



# SAFETY DATA SHEET

## Prefere 5835

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

#### 1.1 Product identifier

Product name : Prefere 5835

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

Use of the substance/  
mixture : Industrial/Professional Use: Hardener. 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 Regulation (EC) No. 1272/2008 [CLP/GHS]

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Acute Tox. 4, H302  
Acute Tox. 4, H332  
Skin Irrit. 2, H315  
Eye Dam. 1, H318  
Skin Sens. 1, H317  
Muta. 2, H341  
Carc. 1B, H350  
STOT RE 2, H373

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.

## SECTION 2: Hazards identification

### 2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 + H332 - Harmful if swallowed or if inhaled.  
 H318 - Causes serious eye damage.  
 H315 - Causes skin irritation.  
 H317 - May cause an allergic skin reaction.  
 H350 - May cause cancer.  
 H341 - Suspected of causing genetic defects.  
 H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements : P201 - Obtain special instructions before use.  
 P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection.  
 P260 - Do not breathe vapour.  
 P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician.  
 P405 - Store locked up.  
 P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : Ethanediol; ethylene glycol  
 Paraformaldehyde  
 formaldehyde

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

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
Ethanediol; ethylene glycol	REACH #: 01-2119456816-28 EC: 203-473-3 CAS: 107-21-1 Index: 603-027-00-1	≥50 - ≤75	Acute Tox. 4, H302 STOT RE 2, H373 (kidneys) (oral)	[1] [2]
Paraformaldehyde	REACH #: Exempted CAS: 30525-89-4	≥25 - ≤50	Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 2, H351	[1]

**SECTION 3: Composition/information on ingredients**

formaldehyde	REACH #: 01-2119488953-20 EC: 200-001-8 CAS: 50-00-0 Index: 605-001-00-5	≤2,3	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1B, H350 STOT SE 3, H335	[1] [2]
methanol	REACH #: 01-2119433307-44 EC: 200-659-6 CAS: 67-56-1 Index: 603-001-00-X	≤1	Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT SE 1, H370 (central nervous system (CNS), optic nerve)  <b>See Section 16 for the full text of the H statements declared above.</b>	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs 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
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

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. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Move exposed person to fresh air. If breathing is difficult, give oxygen. If necessary, call a poison center or physician.
- Skin contact** : Get medical attention immediately. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation occurs.
- Ingestion** : Get medical attention immediately. 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. Chemical burns must be treated promptly by a physician.
- 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.

## SECTION 4: First aid measures

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

#### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Harmful if inhaled. May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system. Vapour may be irritating to eyes and respiratory system.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. May cause burns to mouth, throat and stomach.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
tearing eye
- 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** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, 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  
metal oxide/oxides

### 5.3 Advice for firefighters

- Special precautions 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## 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. Do not breathe 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. Contaminated absorbent material may pose the same hazard as the spilt product.

- 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 breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.
- 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.

## SECTION 7: Handling and storage

Industrial sector specific solutions : Not available.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
ethanediol; ethylene glycol	<p><b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b></p> <p>TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Particulate                      STEL: 104 mg/m<sup>3</sup> 15 minutes. Form: Vapour                      TWA: 52 mg/m<sup>3</sup> 8 hours. Form: Vapour                      STEL: 40 ppm 15 minutes. Form: Vapour                      TWA: 20 ppm 8 hours. Form: Vapour</p>
formaldehyde	<p><b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b></p> <p>STEL: 2,5 mg/m<sup>3</sup> 15 minutes.                      STEL: 2 ppm 15 minutes.                      TWA: 2 ppm 8 hours.                      TWA: 2,5 mg/m<sup>3</sup> 8 hours.</p>
methanol	<p><b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b></p> <p>STEL: 333 mg/m<sup>3</sup> 15 minutes.                      STEL: 250 ppm 15 minutes.                      TWA: 266 mg/m<sup>3</sup> 8 hours.                      TWA: 200 ppm 8 hours.</p>

