



# Safety data sheet

## according to 1907/2006/EG, Article 31

Version number 16

Printing date: 19.05.2020

Revision: 30.01.2020

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

#### 1.1 Product identifier

Trade name **OPN-Rust Converter**

##### Other means of identification

Article number 66401

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

Relevant identified uses industrial use  
professional use

Sector of use Metal surface treatment products, including  
galvanic and electroplating products

Uses advised against consumer use (private households)  
Do not use for products that are intended for contact with  
food - exclude food contact.

#### 1.3 Details of the supplier of the safety data sheet

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#### 1.4 24 hours Emergency telephone number:

Vergiftungs-Informations-Zentrale Freiburg +49 (0) 761 / 192 40

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification according to Regulation (EC) No 1272/2008 [CLP]

Flam. Liq. 3 ; H226 - Flammable liquids : Category 3 ; Flammable liquid and vapour.

#### 2.2 Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

##### Hazard pictograms



Flame (GHS02)

##### Signal word

Warning

##### Hazard statements

H226 Flammable liquid and vapour.

##### Precautionary statements

P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 Avoid breathing vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P312 Call a POISON CENTER/doctor if you feel unwell.  
P370+P378 In case of fire: Use foam (alcohol resistant), carbon dioxide, dry powder or water spray for extinction.

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P403+P235	Store in a well-ventilated place. Keep cool.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C/ 122°F.
P501	Dispose of contents / container in accordance with national regulations of the disposal.

### 2.3 Other hazards

None

## SECTION 3: Composition/information on ingredients

POLYMERIC FILM-FORMING SUBSTANCES, WATER, ADDITIVES

### 3.2 Mixtures

#### Hazardous ingredients

ETHANOL ; REACH No. : 01-2119457610-43 ; EC No. : 200-578-6; CAS No. : 64-17-5

Weight fraction :  $\geq 10 - < 25$  %

Classification 1272/2008 [CLP] : Flam. Liq. 2 ; H225 Eye Irrit. 2 ; H319

2-BUTOXYETHANOL ; REACH No. : 01-2119475108-36 ; EC No. : 203-905-0; CAS No. : 111-76-2

Weight fraction :  $\geq 1 - < 5$  %

Classification 1272/2008 [CLP] : Acute Tox. 4 ; H302 Acute Tox. 4 ; H312 Acute Tox. 4 ; H332 Skin Irrit. 2 ; H315 Eye Irrit. 2 ; H319

AMMONIA ; REACH No. : 01-2119488876-14 ; EC No. : 215-647-6; CAS No. : 1336-21-6

Weight fraction :  $< 0,25$  %

Classification 1272/2008 [CLP] : Skin Corr. 1B ; H314 Eye Dam. 1 ; H318 STOT SE 3 ; H335 Aquatic Acute 1 ; H400

**This mixture contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH**

None

**This mixture contains the following substances of very high concern (SVHC) which are subject to authorisation according to Annex XIV of REACH**

None

#### Additional information

Full text of H- and EUH-phrases: see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove affected person from the danger area and lay down. Never give anything by mouth to an unconscious person or a person with cramps. If unconscious place in recovery position and seek medical advice.

#### Following inhalation

Remove casualty to fresh air and keep warm and at rest. In case of respiratory tract irritation, consult a physician.

#### In case of skin contact

Change contaminated, saturated clothing. After contact with skin, wash immediately with plenty of water and soap. Rub greasy ointment into the skin.

#### After eye contact

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

#### After ingestion

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Do NOT induce vomiting. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Let water be drunk in little sips (dilution effect).

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

Dizziness Headache Impairment of vision Nausea Vomiting

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

None

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

alcohol resistant foam Carbon dioxide (CO<sub>2</sub>) Extinguishing powder Water spray jet

##### Unsuitable extinguishing media

Full water jet

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

In case of fire may be liberated: Carbon monoxide Carbon dioxide (CO<sub>2</sub>)

#### 5.3 Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Protective clothing.

#### 5.4 Additional information

Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Move undamaged containers from immediate hazard area if it can be done safely. Co-ordinate fire-fighting measures to the fire surroundings.

### SECTION 6: Accidental release measures

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

Use personal protection equipment. Remove all sources of ignition. Wear breathing apparatus if exposed to vapours/dusts/aerosols. Provide adequate ventilation. See protective measures under point 7 and 8.

#### 6.2 Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

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

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal. Clear contaminated areas thoroughly.

#### 6.4 Reference to other sections

Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13 National regulations see section 15.

