

SAFETY DATA SHEET

Prefere 4546

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

1.1 Product identifier

Product name : Prefere 4546
Product type : Liquid.

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

Use of the substance/
mixture : Industrial/Professional Use: Adhesive. Woodworking industry.

1.3 Details of the supplier of the safety data sheet

Supplier : Dynea AS
P.O.Box 160, N-2001 Lillestrøm
Norway
Tel. +47 63897100
Fax. +47 63897610

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

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : Not available.

Supplier

Telephone number : +47 63897100

Hours of operation : 24 hours

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to UK CLP/GHS

Skin Sens. 1, H317

Carc. 1B, H350

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

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

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

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H317 - May cause an allergic skin reaction.
H350 - May cause cancer.

SECTION 2: Hazards identification

Precautionary statements

Prevention	: P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. P261 - Avoid breathing vapour.
Response	: P308 + P313 - IF exposed or concerned: Get medical advice or attention. P362 + P364 - Take off contaminated clothing and wash it before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of water. P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
Storage	: Not applicable.
Disposal	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Restricted to professional users.

Special packaging requirements

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
methanol	REACH #: 01-2119433307-44 EC: 200-659-6 CAS: 67-56-1 Index: 603-001-00-X	<3	Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT SE 1, H370 (blood system, central nervous system (CNS), optic nerve)	[1] [2]
butane-1,4-diol	REACH #: 01-2119471849-20 EC: 203-786-5 CAS: 110-63-4	≤1,8	Acute Tox. 4, H302 STOT SE 3, H336	[1]
formaldehyde	REACH #: 01-2119488953-20 EC: 200-001-8 CAS: 50-00-0 Index: 605-001-00-5	≤0,95	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Muta. 2, H341 Carc. 1B, H350 STOT SE 3, H335	[1] [2]
ε-caprolactam	REACH #: 01-2119457029-36 EC: 203-313-2	<1	Acute Tox. 4, H302 Acute Tox. 3, H331 Skin Irrit. 2, H315	[1] [2]

SECTION 3: Composition/information on ingredients

melamine	CAS: 105-60-2 Index: 613-069-00-2 REACH #: 01-2119485947-16 EC: 203-615-4 CAS: 108-78-1	≤0,3	Eye Irrit. 2, H319 STOT SE 3, H335 Carc. 2, H351 Repr. 2, H361f STOT RE 2, H373 See Section 16 for the full text of the H statements declared above.	[1]
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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** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Move exposed person to fresh air. Get medical attention if symptoms occur. 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** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation occurs.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. 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. Get medical attention if adverse health effects persist or are severe.
- General** : Move the victim to a safe area as soon as possible. If unconscious, place in recovery position and seek medical advice. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Allow the victim to rest in a well-ventilated area.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Inhalation** : Vapour may be irritating to eyes and respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : May cause an allergic skin reaction.

Over-exposure signs/symptoms

- Skin contact** : Adverse symptoms may include the following:
irritation
redness

SECTION 4: First aid measures

4.3 Indication of any immediate medical attention and special treatment needed

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst.
- 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.
- 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- 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).

6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with liquid-binding material (sand, diatomite, universal binders etc.) or use a spill kit.
- Large spill** : Approach the release from upwind. Stop leak if without risk. Move containers from spill area. 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). Contaminated absorbent material may pose the same hazard as the spilt product. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 6: Accidental release measures

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). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist.

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 away from incompatible materials (see Section 10). Store locked up. Keep away from food, drink and animal feeding stuffs. 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.

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
methanol	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 333 mg/m ³ 15 minutes. STEL: 250 ppm 15 minutes. TWA: 266 mg/m ³ 8 hours. TWA: 200 ppm 8 hours.
formaldehyde	EH40/2005 WELs (United Kingdom (UK), 1/2020). STEL: 2,5 mg/m ³ 15 minutes. STEL: 2 ppm 15 minutes. TWA: 2 ppm 8 hours. TWA: 2,5 mg/m ³ 8 hours.
ε-caprolactam	EH40/2005 WELs (United Kingdom (UK), 1/2020). TWA: 10 mg/m ³ 8 hours. Form: Dust and vapour STEL: 20 mg/m ³ 15 minutes. Form: Dust and vapour STEL: 3 mg/m ³ 15 minutes. Form: dust TWA: 1 mg/m ³ 8 hours. Form: dust

