

**CHO-BOND® 1086**

SDS No: PHC-493 EU

**SDS Revision Date (dd/mm/yyyy): 26/01/2024**

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## SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

**1.1 Product identifier : CHO-BOND® 1086**

**Product Code(s) : CHO-BOND® 1086**

**SDS No. : PHC-493 EU**

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

- : Adhesion promoter /Primers
- Use pattern: Electronics industry - Industrial use.
- Refer to restrictions found in REACH Annex XVII item 48.
- Refer to restrictions found in REACH Annex XVII item 69.
- Refer to restrictions found in REACH Annex XVII item 75.

**1.3 Details of the supplier of the safety data sheet:**

**Parker Hannifin Ltd.**

Engineered Materials Group  
Chomerics Division Europe  
Unit 6 Century Point  
Halifax Road  
High Wycombe  
Bucks, HP12 3SL  
United Kingdom  
E-mail: [chomerics\\_europe@parker.com](mailto:chomerics_europe@parker.com)  
Website: [www.chomerics.com](http://www.chomerics.com)  
Telephone: 044 (0) 1494 455 400

Parker Hannifin Manufacturing France SAS  
ZAC des Epineaux  
7 avenue Louis Blériot  
95740 Frépillon, France  
Telephone : 033 (01) 34 32 39 00  
Email: [parker.france@parker.com](mailto:parker.france@parker.com)  
Website: [www.parkerfrance.fr](http://www.parkerfrance.fr)

**Telephone : 044 (0) 1494 455 400**

**1.4 Emergency Telephone Number**

- : INFOTRAC: (800) 535-5053 (Within Continental US and Canada); + 001 (352) 323-3500 (International)
- Poisons Information Centre
- The United Kingdom NHS 111
- The Netherlands +31887558561
- France +33383852192
- Germany +4930184120
- Spain +34917689800
- Poland +48422538400
- Sweden +46104566750
- Italy
- 06 68593726 (CAV "Osp. Pediatrico Bambino Gesù" Dip. Emergenza - Roma) 800 183459 (Az. Osp. Univ. Foggia - Foggia)
- 081 5453333 (Az. Osp. "A. Cardarelli" - Napoli)
- 06 49978000 (CAV Policlinico "Umberto I" - Roma)
- 06 3054343 (CAV Policlinico "A. Gemelli" - Roma)
- 055 7947819 (Az. Osp. "Careggi" U.O. Tossicologia Medica - Firenze)
- 0382 24444 (CAV Centro Nazionale di Informazione Tossicologica - Pavia) 02 66101029 (Osp. Niguarda Ca' Granda - Milano)
- 800 883300 (Azienda Ospedaliera Papa Giovanni XXII - Bergamo)

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### 1.5 National Contact

: E-mail: [chomerics\\_europe@parker.com](mailto:chomerics_europe@parker.com)  
Website: [www.chomerics.com](http://www.chomerics.com)

## SECTION 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Clear liquid. Alcohol odour.

Most important hazards:

Highly flammable. May be ignited by open flame. Harmful if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Repeated exposure may cause skin dryness or cracking. Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. See Section 12 for more environmental information.

This mixture is classified as hazardous in accordance with Regulation (EC) No 1272/2008. Classification:

Flammable liquid - Category 2; H225

Acute toxicity (Oral) - Category 4; H302

Specific target organ toxicity, single exposure - Category 1; H370

EUH066

### 2.2 Label elements

*Hazard pictogram(s)*



Hazardous components which must be listed on the label: Methanol.

Signal word:

DANGER!

Hazard statements:

H225 - Highly flammable liquid and vapour.

H302 - Harmful if swallowed.

H370 - Causes damage to the optic nerves (eyes) if swallowed.

Precautionary statements:

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.

P260 - Do not breathe vapour.

P280 - Wear protective gloves and eye/face protection.

P370 + P378 - In case of fire: Use carbon dioxide, dry sand, dry chemical or alcohol-resistant foam to extinguish.

P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor/physician.

P501 - Dispose of contents/container in accordance with local regulation.

Supplemental Hazard Statements:

EUH066 - Repeated exposure may cause skin dryness or cracking.

### 2.3 Other hazards

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Other hazards which do not result in classification:

Burning produces obnoxious and toxic fumes. Vapours are heavier than air and may spread along floors. Flash back possible over considerable distance. May be mildly irritating to skin, eyes and respiratory system. May cause gastrointestinal irritation. In extremely high concentrations, may also cause nausea, vomiting, dizziness, drowsiness and other symptoms of central nervous system depression. Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.