### SECTION 7: Handling and storage



#### 7.1 Precautions for safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means. Only use the material in

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places where open light, fire and other flammable sources can be kept away.

### Protective measures

All work processes must always be designed so that the following is excluded: Inhalation of vapours or spray/mists  
Take precautionary measures against static discharges.

### Measures to prevent fire

Keep away from sources of ignition - No smoking. Usual measures for fire prevention. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Provide earthing of containers, equipment, pumps and ventilation facilities. Use only antistatically equipped (spark-free) tools. Wear anti-static footwear and clothing Take precautionary measures against static discharges.

### Measures to prevent aerosol and dust generation

Vapours/aerosols should be exhausted directly at the point of origin. Use only in well-ventilated areas.

### Environmental precautions

Shafts and sewers must be protected from entry of the product.

## 7.2 Conditions for safe storage, including any incompatibilities

### Hints on joint storage

Storage class (TRGS 510) : 3

## 7.3 Specific end use(s)

None

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limit values

ETHANOL ; CAS No. : 64-17-5

Limit value type (country of origin) : TRGS 900 ( D )  
Limit value : 200 ppm / 380 mg/m<sup>3</sup>  
Peak limitation : 4(II)  
Remark : Y  
Version : 29.03.2019

2-BUTOXYETHANOL ; CAS No. : 111-76-2

Limit value type (country of origin) : TRGS 900 ( D )  
Limit value : 10 ppm / 49 mg/m<sup>3</sup>  
Peak limitation : 2(II)  
Remark : H,Y  
Version : 29.03.2019

Limit value type (country of origin) : STEL ( EC )  
Limit value : 50 ppm / 246 mg/m<sup>3</sup>  
Remark : Skin  
Version : 20.06.2019

Limit value type (country of origin) : TWA ( EC )  
Limit value : 20 ppm / 98 mg/m<sup>3</sup>  
Remark : Skin  
Version : 20.06.2019

AMMONIA ; CAS No. : 1336-21-6

Limit value type (country of origin) : TRGS 900 ( D )  
Limit value : 20 ppm / 14 mg/m<sup>3</sup>  
Peak limitation : 2(I)

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Remark : Y  
Version : 29.03.2019  
Limit value type (country of origin) : STEL ( EC )  
Limit value : 50 ppm / 36 mg/m<sup>3</sup>  
Version : 20.06.2019  
Limit value type (country of origin) : TWA ( EC )  
Limit value : 20 ppm / 14 mg/m<sup>3</sup>  
Version : 20.06.2019

### Biological limit values

2-BUTOXYETHANOL ; CAS No. : 111-76-2

Limit value type (country of origin) : TRGS 903 ( D )  
Parameter : Butoxy acetic acid / Urine (U) / At long term exposure: after several previous shifts  
Limit value : 100 mg/l  
Version : 29.03.2019  
Limit value type (country of origin) : TRGS 903 ( D )  
Parameter : Butoxy acetic acid / Urine (U) / End of exposure or end of shift ; At long term exposure: after several previous shifts  
Limit value : 150 mg/g Kr  
Version : 29.03.2019

### DNEL-/PNEC-values

#### DNEL/DMEL

Limit value type : DNEL Consumer (local) ( ETHANOL ; CAS No. : 64-17-5 )  
Exposure route : Inhalation  
Exposure frequency : Short-term  
Limit value : 950 mg/kg  
Limit value type : DNEL Consumer (systemic) ( ETHANOL ; CAS No. : 64-17-5 )  
Exposure route : Dermal  
Exposure frequency : Long-term  
Limit value : 206 mg/kg  
Limit value type : DNEL Consumer (systemic) ( ETHANOL ; CAS No. : 64-17-5 )  
Exposure route : Inhalation  
Exposure frequency : Long-term  
Limit value : 114 mg/m<sup>3</sup>  
Limit value type : DNEL Consumer (systemic) ( ETHANOL ; CAS No. : 64-17-5 )  
Exposure route : Oral  
Exposure frequency : Long-term  
Limit value : 87 mg/kg  
Limit value type : DNEL worker (local) ( ETHANOL ; CAS No. : 64-17-5 )  
Exposure route : Inhalation  
Exposure frequency : Short-term  
Limit value : 1900 mg/m<sup>3</sup>  
Limit value type : DNEL worker (systemic) ( ETHANOL ; CAS No. : 64-17-5 )  
Exposure route : Dermal  
Exposure frequency : Long-term  
Limit value : 343 mg/kg  
Limit value type : DNEL worker (systemic) ( ETHANOL ; CAS No. : 64-17-5 )  
Exposure route : Inhalation  
Exposure frequency : Long-term  
Limit value : 950 mg/m<sup>3</sup>