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. 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
methanol	DNEL	Short term Oral	4 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	4 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	4 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	4 mg/kg bw/day	General population	Systemic
	DNEL	Short term Inhalation	26 mg/m ³	General population	Local
	DNEL	Long term Inhalation	26 mg/m ³	General population	Local
	DNEL	Short term Inhalation	26 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	26 mg/m ³	General population	Systemic
	DNEL	Short term Dermal	20 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	20 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	130 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	130 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	130 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	130 mg/m ³	Workers	Systemic
butane-1,4-diol	DNEL	Long term Oral	8 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	19 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	958 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	136 mg/m ³	Workers	Systemic
formaldehyde	DNEL	Long term Dermal	12 µg/cm ²	General population	Local
	DNEL	Long term Dermal	102 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0,1 mg/m ³	General population	Local
	DNEL	Long term Inhalation	3,2 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	37 µg/cm ²	Workers	Local
	DNEL	Long term Dermal	240 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	0,75 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	0,375 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	9 mg/m ³	Workers	Systemic
	DNEL	Long term Oral	4,1 mg/kg bw/day	General population	Systemic
ε-caprolactam	DNEL	Long term Inhalation	2,5 mg/m ³	General population	Local
	DNEL	Short term Inhalation	5 mg/m ³	General population	Local
	DNEL	Long term Inhalation	5 mg/m ³	Workers	Local
	DNEL	Long term Oral	8,55 mg/kg bw/day	General population	Systemic

SECTION 8: Exposure controls/personal protection

melamine	DNEL	Short term Inhalation	10 mg/m ³	Workers	Local
	DNEL	Long term Oral	0,42 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	4,2 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	1,5 mg/m ³	General population	Systemic
	DNEL	Short term Dermal	117 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	11,8 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	82,3 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	8,3 mg/m ³	Workers	Systemic

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
Formaldehyde	Fresh water	0,44 mg/l	Sensitivity Distribution
	Intermittent release	4,44 mg/l	Sensitivity Distribution
	Marine	0,44 mg/l	Sensitivity Distribution
	Sewage Treatment Plant	0,19 mg/l	Assessment Factors
ε-caprolactam	Fresh water sediment	2,3 mg/kg dwt	Equilibrium Partitioning
	Marine water sediment	2,3 mg/kg dwt	Equilibrium Partitioning
	Soil	0,2 mg/kg dwt	Equilibrium Partitioning
	Fresh water	2 mg/l	Assessment Factors
	Intermittent release	1 mg/l	Assessment Factors
	Marine	0,2 mg/l	Assessment Factors
	Sewage Treatment Plant	1737 mg/l	Assessment Factors
	Fresh water sediment	18,7 mg/kg dwt	Equilibrium Partitioning
melamine	Soil	2,55 mg/kg dwt	Equilibrium Partitioning
	Fresh water	0,51 mg/l	Assessment Factors
	Intermittent release	2 mg/l	Assessment Factors
	Marine	0,051 mg/l	Assessment Factors
	Sewage Treatment Plant	200 mg/l	Assessment Factors
	Fresh water sediment	2,524 mg/kg dwt	Equilibrium Partitioning
	Marine water sediment	0,252 mg/kg dwt	Equilibrium Partitioning
	Soil	0,206 mg/kg dwt	Equilibrium Partitioning

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.

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. Immediately remove any contaminated clothing, shoes or socks. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Use eye protection according to EN 166, designed to protect against liquid splashes. Recommended: Safety glasses with side shields.

Skin protection

Hand protection : Wear suitable gloves tested to EN374. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

SECTION 8: Exposure controls/personal protection

	Recommended: Protective Index 6 / Breakthrough time >480 minutes: neoprene rubber 0.7 mm thickness or nitrile rubber 0.4 mm thickness
Body protection	: Wear work clothing with long sleeves. Cotton or cotton/synthetic overalls or coveralls are normally suitable.
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	: Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. No personal respiratory protective equipment normally required. Long Term Exposure / high concentrations : Self-contained respirator (DIN EN 133) or full face mask (DIN EN 136) Short term exposure / Low exposure : Half-face mask (DIN EN 140) Recommended: Filter type: Type AX (Brown): Low boiling organic compounds.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SECTION 9: Physical and chemical properties

The information provided in this section are typical values and not sales specifications

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	: White.
Odour	: Faint odour. [Slight]
Odour threshold	: Not available.
Melting point/freezing point	: 0°C
Initial boiling point and boiling range	: 100°C
Flammability (solid, gas)	: Not available.
Upper/lower flammability or explosive limits	: Not available.
Flash point	: Closed cup: >100°C [ASTM D 93]
Auto-ignition temperature	

Ingredient name	°C	Method
 butane-1,4-diol	385	DIN 51794

Decomposition temperature	: Not available.
pH	: 8 to 10 [DIN EN 1262]
Viscosity	: Dynamic (room temperature): 3000 to 10000 mPa·s Kinematic (40°C): Not applicable.