Endocrine disrupting properties: None known.

PBT assessment:

This mixture contains no substance(s) above reportable levels which are considered to be persistent, bioaccumulating nor toxic (PBT), or very persistent and very bioaccumulating (vPvB).

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Not applicable

#### 3.2 Mixtures

Chemical nature - Mixture of: Alcohols; Solvents.

The following substances shall be indicated according to legislation:

Substance name	CAS No	EC No.	Reach Registration No.	% Weight	Classification according to Regulation (EC) nr. 1272/2008	SCL, M-factor, ATE
Ethanol	64-17-5	200-578-6	Not available	70.0 - 75.0	Flam. Liq. 2; H225	Not applicable.
Methanol	67-56-1	200-659-6	Not available	10.0 - 15.0	Flam. Liq. 2; H225 *Acute Tox. 3; H301 *Acute Tox. 3; H311 *Acute Tox. 3; H331 STOT SE 1; H370	ATE dermal = 2620.54 mg/kg ATE inhalation (vapours) = 27.33 mg/L ATE oral = 2000 mg/kg
4-methylpentan-2-one	108-10-1	203-550-1	Not available	0.1 - 0.9	Flam. Liq. 2; H225 *Acute Tox. 4; H332 Eye Irrit. 2; H319 STOT SE 3; H335 Carc.2 ;H351 EUH066	ATE inhalation (vapours) = 1366.12 mg/L

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Toluene	108-88-3	203-625-9	Not available	0.1 - 0.9	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Repr. 2; H361d STOT RE 2; H373	Not applicable.
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The above CLP Acute toxicity Classifications for the following chemicals are 'Minimum Classifications': Methanol; 4-methylpentan-2-one.

For the full text of the H phrases not mentioned in this Section or in Section 2, see Section 16.

### SECTION 4. FIRST-AID MEASURES

#### 4.1 Description of first aid measures

- Ingestion* : IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth. Never give anything by mouth to an unconscious person.
- Inhalation* : If inhaled: Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stops, provide artificial respiration. IF exposed: Call a POISON CENTRE or doctor/physician.
- Skin contact* : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If exposed: Call a POISON CENTER or doctor/physician.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids. If exposed: Call a POISON CENTER or doctor/physician.

#### 4.1.2 Self-protection for the first aider

- : Wear protective gloves and eye/face protection.

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

- : Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache). May cause blindness if swallowed - cannot be made non-poisonous. Causes damage to the optic nerves (eyes) if swallowed. Affected person could experience a latent period of no symptoms, followed by blurred vision and possibly blindness. May be mildly irritating to skin, eyes and respiratory system. Exposure may cause temporary irritation, redness or discomfort. Symptoms may include upper respiratory irritation, coughing and breathing difficulties. Prolonged or repeated contact may cause drying, cracking and defatting of the skin. Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.

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

- : Provide general supportive measures and treat symptomatically.

### SECTION 5. FIRE-FIGHTING MEASURES

#### 5.1 Extinguishing media

##### *Suitable extinguishing media*

- : Carbon dioxide (CO2); Dry chemical; Alcohol resistant foam.

##### *Unsuitable extinguishing media*

- : Do not use a solid water stream as it may scatter and spread fire. Water may be ineffective because it may not cool product below the flashpoint.

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### 5.2 Special hazards arising from the substance or mixture

- : Highly flammable liquid and vapour.. Will ignite when exposed to heat, flame and other sources of ignition. Vapours are heavier than air and may spread along floors. Flash back possible over considerable distance. The pressure in sealed containers can increase under the influence of heat. Burning produces obnoxious and toxic fumes. In the event of fire the following can be released: Carbon oxides; formaldehyde; Nitrogen oxides (NOx)

### 5.3 Advice for firefighters

#### *Protective equipment for fire-fighters*

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

#### *Special fire-fighting procedures*

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

- : Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Wear appropriate protective equipment.

### 6.2 Environmental precautions

- : Prevent product from entering drains, sewers, waterways and soil.

### 6.3 Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use only non-sparking tools. For spilled liquids: absorb spill with inert, non-combustible material such as sand, then place into suitable containers. Do not use combustible absorbents, such as sawdust. Pick up and transfer to properly labeled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities.

### 6.4 Reference to other sections

- : Refer to protective measures listed in sections 7 and 8. Refer to Section 13 for disposal of contaminated material.