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

#### DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
ethanediol; ethylene glycol	DNEL	Long term Inhalation	35 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Dermal	106 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	53 mg/kg bw/day	Consumers	Systemic
formaldehyde	DNEL	Long term Inhalation	7 mg/m <sup>3</sup>	Consumers	Local
	DNEL	Short term Inhalation	0,6 ppm	Workers	Local
	DNEL	Long term Dermal	240 mg/kg bw/day	Workers	Systemic

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

methanol	DNEL	Long term Inhalation	9 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Dermal	37 µg/cm <sup>2</sup>	Workers	Local
	DNEL	Long term Inhalation	0,3 ppm	Workers	Local
	DNEL	Long term Dermal	102 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	2,6 ppm	Consumers	Systemic
	DNEL	Long term Oral	4,1 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Dermal	12 µg/cm <sup>2</sup>	Consumers	Local
	DNEL	Long term Inhalation	0,1 ppm	Consumers	Local
	DNEL	Short term Dermal	40 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	260 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Short term Inhalation	260 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Dermal	40 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	260 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Inhalation	260 mg/m <sup>3</sup>	Workers	Local
	DNEL	Short term Dermal	8 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Inhalation	50 mg/m <sup>3</sup>	Consumers	Systemic
	DNEL	Short term Oral	8 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Inhalation	50 mg/m <sup>3</sup>	Consumers	Local
	DNEL	Long term Dermal	8 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	50 mg/m <sup>3</sup>	Consumers	Systemic
DNEL	Long term Oral	8 mg/kg bw/day	Consumers	Systemic	
DNEL	Long term Inhalation	50 mg/m <sup>3</sup>	Consumers	Local	

**PNECs**

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
ethanediol; ethylene glycol	PNEC	Fresh water	10 mg/l	-
	PNEC	Marine	1 mg/l	-
	PNEC	Sewage Treatment Plant	199,5 mg/l	-
formaldehyde	PNEC	Fresh water sediment	20,9 mg/l	-
	PNEC	Soil	1,53 mg/kg	-
	PNEC	Fresh water	0,44 mg/l	Assessment Factors
	PNEC	Marine	0,44 mg/l	Assessment Factors
	PNEC	Intermittent release	4,44 mg/l	Assessment Factors
	PNEC	Fresh water sediment	2,3 mg/kg dwt	Equilibrium Partitioning
	PNEC	Marine water sediment	2,3 mg/kg dwt	Equilibrium Partitioning
	PNEC	Soil	0,2 mg/kg dwt	Equilibrium Partitioning
	PNEC	Sewage Treatment Plant	0,19 mg/l	Assessment Factors
methanol	PNEC	Fresh water	20,8 mg/l	Assessment Factors
	PNEC	Marine	2,08 mg/l	Assessment Factors
	PNEC	Intermittent release	1540 mg/l	Assessment Factors



## SECTION 8: Exposure controls/personal protection

	PNEC	Fresh water sediment	77 mg/kg dwt	Equilibrium Partitioning Equilibrium Partitioning Equilibrium Partitioning Assessment Factors
	PNEC	Soil	100 mg/kg wwt	
	PNEC	Marine water sediment	7,7 mg/kg dwt	
	PNEC	Sewage Treatment Plant	100 mg/l	

### 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: Tightly-fitting goggles

**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.  
Recommended : Protective Index 6 / Breakthrough time >480 minutes: neoprene rubber 0.7 mm thickness or nitrile rubber 0.4 mm thickness

**Other skin protection** : Wear work clothing with long sleeves. Cotton or cotton/synthetic overalls or coveralls are normally suitable.  
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: 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

### 9.1 Information on basic physical and chemical properties

**Physical state** : Liquid.  
**Colour** : Brown. [Light]  
**Odour** : Formaldehyde.  
**Odour threshold** : Not available.

**pH** : Not available.  
**Melting point/freezing point** : Not available.  
**Initial boiling point and boiling range** : Not available.  
**Flash point** : Not available.  
**Evaporation rate** : Not available.



## SECTION 9: Physical and chemical properties

Flammability (solid, gas)	: Not available.
Upper/lower flammability or explosive limits	: Not available.
Vapour pressure	: Not available.
Vapour density	: Not available.
Relative density	: Not available.
Density (liquid)	: 1,17 g/cm <sup>3</sup> [25°C]
Solubility	: Not soluble in water
Partition coefficient: n-octanol/ water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Dynamic: 4500 to 6000 mPa·s [25 °C]
Explosive properties	: Not available.
Oxidising properties	: Not available.