Solubility(ies)

Media	Result
cold water	Partially soluble

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

Vapour pressure

SECTION 9: Physical and chemical properties

Ingredient name	Vapour Pressure at 20 °C		Vapour pressure at 50 °C	
	kPa	Method	kPa	Method
methanol	16,9			

Relative density : Not available.
Density : 1,3 g/cm³ [ASTM D 4052]
Vapour density : Not available.
Particle characteristics
Median particle size : Not applicable.

9.2 Other information

No specific data.

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 : The product is stable.
10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid : No specific data.
10.5 Incompatible materials : No specific data.
10.6 Hazardous decomposition products : Formaldehyde may be released during processing.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
methanol	LC50 Inhalation Vapour	Rat - Male, Female	128,2 mg/l	4 hours
butane-1,4-diol	LD50 Dermal	Rabbit	17100 mg/kg	-
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	1500 mg/kg	-
formaldehyde	LC50 Inhalation Gas.	Rat	<463 mg/l	4 hours
	LD50 Oral	Rat	640 mg/kg	-
ε-caprolactam	LC50 Inhalation Vapour	Rat	8,16 mg/l	4 hours
	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
melamine	LD50 Oral	Rat - Female	1475 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat - Male, Female	>5190 mg/m ³	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat - Male	3161 mg/kg	-

methanol: Toxic by inhalation, in contact with skin and if swallowed.
 butane-1,4-diol: Harmful if swallowed.
 formaldehyde: Toxic if swallowed or in contact with skin. Fatal if inhaled.
 ε-caprolactam: Harmful if inhaled. Harmful if swallowed.

Acute toxicity estimates

SECTION 11: Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Prefere 4546	3047,2	9375	N/A	45,6	N/A
methanol	100	300	N/A	3	N/A
butane-1,4-diol	1500	N/A	N/A	N/A	N/A
formaldehyde	100	300	N/A	0,5	N/A
ε-caprolactam	1475	N/A	N/A	8,16	N/A
melamine	3161	N/A	N/A	N/A	N/A

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
butane-1,4-diol	Sub-acute NOAEC Inhalation Dusts and mists	Rat	1 mg/l	2 weeks
formaldehyde	Chronic NOAEL Oral	Rat	225 mg/kg	90 days
	Sub-acute LOAEC Inhalation Gas.	Rat - Male	6 ppm	6 weeks
	Chronic LOAEL Oral	Rat - Male, Female	82 mg/kg	105 weeks
	Chronic NOAEC Inhalation Gas.	Rat - Male, Female	1 ppm	26 weeks
	Sub-acute NOAEC Inhalation Gas.	Rat - Male	2 ppm	6 weeks
	Chronic NOAEL Oral	Rat - Male, Female	15 mg/kg	105 weeks
ε-caprolactam	Sub-chronic LOAEC Inhalation Vapour	Rat - Male, Female	0,066 mg/l Local Respiratory	13 weeks; 6 hours per day
	Sub-chronic NOAEC Inhalation Vapour	Rat - Male, Female	0,245 mg/l Systemic	13 weeks; 6 hours per day
	Sub-chronic NOAEL Oral	Rat - Male	29 mg/kg	13 weeks; 7 days per week
melamine	Sub-chronic NOAEL Oral	Rat	72 mg/kg	13 weeks

Irritation/Corrosion

Skin : methanol: Based on available data, the classification criteria are not met.
butane-1,4-diol: Based on available data, the classification criteria are not met.
formaldehyde: Causes burns.
ε-caprolactam: Irritating to skin.
melamine: Based on available data, the classification criteria are not met.

Eyes : methanol: Based on available data, the classification criteria are not met.
butane-1,4-diol: Based on available data, the classification criteria are not met.
formaldehyde: Causes serious eye damage.
ε-caprolactam: Irritating to eyes.
melamine: Based on available data, the classification criteria are not met.

Respiratory : formaldehyde: Irritating to respiratory system.