## SECTION 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

- : Use with adequate ventilation. Wear suitable protective equipment during handling. Wear protective gloves and eye/face protection. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flame - No smoking. Ground/Bond container and receiving equipment. Use explosion-proof electrical and ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

### 7.2 Conditions for safe storage, including any incompatibilities

- : Store in cool/well-ventilated place. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area. Do not store near any incompatible materials (see Section 10).

### 7.3 Specific end use(s)

- : Primers - Conductive adhesive.

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### SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### 8.1 Control Parameters

<b>Exposure Limits:</b>			
<b>Chemical Name</b>	<b>Exposure Limits</b>	<b>Type</b>	<b>Notes</b>
<b>Ethanol</b>	None known.	European Union (OEL)	None.
	1000 ppm (1900 mg/m <sup>3</sup> ) (TWA)	Finland (OEL)	N/Av
	1000 ppm (1900 mg/m <sup>3</sup> ) (TWA) 5000 ppm (9500 mg/m <sup>3</sup> ) (STEL)	France (OEL)	None.
	500 ppm (960 mg/m <sup>3</sup> ) (TWA)	Germany (OEL)	(exposure factor 2)
	1900 mg/m <sup>3</sup> (TWA) 7600 mg/m <sup>3</sup> (STEL)	Hungary (OEL)	None.
	1900 mg/m <sup>3</sup> (TWA)	Poland (OEL)	None.
	1000 ppm (1910 mg/m <sup>3</sup> ) (TWA)	Spain (OEL)	None.
	500 ppm (1000 mg/m <sup>3</sup> ) (TWA) 1000 ppm (1900 mg/m <sup>3</sup> ) (STEL)	Sweden (OEL)	None.
	1000 ppm (1920 mg/m <sup>3</sup> ) (TWA) 3000 ppm (5760 mg/m <sup>3</sup> ) (STEL)	The United Kingdom (WELs)	None.
	<b>Methanol</b>	200 ppm (260 mg/m <sup>3</sup> ) (TWA)	European Union (OEL)
200 ppm (270 mg/m <sup>3</sup> ) (TWA) 250 ppm (330 mg/m <sup>3</sup> ) (STEL)		Finland (OEL)	Potential for cutaneous absorption
200 ppm (260 mg/m <sup>3</sup> ) (TWA) 1000 ppm (1300 mg/m <sup>3</sup> ) (STEL)		France (OEL)	Risk of cutaneous absorption
200 ppm (270 mg/m <sup>3</sup> ) (exposure factor 4) (TWA) 260 mg/m <sup>3</sup> (TWA)		Germany (OEL)	Skin notation
260 mg/m <sup>3</sup> (TWA)		Hungary (OEL)	Potential for cutaneous absorption
200 ppm (260 mg/m <sup>3</sup> ) (TWA)		Italy (OEL)	Skin - Potential for cutaneous absorption
100 ppm (133 mg/m <sup>3</sup> ) (TWA)		Netherlands (OEL)	Skin notation
100 mg/m <sup>3</sup> (TWA) 300 mg/m <sup>3</sup> (STEL)		Poland (OEL)	Skin notation
200 ppm (266 mg/m <sup>3</sup> ) (TWA)		Spain (OEL)	Skin - Potential for cutaneous absorption
200 ppm (266 mg/m <sup>3</sup> ) (TWA) 250 ppm (333 mg/m <sup>3</sup> ) (STEL)		The United Kingdom (WELs)	Potential for cutaneous absorption
<b>4-methylpentan-2-one</b>			