### 9.2 Other information

VOC content (Without volume exclusion)	: 87,3 % (w/w) 1021,7 g/l
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## 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	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Potential Adverse effects

<b>Inhalation</b>	: Harmful if inhaled. May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system. Vapour may be irritating to eyes and respiratory system. Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Adverse symptoms may include the following: respiratory tract irritation tearing eye
<b>Ingestion</b>	: Harmful if swallowed. May cause burns to mouth, throat and stomach. Adverse symptoms may include the following: stomach pains

## SECTION 11: Toxicological information

**Skin contact** : Causes skin irritation. 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:  
 pain or irritation  
 redness  
 blistering may occur

**Eye contact** : Causes serious eye damage.  
 Adverse symptoms may include the following:  
 pain  
 watering  
 redness

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ethanediol; ethylene glycol	LC50 Inhalation Dusts and mists	Rat	>2,5 mg/l	6 hours
	LD50 Dermal	Mouse - Male, Female	>3500 mg/kg	-
	LD50 Oral	Rat - Male, Female	7712 mg/kg	-
Paraformaldehyde	LC50 Inhalation Dusts and mists	Rat	1,07 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	680 mg/kg	-
formaldehyde	LC50 Inhalation Gas.	Rat	<463 mg/l	4 hours
	LD50 Oral	Rat - Male	460 mg/kg	-
methanol	LC50 Inhalation Vapour	Rat - Male, Female	128,2 mg/l	4 hours
		Rabbit	17100 mg/kg	-

**ethanediol**: Harmful if swallowed.

**Paraformaldehyde**: Harmful if swallowed or if inhaled.

**Formaldehyde**: Toxic if swallowed or in contact with skin. Fatal if inhaled.

**methanol**: Toxic by inhalation, in contact with skin and if swallowed.

### Acute toxicity estimates

Product	ATE value
Oral	566,8 mg/kg
Dermal	13454,5 mg/kg
Inhalation (gases)	29307,4 ppm
Inhalation (vapours)	461,6 mg/l
Inhalation (dusts and mists)	3,529 mg/l

**Product Conclusion/ Summary** : Harmful if swallowed. Harmful if inhaled.

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
formaldehyde	Skin - Irritant	Rat	-	-	7 days
	Eyes - Irritant	Rabbit	-	-	-
	Skin - Oedema	Rabbit	3	-	24 hours
	Eyes - Cornea opacity	Rat	4	-	7 days

**Skin** : **ethanediol**: Mild irritant  
**Paraformaldehyde**: Irritating to skin.  
**Formaldehyde**: Causes burns.  
**methanol**: Based on available data, the classification criteria are not met.

**SECTION 11: Toxicological information**

**Eyes** : **ethanediol**: Mildly irritating to the eyes.  
**Paraformaldehyde**: Irritating to eyes.  
**Formaldehyde**: Causes serious eye damage.  
**methanol**: Based on available data, the classification criteria are not met.

**Respiratory** : **Formaldehyde**: Irritating to respiratory system.

**Product Conclusion/ Summary** : Causes skin irritation. Causes serious eye damage.

**Sensitisation**

Product/ingredient name	Route of exposure	Species	Result
ethanediol; ethylene glycol formaldehyde  methanol	skin	Human	Not sensitizing
	skin	Mouse	Sensitising
	skin	Guinea pig	Sensitising
	Respiratory	Guinea pig	Not sensitizing
	skin	Guinea pig	Not sensitizing

**Skin** : **ethanediol**: Not sensitizing  
**Paraformaldehyde**: Sensitising  
**Formaldehyde**: Sensitising  
**methanol**: Not sensitizing