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Sensitisation

SECTION 11: Toxicological information

Product/ingredient name	Route of exposure	Species	Result
methanol	Respiratory	Guinea pig	Not sensitizing
formaldehyde	skin	Guinea pig	Not sensitizing
melamine	skin	Guinea pig	Sensitising
	skin	Mouse	Sensitising
	skin	Guinea pig	Not sensitizing

Skin : methanol: Not sensitizing
butane-1,4-diol: Based on available data, the classification criteria are not met.
formaldehyde: Sensitising
melamine: Not sensitizing

Respiratory : methanol: Not sensitizing
butane-1,4-diol: Based on available data, the classification criteria are not met.
formaldehyde: Not sensitizing

Product Conclusion/ Summary : May cause an allergic skin reaction.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
formaldehyde	OECD 471	Experiment: In vitro Subject: Bacteria	Positive
	OECD 741	Experiment: In vitro Subject: Mammalian-Animal	Positive

methanol: Based on available data, the classification criteria are not met.
butane-1,4-diol: Based on available data, the classification criteria are not met.
formaldehyde: Genetic toxicity: Positive.
melamine: Based on available data, the classification criteria are not met.

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

methanol: Based on available data, the classification criteria are not met.
butane-1,4-diol: Based on available data, the classification criteria are not met.

Formaldehyde is classified as a category 1B carcinogen by EU (Suspected of causing cancer in humans). The classification is mainly based on carcinogenic effects demonstrated in animal experiments, but also on experience from occupational use indicating, but not proving, increased risk of cancer in humans. The actual risk is a rare type of cancer in the nasopharyngeal area (upper part of the throat, behind the nose).

Animal experiments have demonstrated that the cancer risk has a strong link to high and repeated doses of formaldehyde, with an effect threshold at 2 ppm. This is the basis for the derived no effect level (DNEL) for occupational use of 0,3 ppm. Exposure below this level gives limited or no risk of adverse effects.

Product Conclusion/ Summary : May cause cancer. Risk of cancer depends on duration and level of exposure.

Reproductive toxicity

methanol: Based on available data, the classification criteria are not met.
butane-1,4-diol: Based on available data, the classification criteria are not met.
formaldehyde: It is not expected that formaldehyde reaches the reproductive organs and there is no evidence for effects on fertility and gonads in experimental animals after long-term oral or inhalation exposure.
melamine: Suspected of damaging fertility.

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

SECTION 11: Toxicological information

Teratogenicity

 methanol: Based on available data, the classification criteria are not met.
 butane-1,4-diol: Based on available data, the classification criteria are not met.
 formaldehyde: There is no evidence for adverse effects of formaldehyde on embryo and fetal development as dose levels inducing local maternal effects and secondary decrease in body weights and growth.
 melamine: No known significant effects or critical hazards.

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
 methanol	Category 1	-	blood system, central nervous system (CNS), optic nerve
butane-1,4-diol	Category 3	-	Narcotic effects
formaldehyde	Category 3	-	Respiratory tract irritation
ε-caprolactam	Category 3	-	Respiratory tract irritation

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (repeated exposure)

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

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Aspiration hazard

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Potential Adverse effects

Inhalation : Vapour may be irritating to eyes and respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : May cause an allergic skin reaction.
 Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
 Adverse symptoms may include the following:
 irritation
 redness

Interactive effects : No specific data.

Other information : No specific data.

SECTION 12: Ecological information

12.1 Toxicity

SECTION 12: Ecological information

Product/ingredient name	Result	Species	Exposure
methanol	EC50 22000 mg/l Fresh water	Algae - Selenastrum capricornutum	96 hours Static
	Acute EC50 >10000 mg/l Fresh water	Daphnia - Daphnia magna	48 hours Static
	Acute LC50 15400 mg/l Fresh water	Fish - Lepomis macrochirus	96 hours Flow through
	Chronic NOEC 208 mg/l Fresh water	Daphnia	21 days Static
	Chronic NOEC 450 mg/l Fresh water	Fish	28 days Static
butane-1,4-diol	EC50 >500 mg/l	Algae	72 hours
	EC50 80 mg/l Marine water	Daphnia	48 hours
	LC50 >30000 mg/l	Fish	96 hours
	NOEC 76 mg/l	Algae	72 hours
	NOEC >85 mg/l	Daphnia	21 days
formaldehyde	EC50 4,89 mg/l Fresh water	Algae - Scenedesmus subspicatus	72 hours
	Acute EC50 5,8 mg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 6,7 mg/l Marine water	Fish - Morone saxatilis	96 hours Static
ε-caprolactam	EC50 >1000 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	72 hours Static
	NOEC 1737 mg/l Fresh water	Micro-organism - Pseudomonas putida	17 hours Static
	Acute EC50 >1000 mg/l Fresh water	Daphnia - Daphnia magna	48 hours Static
	Acute LC50 >100 mg/l Fresh water	Fish - Oryzias latipes	96 hours Semi-static
	Chronic NOEC 100 mg/l Fresh water	Daphnia - Daphnia magna	21 days Semi-static
melamine	EC50 325 mg/l	Algae	96 hours
	NOEC 98 mg/l Fresh water	Algae	96 hours Static
	Acute EC50 200 mg/l Fresh water	Daphnia - Daphnia Magna	48 hours Static
	Chronic NOEC 11 mg/l Fresh water	Daphnia	21 days
	Chronic NOEC >5,1 mg/l Fresh water	Fish - Oncorhynchus mykiss	Semi-static 36 days