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	20 ppm (83 mg/m <sup>3</sup> ) (TWA) 50 ppm (208 mg/m <sup>3</sup> ) (STEL)	European Union (OEL)	None.
	20 ppm (80 mg/m <sup>3</sup> ) (TWA) 50 ppm (210 mg/m <sup>3</sup> ) (STEL)	Finland (OEL)	None.
	20 ppm (83 mg/m <sup>3</sup> ) (TWA) 50 ppm (208 mg/m <sup>3</sup> ) (STEL)	France (OEL)	None.
	20 ppm (83 mg/m <sup>3</sup> ) (exposure factor 2) (TWA)	Germany (OEL)	Skin notation
	83 mg/m <sup>3</sup> (TWA) 208 mg/m <sup>3</sup> (STEL)	Hungary (OEL)	None.
	20 ppm (83 mg/m <sup>3</sup> ) (TWA) 50 ppm (208 mg/m <sup>3</sup> ) (STEL)	Italy (OEL)	None.
	83 mg/m <sup>3</sup> (TWA) 200 mg/m <sup>3</sup> (STEL)	Poland (OEL)	None.
	20 ppm (83 mg/m <sup>3</sup> ) (TWA) 50 ppm (208 mg/m <sup>3</sup> ) (STEL)	Spain (OEL)	None.
	25 ppm LLV; 100 mg/m <sup>3</sup> LLV; 50 ppm STV; 200 mg/m <sup>3</sup> STV;	Sweden (OEL)	N/Av
	50 ppm (208 mg/m <sup>3</sup> ) (TWA) 100 ppm (416 mg/m <sup>3</sup> ) (STEL)	The United Kingdom (WELs)	Potential for cutaneous absorption
<b>Toluene</b>	50 ppm (192 mg/m <sup>3</sup> ) (TWA) 100 ppm (384 mg/m <sup>3</sup> ) (STEL)	European Union (OEL)	Possibility of significant uptake through the skin
	25 ppm (81 mg/m <sup>3</sup> ) (TWA) 100 ppm (380 mg/m <sup>3</sup> ) (STEL)	Finland (OEL)	Potential for cutaneous absorption
	20 ppm (76.8 mg/m <sup>3</sup> ) (TWA) 100 ppm (384 mg/m <sup>3</sup> ) (STEL)	France (OEL)	Risk of cutaneous absorption
	50 ppm (190 mg/m <sup>3</sup> ) (exposure factor 4) (TWA)	Germany (OEL)	Skin notation
	100 mg/m <sup>3</sup> (TWA) 380 mg/m <sup>3</sup> (STEL)	Hungary (OEL)	Potential for cutaneous absorption
	50 ppm (192 mg/m <sup>3</sup> ) (TWA)	Italy (OEL)	Skin - Potential for cutaneous absorption
	150 mg/m <sup>3</sup> (TWA) 384 mg/m <sup>3</sup> (STEL)	Netherlands (OEL)	None.
	100 mg/m <sup>3</sup> (TWA) 200 mg/m <sup>3</sup> (STEL)	Poland (OEL)	Skin notation
	50 ppm (192 mg/m <sup>3</sup> ) (TWA) 100 ppm (384 mg/m <sup>3</sup> ) (STEL)	Spain (OEL)	Skin - Potential for cutaneous absorption
	50 ppm (192 mg/m <sup>3</sup> ) (TWA) 100 ppm (384 mg/m <sup>3</sup> ) (STEL)	Sweden (OEL)	Skin notation
	50 ppm (191 mg/m <sup>3</sup> ) (TWA) 100 ppm (384 mg/m <sup>3</sup> ) (STEL)	The United Kingdom (WELs)	Potential for cutaneous absorption

### Biological Exposure Indices:

<u>Chemical Name</u>	<u>Biological Exposure Indices</u>	<u>Type</u>
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<b>Methanol</b>	15 mg/L, Determinant: Methanol, Specimen: Urine	Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4
	30 mg/L, Determinant: Methanol, Specimen: Urine	Germany. TRGS 903, BAT List (Biological Limit Values)
	15 mg/L, Determinant: Methanol (Background noise on non-exposed subjects, Non-specific (observed after the exposure to other subjects)), Specimen: Urine	France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065))
<b>4-methylpentan-2-one</b>	1 mg/L, Determinant: Isobutyl methyl ketone, Specimen: Urine	Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4
	2 mg/L, Determinant: Isobutyl methyl ketone, Specimen: Urine	France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065))
	3.5 mg/L, Determinant: 4-methylpentan-2-one, Specimen: Urine	Germany. TRGS 903, BAT List (Biological Limit Values)
	20 µmol/L, Determinant: 4-methylpentan-2-one, Specimen: Urine	UK. EH40 Biological Monitoring Guidance Values (BMGVs)
<b>Toluene</b>	0.5 mg/L, Determinant: o-Cresol, Specimen: Urine	Sweden
	1.6 g/g Creatinine, Determinant: Hippuric acid, Specimen: Urine	
	0.05 mg/L, Determinant: Toluene, Specimen: Blood	
	600 µg/L, Determinant: Toluene, Specimen: Blood	Germany. TRGS 903, BAT List (Biological Limit Values)
	1.5 mg/L, Determinant: o-Cresol (after hydrolysis), Specimen: Urine	
	500 nmol/l, Determinant: Toluene concentration, Specimen: Blood	Finland. HTP-arvot, App 2, Biological Limit Values, (BRA/BGV), Social Affairs and Ministry of Health
	1 mg/L, Determinant: Toluene (semi-quantitative (ambiguous)), Specimen: Blood	France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065))
2500 mg/g, Determinant: Hippuric acid (Background noise on non-exposed subjects, Non-specific (observed after the exposure to other subjects)), Specimen: Urine		



