposable overall.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

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 a respirator according to EN 140. Use respiratory mask with charcoal and dust filter when spraying this product, according to EN 14387 (as filter combination A2-P2). In confined spaces, use compressed-air or fresh-air respiratory equipment. When use of roller or brush, consider use of charcoal filter.

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	: Colourless.
Odour	: Characteristic.
Odour threshold	: Not applicable.
Melting point/freezing point	: Not applicable.
Initial boiling point and boiling range	: Lowest known value: 119°C (246.2°F) (butan-1-ol). Weighted average: 134.81°C (274.7°F)
Flammability	: Not applicable.
Upper/lower flammability or explosive limits	: 0.8 - 13.74%
Flash point	: Closed cup: 25°C (77°F)
Auto-ignition temperature	: Lowest known value: 270°C (518°F) (1-methoxy-2-propanol).
Decomposition temperature	: Not available.
pH	: Not applicable.
Viscosity	: Kinematic (40°C): >20.5 mm ² /s
Solubility(ies)	:

Media	Result
cold water	Not soluble
hot water	Not soluble

Partition coefficient: n-octanol/ water : Not available.

Vapour pressure : Highest known value: 1.2 kPa (9.3 mm Hg) (at 20°C) (ethylbenzene). Weighted average: 0.83 kPa (6.23 mm Hg) (at 20°C)

Evaporation rate : Highest known value: 0.84 (ethylbenzene) Weighted average: 0.73 compared with butyl acetate

Density : 0.9 g/cm³

Vapour density : Highest known value: 3.7 (Air = 1) (xylene). Weighted average: 3.45 (Air = 1)

Explosive properties : Not available.

Oxidising properties : Not available.

Particle characteristics

Median particle size : Not applicable.

9.2 Other information

No additional information.

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	Species	Dose	Exposure	
xylene	LC50 Inhalation Vapour	Rat	11 mg/l	4 hours	
	LD50 Oral	Rat	4300 mg/kg	-	
	TDLo Dermal	Rabbit	4300 mg/kg	-	
butan-1-ol	LD50 Oral	Rat	790 mg/kg	-	
	ethylbenzene	LC50 Inhalation Vapour	Rat - Male	11 mg/l	4 hours
		LD50 Dermal	Rabbit	>5000 mg/kg	-
2,4,6-tris (dimethylaminomethyl) phenol	LD50 Oral	Rat	3500 mg/kg	-	
	LD50 Oral	Rat	1673 mg/kg	-	
	1-methoxy-2-propanol	LD50 Dermal	Rabbit	13 g/kg	-
LD50 Oral		Rat	6600 mg/kg	-	
Amines, polyethylenepoly-, triethylenetetramine fraction		LD50 Dermal	Rabbit - Male, Female	1465.4 mg/kg	-
	LD50 Oral	Rat - Male, Female	1716.2 mg/kg	-	
2,2'-iminodiethylamine	LC50 Inhalation Vapour	Rat	0.5 mg/l	4 hours	
	LD50 Dermal	Rabbit	1090 mg/kg	-	
	LD50 Oral	Rat	1080 mg/kg	-	

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Penguard Tie Coat 100 Comp B	3773.1	3330.3	N/A	19.3	N/A
xylene	4300	1100	N/A	11	N/A
butan-1-ol	500	N/A	N/A	N/A	N/A
ethylbenzene	3500	N/A	N/A	11	N/A
2,4,6-tris(dimethylaminomethyl)phenol	1673	N/A	N/A	N/A	N/A
1-methoxy-2-propanol	6600	13000	N/A	N/A	N/A
Amines, polyethylenepoly-, triethylenetetramine fraction	1716.2	1465.4	N/A	N/A	N/A
2,2'-iminodiethylamine	1080	1090	N/A	0.5	N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
xylene	Eyes - Mild irritant	Rabbit	-	87 milligrams	-
	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
2,4,6-tris (dimethylaminomethyl)phenol	Eyes - Severe irritant	Rabbit	-	24 hours 50 µg	-
	Skin - Severe irritant	Rat	-	0.25 ml	-
1-methoxy-2-propanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
2,2'-iminodiethylamine	Skin - Moderate irritant	Rabbit	-	500 milligrams	-

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
Amines, polyethylenepoly-, triethylenetetramine fraction	skin	Mammal - species unspecified	Sensitising
	skin	Mammal - species unspecified	Sensitising

Mutagenicity

SECTION 11: Toxicological information

No known significant effects or critical hazards.