methanol: No known significant effects or critical hazards.
formaldehyde: Toxic to aquatic organisms.

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
methanol	-	83 to 91 % - Readily - 3 days	-	Fresh water
	-	71 to 83 % - Readily - 5 days	BOD/ThOD	Sediment
	-	69 to 97 % - 5 days	O ₂ Consumption	Sewage
	-	53,4 % - 5 days	-	Marine water
	-	46,3 % - 5 days	-	-
butane-1,4-diol	-	100 % - Readily - 14 days	-	-
	Anaerobic biodegradation OECD 303 A	100 % - 4 days	Degradation	Anaerobic sludge
	OECD 301 C	99,5 % - 160 days	Degradation	Activated sludge
formaldehyde	OECD 301 C	97 % - Readily - 14 days	TOC removal	Industrial Adapted

SECTION 12: Ecological information

ε-caprolactam	OECD 301 D	90 % - Readily - 28 days	30 mg/l O ₂ Consumption	-
	OECD 301C Ready Biodegradability - Modified MITI Test (I)	82 % - Readily - 14 days	-	-
melamine	-	0 % - 14 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
methanol	-	50%; 17.2 day(s)	Readily
butane-1,4-diol	-	-	Readily
formaldehyde	-	-	Readily
ε-caprolactam	-	-	Readily
melamine	-	-	Not readily

methanol: Readily biodegradable
 formaldehyde: Readily biodegradable
 ε-caprolactam: Readily biodegradable

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
methanol	-0,77	<10	low
butane-1,4-diol	-0,88	3,16	low
formaldehyde	0,35	0,396	low
ε-caprolactam	0,12	-	low
melamine	-1,22	<3.8	low

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

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

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

SECTION 13: Disposal considerations

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

13.1 Waste treatment methods

Product

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

Hazardous waste : Yes.

Waste catalogue

SECTION 13: Disposal considerations

Waste code	Waste designation
08 04 09*	waste adhesives and sealants containing organic solvents or other hazardous 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.
- 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. 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	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

- 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

SECTION 15: Regulatory information

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Restricted to professional users.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

Product/ingredient name	List name	Name on list	Classification	Notes
Formaldehyde	UK Occupational Exposure Limits EH40 - WEL	formaldehyde; methanal	Carc.	-

EU regulations

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.

Inventory list

Australia : All components are listed or exempted.
Canada : All components are listed or exempted.
China : All components are listed or exempted.
Eurasian Economic Union : **Russian Federation inventory**: Not determined.
Japan : **Japan inventory (CSCL)**: All components are listed or exempted.
Japan inventory (ISHL): Not determined.
New Zealand : All components are listed or exempted.
Philippines : Not determined.
Republic of Korea : Not determined.
Taiwan : All components are listed or exempted.
Thailand : Not determined.
Turkey : Not determined.
United States : All components are active or exempted.
Viet Nam : Not determined.

SECTION 15: Regulatory information

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
Skin Sens. 1, H317	Calculation method
Carc. 1B, H350	Calculation method

Full text of abbreviated H statements

H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H361f	Suspected of damaging fertility.
H370	Causes damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.

Full text of classifications

Acute Tox. 2	ACUTE TOXICITY - Category 2
Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Carc. 1B	CARCINOGENICITY - Category 1B
Carc. 2	CARCINOGENICITY - Category 2
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
Muta. 2	GERM CELL MUTAGENICITY - Category 2
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 1	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 1

SECTION 16: Other information

STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3
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Date of issue/ Date of revision

: 22.08.2024

Date of previous issue

: 03.02.2023

Previous product name

: Not available.

Version

: 0.1