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### Biological Exposure Indices:

France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)

Methanol (CAS # 67-56-1)

15 mg/L, Determinant: Methanol (Background noise on non-exposed subjects, Non-specific (observed after the exposure to other subjects)), Specimen: Urine

4-methylpentan-2-one (CAS # 108-10-1)

2 mg/L, Determinant: Methyl isobutyl ketone, Specimen: Urine

Germany. TRGS 903, BAT List (Biological Limit Values)

Methanol (CAS # 67-56-1)

30 mg/L, Determinant: Methanol, Specimen: Urine

4-methylpentan-2-one (CAS # 108-10-1)

3.5 mg/L, Determinant: 4-methylpentan-2-one, Specimen: Urine

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

Methanol (CAS # 67-56-1)

15 mg/L, Determinant: Methanol, Specimen: Urine

4-methylpentan-2-one (CAS # 108-10-1)

1 mg/L, Determinant: Methyl isobutyl ketone, Specimen: Urine

UK. EH40 Biological Monitoring Guidance Values (BMGVs)

4-methylpentan-2-one (CAS # 108-10-1)

20 µmol/L, Determinant: 4-methylpentan-2-one, Specimen: Urine

### Derived No Effect Level (DNEL):

(CAS 64-17-5) general population oral systemic effects long term exposure 87 mg/kg ; general population inhalation systemic effects long term exposure 114 mg/m<sup>3</sup>; general population dermal systemic effects long term exposure 206 mg/kg bw/day ; workers dermal systemic effects long term exposure 343 mg/kg ; workers inhalation systemic effects long term exposure 950 mg/m<sup>3</sup> ; general population inhalation local effects acute/short term exposure 950 mg/m<sup>3</sup>; workers inhalation local effects acute/short term exposure 1900 mg/m<sup>3</sup>

(CAS 67-56-1) general population dermal systemic effects long term exposure 4 mg/kg bw/day ; general population dermal systemic effects acute/short term exposure 4 mg/kg bw/day ; general population oral systemic effects long term exposure 4 mg/kg bw/day ; general population oral systemic effects acute/short term exposure 4 mg/kg bw/day; workers dermal systemic effects long term exposure 20 mg/kg bw/day; workers dermal systemic effects acute/short term exposure 20 mg/kg bw/day ; general population inhalation systemic effects long term exposure 26 mg/m<sup>3</sup>; general population inhalation systemic effects acute/short term exposure 26 mg/m<sup>3</sup> ; general population inhalation local effects long term exposure 26 mg/m<sup>3</sup>; general population inhalation local effects acute/short term exposure 26 mg/m<sup>3</sup>; workers inhalation systemic effects long term exposure 130 mg/m<sup>3</sup> ; workers inhalation systemic effects acute/short term exposure 130 mg/m<sup>3</sup>; workers inhalation local effects long term exposure 130 mg/m<sup>3</sup>; workers inhalation local effects acute/short term exposure 130 mg/m<sup>3</sup>

(CAS 108-88-3) general population oral systemic effects long term exposure 8.13 mg/kg bw/day; general population inhalation systemic effects long term exposure 56.5 mg/m<sup>3</sup> ; general population inhalation local effects long term exposure 56.5 mg/m<sup>3</sup>; workers inhalation systemic effects long term exposure 192 mg/m<sup>3</sup> ; workers inhalation local effects long term exposure 192 mg/m<sup>3</sup> ; general population inhalation systemic effects acute/short term exposure 226 mg/m<sup>3</sup>; general population inhalation local effects acute/short term exposure 226 mg/m<sup>3</sup> ; general population dermal systemic effects long term exposure 226 mg/kg bw

### Predicted No Effect Concentration (PNEC):

(CAS 67-56-1) 20.8 mg/L (freshwater); 2.08 mg/L (marine water); 1540 mg/L (freshwater (intermittent releases)); 77 mg/kg (sediment (freshwater)); 7.7 mg/kg (sediment (marine water)); 100 mg/L PNEC (sewage treatment); 100 mg/kg (soil)

(108-88-3) 0.68 mg/L (freshwater); 0.68 mg/L (marine water); 0.68 mg/L (freshwater (intermittent releases)); 16.39 mg/kg (sediment (freshwater)); 16.39 mg/kg (sediment (marine water)); 13.61 mg/L (sewage treatment); 2.89 mg/kg C (soil)

(CAS 108-10-1) 0.6 mg/L (freshwater); 0.06 mg/L (marine water); 1.5 mg/L (freshwater (intermittent releases)); 8.27 mg/kg (sediment (freshwater)); 0.83 mg/kg (sediment (marine water)); 27.5 mg/L (sewage treatment); 1.3 mg/kg (soil)

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### 8.2 Exposure controls

#### Ventilation and engineering measures

: Provide adequate ventilation. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

**Respiratory protection** : In case of insufficient ventilation wear suitable respiratory equipment. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. Advice should be sought from respiratory protection specialists.