**Respiratory** : **ethanediol**: Not sensitizing  
**Formaldehyde**: Not sensitizing  
**methanol**: Not sensitizing

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

**Chronic toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
ethanediol; ethylene glycol  formaldehyde	Sub-acute NOAEL Dermal	Dog	2 mg/kg	4 weeks; 7 days per week
	Chronic LOAEL Oral	Rat - Male, Female	82 mg/kg	105 weeks
methanol	Chronic NOAEC Inhalation Gas.	Rat - Male, Female	1 ppm	26 weeks
	Sub-acute NOAEC Inhalation Gas.	Rat - Male	2 ppm	6 weeks
	Sub-acute LOAEC Inhalation Gas.	Rat - Male	6 ppm	6 weeks
	Chronic NOAEL Oral	Rat - Male, Female	466 to 529 mg/kg Repeated dose	104 weeks
	Chronic NOEC Inhalation Vapour	Rat - Male, Female	0,13 mg/l	12 months
	Chronic NOAEC Inhalation Vapour	Rat - Male, Female	1,3 mg/l	108 days
	Chronic NOAEC Inhalation Vapour	Rat	1,33 mg/l Continuous	17 days; 22,7 hours per day

**Mutagenicity**

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

**SECTION 11: Toxicological information**

**ethanediol:** Based on available data, the classification criteria are not met.  
**Formaldehyde:** Genetic toxicity: Positive.  
**methanol:** Based on available data, the classification criteria are not met.

**Product Conclusion/ Summary** : Suspected of causing genetic defects.

**Carcinogenicity**

**ethanediol:** Based on available data, the classification criteria are not met.  
**Paraformaldehyde:** Suspected of causing cancer.  
**methanol:** Based on available data, the classification criteria are not met.

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

**Reproductive toxicity**

**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.  
**methanol:** Based on available data, the classification criteria are not met.

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

**Teratogenicity**

**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.  
**methanol:** Based on available data, the classification criteria are not met.

**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
formaldehyde	Category 3	Not applicable.	Respiratory tract irritation
methanol	Category 1	All	central nervous system (CNS) and optic nerve

**Specific target organ toxicity (repeated exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
ethanediol; ethylene glycol	Category 2	Oral	kidneys

**Aspiration hazard**

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

**Interactive effects** : No specific data.

**SECTION 11: Toxicological information**

Other information : No specific data.

**SECTION 12: Ecological information**

**12.1 Toxicity**

Product/ingredient name	Result	Species	Exposure
ethanediol; ethylene glycol  Paraformaldehyde formaldehyde  methanol	Acute EC20 >1995 mg/l Fresh water	Micro-organism	30 minutes Static 96 hours
	Acute EC50 6500 to 13000 mg/l	Aquatic plants - Selenastrum capricornutum	96 hours
	Acute EC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours Static
	Acute LC50 72860 mg/l Fresh water	Fish - Pimephales promelas	96 hours Static
	Chronic NOEC 15380 mg/l LC50 60 mg/l EC50 4,89 mg/l Fresh water	Fish - Pimephales promelas Fish Algae - Scenedesmus subspicatus	7 days 96 hours 72 hours
	Acute EC50 5,8 mg/l Fresh water Acute LC50 6,7 mg/l Fresh water	Daphnia - Daphnia pulex Fish - Morone saxatilis	48 hours 96 hours Static
	EC50 22000 mg/l Fresh water	Algae - Selenastrum capricornutum	96 hours Static
	IC50 8800 mg/l Fresh water	Micro-organism - Nitrosomonas sp.	24 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

**Conclusion/Summary** : **ethanediol**: Based on available data, the classification criteria are not met.  
**Formaldehyde**: Toxic to aquatic organisms.  
**methanol**: No known significant effects or critical hazards.

**12.2 Persistence and degradability**

Product/ingredient name	Test	Result	Dose	Inoculum
ethanediol; ethylene glycol  formaldehyde	OECD 301C 301C Ready Biodegradability - Modified MITI Test (I)	96 % - 14 days	-	-
	Anaerobic biodegradation OECD 303 A	100 % - 4 days 99,5 % - 160 days	Degradation Degradation	Anaerobic sludge Activated sludge Industrial Adapted
	OECD 301 C OECD 301 D	97 % - Readily - 14 days 90 % - Readily - 28 days	TOC removal 30 mg/l O <sub>2</sub> Consumption	- -
methanol	-	83 to 91 % - Readily - 3 days	-	Fresh water Sediment
	-	71 to 83 % - Readily - 5 days	BOD/ThOD	Sewage
	-	69 to 97 % - 5 days	O <sub>2</sub> Consumption	Marine water
	-	53,4 % - 5 days	-	-
	-	46,3 % - 5 days	-	-