Carcinogenicity

No known significant effects or critical hazards.

Reproductive toxicity

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
xylene	Category 3	-	Respiratory tract irritation
butan-1-ol	Category 3	-	Respiratory tract irritation
hydrocarbons, C9, aromatics	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation
1-methoxy-2-propanol	Category 3	-	Narcotic effects
2,2'-iminodiethylamine	Category 3	-	Narcotic effects Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
ethylbenzene	Category 2	-	hearing organs

Aspiration hazard

Product/ingredient name	Result
xylene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
hydrocarbons, C9, aromatics	ASPIRATION HAZARD - Category 1

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled. May cause drowsiness or dizziness. May cause respiratory irritation.

Skin contact : Causes severe burns.

Ingestion : No known significant effects or critical hazards.

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

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

SECTION 11: Toxicological information

- Ingestion** : Adverse symptoms may include the following:
stomach pains
- General** : May cause damage to organs through prolonged or repeated exposure.
- Other information** : None identified.

SECTION 12: Ecological information**12.1 Toxicity**

There are no data available on the mixture itself.
Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

Product/ingredient name	Result	Species	Exposure
xylene	Acute LC50 8500 µg/l Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
ethylbenzene	Acute EC50 7700 µg/l Marine water	Algae - Diatom - Skeletonema costatum	96 hours
	Acute EC50 2.93 mg/l	Daphnia	48 hours
	Acute LC50 4.2 mg/l	Fish	96 hours
hydrocarbons, C9, aromatics	Acute EC50 <10 mg/l	Daphnia	48 hours
	Acute IC50 <10 mg/l	Algae	72 hours
	Acute LC50 <10 mg/l	Fish	96 hours
Amines, polyethylenepoly-, triethylenetetramine fraction	Acute EC50 20 mg/l	Algae	72 hours
	Acute EC50 31.1 mg/l	Daphnia	48 hours
	Acute LC50 330 mg/l	Fish	96 hours
2,2'-iminodiethylamine	Acute EC50 345600 µg/l Fresh water	Algae - Green algae - Pseudokirchneriella subcapitata	96 hours

Conclusion/Summary : This material is harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
ethylbenzene	-	-	Readily
hydrocarbons, C9, aromatics	-	-	Not readily
Amines, polyethylenepoly-, triethylenetetramine fraction	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
xylene	3.12	8.1 to 25.9	low
butan-1-ol	1	-	low
ethylbenzene	3.6	-	low
2,4,6-tris (dimethylaminomethyl) phenol	0.219	-	low
hydrocarbons, C9, aromatics	-	10 to 2500	high
1-methoxy-2-propanol	<1	-	low
Amines, polyethylenepoly-, triethylenetetramine fraction	-2.65	-	low
2,2'-iminodiethylamine	-5.58	2.8 to 6.3	low

12.4 Mobility in soil

Penguard Tie Coat 100 Comp B

SECTION 12: Ecological information

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

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

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

SECTION 13: Disposal considerations

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

13.1 Waste treatment methods

Product

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

Hazardous waste : Yes.

Waste catalogue

Waste code	Waste designation
08 01 11*	Waste paint and varnish containing organic solvents or other dangerous substances





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
CEPE Guidelines	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	UN3469	UN3469	UN3469	UN3469
14.2 UN proper shipping name	Paint, flammable, corrosive	Paint, flammable, corrosive	Paint, flammable, corrosive	Paint, flammable, corrosive
14.3 Transport hazard class(es)	3 (8) 	3 (8) 	3 (8) 	3 (8) 

Penguard Tie Coat 100 Comp B

SECTION 14: Transport information

14.4 Packing group	III	III	III	III
14.5 Environmental hazards	No.	Yes.	No.	No.

Additional information

ADR/RID : **Hazard identification number** 38
Special provisions 163
Tunnel code (D/E)

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

IMDG : **Emergency schedules** F-E, S-C

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

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

SECTION 15: Regulatory information

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

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

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

EU regulations

SECTION 15: Regulatory information

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

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.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

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

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms :

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

Procedure used to derive the classification

Classification	Justification
✔ Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Corr. 1C, H314 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336 STOT RE 2, H373 Aquatic Chronic 3, H412	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

Full text of abbreviated H statements

SECTION 16: Other information

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
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.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH071	Corrosive to the respiratory tract.

Full text of classifications

Acute Tox. 2	ACUTE TOXICITY - Category 2
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
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
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Corr. 1C	SKIN CORROSION/IRRITATION - Category 1C
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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