**Skin protection** : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. Depending on conditions of use, an impervious apron should be worn.

**Eye / face protection** : Wear eye/face protection. Wear as appropriate: Tightly fitting safety goggles; Safety glasses with side shields. A full face shield may also be necessary. See also EN 166.

#### Other protective equipment

: Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

#### General hygiene considerations

: Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

### 8.3 Environmental exposure controls

: Avoid release to the environment.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

**Physical state** : Clear liquid.

**Colour** : Clear

**Odour** : Alcohol

**Odour threshold** : No information available.

**pH** : No information available.

**Flash point** : 13°C

**Flashpoint (Method)** : Seta closed cup

**Lower flammable limit (% by vol.)**

: 4.3% (Ethanol)

**Upper flammable limit (% by vol.)**

: 36.5% (Methanol)

**Auto-ignition temperature**

: No information available.

**Decomposition temperature**

: No information available.

**Oxidizing properties** : None known.

**Explosive properties** : Not explosive Not expected to be sensitive to mechanical impact. Mixtures of vapour and air at concentrations in the flammable range may be ignited by a static discharge of sufficient energy.

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### Initial boiling point and boiling range

: 64 - 100°C

**Melting/Freezing point** : No information available.

**Relative density** : 0.82

**Solubility in water** : insoluble

**Other solubility(ies)** : No information available.

**Vapour pressure** : No information available.

**Vapour density** : > 1 (Air = 1)

**Partition coefficient: n-octanol/water**

: No information available.

**Viscosity** :  $\geq 1 \text{ mm}^2/\text{sec}$  @ 25°C

**Evaporation rate (BuAe = 1)**

: > 1 (butyl acetate = 1)

**Particle characteristics** : Not applicable.

### 9.2 Other Information

**Volatiles (% by weight)** : 92.9%

**Volatile organic Compounds (VOC's)**

: 731 g/L

**Other physical/chemical comments**

: No additional information.

## SECTION 10. STABILITY AND REACTIVITY

**10.1 Reactivity** : Not normally reactive.

**10.2 Chemical stability** : Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

: Hazardous polymerization does not occur.

**10.4 Conditions to avoid** : Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.

**10.5 Incompatible materials**

: Strong oxidizing agents; Strong acids; Alkali metals; Strong bases

**10.6 Hazardous decomposition products**

: None known.

Burning produces obnoxious and toxic fumes. In the event of fire the following can be released: Carbon oxides; formaldehyde; Nitrogen oxides (NOx)

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on Toxicological effects:

**Acute toxicity** : This mixture is classified as hazardous in accordance with Regulation (EC) No 1272/2008. Classification:  
Acute toxicity; Oral - Category 4. Harmful if swallowed.

**Skin corrosion/Irritation** : According to the classification criteria of the European Union, this product is not considered as being a skin corrosive or irritant.

**Serious eye damage/irritation**

: According to the classification criteria of the European Union, the product is not considered as being an eye irritant.

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### Respiratory or skin sensitisation

- : No data available to indicate product or components may be respiratory sensitizers.
- : No data available to indicate product or components may be skin sensitizers.

### Germ cell mutagenicity

- : Contains no ingredient listed as a mutagen.

### Carcinogenicity

- : Contains no ingredient listed as a carcinogen.

### Reproductive toxicity

- : Contains no ingredient listed as toxic to reproduction.

### STOT-single exposure

- : This mixture is classified as hazardous in accordance with Regulation (EC) No 1272/2008. Classification:

Specific target organ toxicity, single exposure - Category 1. Causes damage to the optic nerves (eyes) if swallowed. Contains: Methanol. Methanol is known to cause appreciable eye irritation, and possible blindness.

### STOT-repeated exposure

- : According to the classification criteria of the European Union, this product is not expected to cause target organ toxicity through repeated exposures.

### Aspiration hazard

- : According to the classification criteria of the European Union, this product is not considered as being an aspiration hazard to humans.