## SECTION 12: Ecological information

**Conclusion/Summary** : **ethanediol**: Readily biodegradable  
**Formaldehyde**: Readily biodegradable  
**methanol**: Readily biodegradable

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
ethanediol; ethylene glycol	-	-	Readily
formaldehyde	-	-	Readily
methanol	-	50%; 17.2 day(s)	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
ethanediol; ethylene glycol	-1,36	-	low
formaldehyde	0,35	0,396	low
methanol	-0,77	<10	low

### 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

### 12.5 Results of PBT and vPvB assessment

**PBT** : Not applicable.

**vPvB** : Not applicable.

**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.

#### 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 spilled 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.
Additional information	-	-	-	-

**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 Annex II of Marpol and the IBC Code** : Not available.

## SECTION 15: Regulatory information

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

**EU Regulation (EC) No. 1907/2006 (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.

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

Restricted to professional users.

**Other EU regulations**

**Industrial emissions (integrated pollution prevention and control) - Air**

Not listed

**Industrial emissions (integrated pollution prevention and control) - Water**

Not listed

**Ozone depleting substances (1005/2009/EU)**

Not listed.

**Prior Informed Consent (PIC) (649/2012/EU)**

Not listed.

**Seveso Directive**

This product is not controlled under the Seveso Directive.



## SECTION 15: Regulatory information

### National regulations

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

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	: <input checked="" type="checkbox"/> Not determined.
Canada	: <input checked="" type="checkbox"/> Not determined.
China	: <input checked="" type="checkbox"/> Not determined.
Europe	: Not determined.
Japan	: <input checked="" type="checkbox"/> <b>Japan inventory (ENCS):</b> Not determined. <b>Japan inventory (ISHL):</b> Not determined.
Malaysia	: <input checked="" type="checkbox"/> Not determined.
New Zealand	: <input checked="" type="checkbox"/> Not determined.
Philippines	: <input checked="" type="checkbox"/> Not determined.
Republic of Korea	: <input checked="" type="checkbox"/> Not determined.
Taiwan	: <input checked="" type="checkbox"/> Not determined.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: <input checked="" type="checkbox"/> Not determined.
United States	: <input checked="" type="checkbox"/> Not determined.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

**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  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

**SECTION 16: Other information**

Classification	Justification
Acute Tox. 4, H302	Calculation method
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Muta. 2, H341	Calculation method
Carc. 1B, H350	Calculation method
STOT RE 2, H373	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.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H370	Causes damage to organs.
H373 (oral)	May cause damage to organs through prolonged or repeated exposure if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure.

**Full text of classifications [CLP/GHS]**

Acute Tox. 2, H330	ACUTE TOXICITY (inhalation) - Category 2
Acute Tox. 3, H301	ACUTE TOXICITY (oral) - Category 3
Acute Tox. 3, H311	ACUTE TOXICITY (dermal) - Category 3
Acute Tox. 3, H331	ACUTE TOXICITY (inhalation) - Category 3
Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
Acute Tox. 4, H332	ACUTE TOXICITY (inhalation) - Category 4
Carc. 1B, H350	CARCINOGENICITY - Category 1B
Carc. 2, H351	CARCINOGENICITY - Category 2
Eye Dam. 1, H318	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Flam. Liq. 2, H225	FLAMMABLE LIQUIDS - Category 2
Muta. 2, H341	GERM CELL MUTAGENICITY - Category 2
Skin Corr. 1B, H314	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317	SKIN SENSITISATION - Category 1
STOT RE 2, H373 (oral)	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (oral) - Category 2
STOT RE 2, H373	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 1, H370	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 1
STOT SE 3, H335	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

**Date of issue/ Date of revision** : 27.04.2018

**Date of previous issue** : 18.11.2015

**Previous product name** : Not available.

**Version** : 5