### Routes of exposure

- : Eye contact; Skin contact; Skin Absorption; Inhalation; Ingestion

### Effects of acute exposure

- : Inhalation: May cause irritation of the mucous membranes. Symptoms may include upper respiratory irritation, coughing and breathing difficulties. In extremely high concentrations, may also cause nausea, vomiting, dizziness, drowsiness and other symptoms of central nervous system depression.

Skin contact: May cause mild skin irritation. Exposure may cause temporary irritation, redness or discomfort. Product may be absorbed and cause symptoms similar to those listed for ingestion.

Eye contact: May cause mild eye irritation. Exposure may cause temporary irritation, redness or discomfort.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache). Affected person could experience a latent period of no symptoms, followed by blurred vision and possibly blindness. May cause blindness if swallowed - cannot be made non-poisonous.

### Potential Chronic Health Effects

- : Repeated exposure may cause skin dryness or cracking.

### 11.1.1 Acute Toxicity

#### Toxicological data

- : No data is available on the product itself. The calculated ATE values for this mixture are:

ATE oral = 1782 mg/kg

ATE dermal = 2334 mg/kg

ATE inhalation (vapours) = 24.4 mg/L/4H

See below for individual ingredient acute toxicity data.

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<u>Chemical name</u>	<u>LC<sub>50</sub>(4hr)</u> <u>inh, rat</u>	<u>LD<sub>50</sub></u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Toluene			
Ethanol	> 32 380 ppm (61 mg/L) (vapour)	7060 mg/kg	> 15 800 mg/kg
Methanol	> 5000 ppm/6H (4.1 mg/L/4H (vapour)	5628 mg/kg (rat) The estimated human lethal dose is: 300 - 1000 mg/kg	> 393 mg/kg (Monkey) 15 800 mg/kg (rabbit)
4-methylpentan-2-one	3000 ppm (12.29 mg/L) (vapour)	2080 mg/kg	> 3000 mg/kg

### 11.2 Information on other Hazards

: Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.

11.2.1 Endocrine disrupting properties : none

11.2.2 Other hazards: None Known.

## SECTION 12. ECOLOGICAL INFORMATION

**12.1 Toxicity** : No data is available on the product itself. Should not be released into the environment.

See the following tables for individual ingredient ecotoxicity data.

### Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Ethanol	64-17-5	> 100 mg/L (Fathead minnow)	No information available.	None.
Methanol	67-56-1	15 400 mg/L (Bluegill sunfish)	446,7 mg/L/28-day (Fathead minnow) (QSAR)	None.
4-methylpentan-2-one	108-10-1	780 mg/L (Fathead minnow)	No information available.	None.
Toluene	108-88-3	5.4 mg/L (pink salmon)	1.4 - 4 mg/L	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Ethanol	64-17-5	5012 mg/L (Daphnia magna)	No information available.	None.
Methanol	67-56-1	> 10 000 mg/L (Daphnia magna)	208 mg/L (QSAR)	None.
4-methylpentan-2-one	108-10-1	> 200 mg/L (Daphnia magna)	30 mg/L	None.
Toluene	108-88-3	3.78 mg/L (Daphnia magna)	0.53 - 1 mg/L	None.

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Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Ethanol	64-17-5	1000 mg/L/96hr (Green algae)	No information available.	None.
Methanol	67-56-1	22 000 mg/L/96hr (Green algae)	No information available.	None.
4-methylpentan-2-one	108-10-1	400 mg/L/96hr (Green algae)	No information available.	None.
Toluene	108-88-3	N/Av	10 mg/L/72hr (Green algae)	None.

### 12.2 Persistence and degradability

- : The product itself has not been tested.  
 The following ingredients are considered to be readily biodegradable: Ethanol; Methanol; 4-methylpentan-2-one.

### 12.3 Bioaccumulation potential

- : The product itself has not been tested. See the following data for ingredient information.

Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Ethanol (CAS 64-17-5)	- 0.31	No information available.
Methanol (CAS 67-56-1)	- 0.82 to - 0.64	< 10 (common carp)
4-methylpentan-2-one (CAS 108-10-1)	1.31	3.98

### 12.4 Mobility in soil

- : The product itself has not been tested.

### 12.5 Results of PBT and vPvB assessment

- : This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

### 12.6 Endocrine disrupting properties

- : None known or reported by the manufacturer.

### 12.7 Other Adverse Environmental effects

- : No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 12.8 Additional information

- : None known or reported by the manufacturer.

## SECTION 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods:

- Handling for Disposal** : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. This material and its container must be disposed of in a safe way.

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**Methods of Disposal** : Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Dispose of in accordance with the European Directives on waste and hazardous waste. Waste must be classified and labelled prior to recycling or disposal. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

### SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	14.1 UN Number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing Group	Label
ADR/RID	UN1992	FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethanol; Methanol)	3	II	 
EU ADR/RID Classification Code	FT1 - Flammable liquids, toxic				
EU ADR / RID Hazard Identification Number	336 - highly flammable liquid, toxic				
ADR/RID Additional information	May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Tunnel Code: 2(D/E)				
ICAO/IATA	UN1992	Flammable liquid, toxic, n.o.s. (Ethanol; Methanol)	3	II	 
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction				
IMDG	UN1992	FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethanol; Methanol)	3	II	 
IMDG Additional information	Consult the IMDG regulations for exceptions. EmS No. F-E,S-D				

**14.5 Environmental hazards** : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See Section 12 for more environmental information.

**14.6 Special precautions for user**

: Appropriate advice on safety must accompany the package. Keep away from heat, sparks and open flame - No smoking.

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

: Not applicable.

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### SECTION 15. REGULATORY INFORMATION

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

: Classification according to Regulation (EC) No. 1272/2008 on the classification of hazardous mixtures.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended:

None of the components are specifically listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended

Refer to restrictions found in REACH Annex XVII item 48. Refer to restrictions found in REACH Annex XVII item 69. Refer to restrictions found in REACH Annex XVII item 75.

Directive 2012/18/EU (Seveso III) on the control of major-accident hazards involving dangerous substances:

H3 STOT SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE STOT SE  
Category 1

P5c FLAMMABLE LIQUIDS

Methanol (CAS # 67-56-1)

Directive 98/24/EC on the protection of the health and safety of workers from risks related to chemical agents at work:

Ethanol (CAS # 64-17-5)

Methanol (CAS # 67-56-1)

4-methylpentan-2-one (CAS # 108-10-1)

Toluene (CAS # 108-88-3)

Directive 94/33/EC on the protection of young people at work:

Ethanol (CAS # 64-17-5)

Methanol (CAS # 67-56-1)

4-methylpentan-2-one (CAS # 108-10-1)

Toluene (CAS # 108-88-3)

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended [including Regulation (EU) 2023/707].

Follow national regulation for work with chemical agents.

German legislation on substances that are hazardous to water AwSV:: Water contaminating class (Germany) - 1 (self classified)

#### 15.2 Chemical safety assessment

: A chemical safety assessment has not been carried out by the Manufacturer of this product.





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### SECTION 16. OTHER INFORMATION

<b>Legend</b>	: ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road CAS: Chemical Abstract Services CLP: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures EC: European Community EC50: Effective Concentration 50% ECHA: European Chemicals Agency EEC: European Economic Community EINECS: European Inventory of Existing Commercial chemical Substances EN: European Standard EU: European Union IATA: International Air Transport Association ICAO: International Civil Aviation Organisation IMDG: International Maritime Dangerous Goods LC: Lethal Concentration LD: Lethal Dose NOEC: No observable effect concentration OECD: Organisation for Economic Co-operation and Development OEL: National occupational exposure limits PEL: Permissible exposure limit RID: Regulations concerning the International Carriage of Dangerous Goods by Rail STEL: Short Term Exposure Limit TWA: Time Weighted Average WEL: Workplace Exposure Limit
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**Information Source** : 1. Material Safety Data Sheet from manufacturer.  
2. Canadian Centre for Occupational Health and Safety, CCIInfoWeb Databases  
3. European Chemicals Agency, Classification Legislation  
4. OECD - The Global Portal to Information on Chemical Substances

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**Revision Information**

: 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING 8. EXPOSURE CONTROLS / PERSONAL PROTECTION 11. TOXICOLOGICAL INFORMATION 14. TRANSPORT INFORMATION 15. REGULATORY INFORMATION

**Regulation and Procedure**

:

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Flammable.; Expert judgement  
Acute toxicity; Acute toxicity estimate  
Specific target organ toxicity, single exposure :Expert judgement

### H-phrases (full-text)

H225 - Highly flammable liquid and vapour.  
H301 - Toxic if swallowed.  
H302 - Harmful if swallowed.  
H311 - Toxic in contact with skin.  
H319 - Causes serious eye irritation.  
H331 - Toxic if inhaled.  
H332 - Harmful if inhaled.  
H335 - May cause respiratory irritation.  
H370 - Causes damage to organs (a,b,c).  
EUH066 - Repeated exposure may cause skin dryness or cracking.

### Other special considerations for handling

: Provide adequate information, instruction and training for operators.

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