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Limit value type :	DNEL Consumer (local) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Inhalation
Exposure frequency :	Short-term
Limit value :	123 mg/m <sup>3</sup>
Limit value type :	DNEL Consumer (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Inhalation
Exposure frequency :	Short-term
Limit value :	426 mg/m <sup>3</sup>
Limit value type :	DNEL Consumer (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Dermal
Exposure frequency :	Short-term
Limit value :	44,5 mg/kg
Limit value type :	DNEL Consumer (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Oral
Exposure frequency :	Short-term
Limit value :	13,4 mg/kg
Limit value type :	DNEL Consumer (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Dermal
Exposure frequency :	Long-term
Limit value :	38 mg/kg
Limit value type :	DNEL Consumer (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Inhalation
Exposure frequency :	Long-term
Limit value :	49 mg/m <sup>3</sup>
Limit value type :	DNEL Consumer (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Oral
Exposure frequency :	Long-term
Limit value :	3,2 mg/kg
Limit value type :	DNEL worker (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Inhalation
Exposure frequency :	Short-term
Limit value :	663 mg/m <sup>3</sup>
Limit value type :	DNEL worker (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Inhalation
Exposure frequency :	Short-term
Limit value :	246 mg/m <sup>3</sup>
Limit value type :	DNEL worker (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Dermal
Exposure frequency :	Long-term
Limit value :	75 mg/kg
Limit value type :	DNEL worker (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Inhalation
Exposure frequency :	Long-term
Limit value :	98 mg/m <sup>3</sup>
Limit value type :	DNEL worker (systemic) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Dermal
Exposure frequency :	Short-term
Limit value :	89 mg/kg
Limit value type :	DNEL Consumer (local) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Inhalation
Exposure frequency :	Short-term

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Limit value :	7,2 mg/m <sup>3</sup>
Limit value type :	DNEL Consumer (local) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Inhalation
Exposure frequency :	Long-term
Limit value :	2,8 mg/m <sup>3</sup>
Limit value type :	DNEL Consumer (systemic) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Dermal
Exposure frequency :	Short-term
Limit value :	68 mg/kg
Limit value type :	DNEL Consumer (systemic) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Dermal
Exposure frequency :	Long-term
Limit value :	68 mg/kg
Limit value type :	DNEL Consumer (systemic) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Inhalation
Exposure frequency :	Short-term
Limit value :	23,8 mg/m <sup>3</sup>
Limit value type :	DNEL Consumer (systemic) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Inhalation
Exposure frequency :	Long-term
Limit value :	23,8 mg/m <sup>3</sup>
Limit value type :	DNEL Consumer (systemic) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Oral
Exposure frequency :	Short-term
Limit value :	6,8 mg/kg
Limit value type :	DNEL Consumer (systemic) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Oral
Exposure frequency :	Long-term
Limit value :	6,8 mg/kg
Limit value type :	DNEL worker (local) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Inhalation
Exposure frequency :	Short-term
Limit value :	36 mg/m <sup>3</sup>
Limit value type :	DNEL worker (local) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Inhalation
Exposure frequency :	Long-term
Limit value :	14 mg/m <sup>3</sup>
Limit value type :	DNEL worker (systemic) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Dermal
Exposure frequency :	Short-term
Limit value :	6,8 mg/kg
Safety factor :	1 D
Limit value type :	DNEL worker (systemic) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Dermal
Exposure frequency :	Long-term
Limit value :	6,8 mg/kg
Safety factor :	1 D
Limit value type :	DNEL worker (systemic) ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Inhalation
Exposure frequency :	Short-term
Limit value :	47,6 mg/m <sup>3</sup>

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Limit value type : DNEL worker (systemic) ( AMMONIA ; CAS No. : 1336-21-6 )  
Exposure route : Inhalation  
Exposure frequency : Long-term  
Limit value : 47,6 mg/m<sup>3</sup>

### PNEC

Limit value type : PNEC (Aquatic, freshwater) ( ETHANOL ; CAS No. : 64-17-5 )  
Limit value : 0,96 mg/l  
Limit value type : PNEC (Aquatic, marine water) ( ETHANOL ; CAS No. : 64-17-5 )  
Limit value : 0,79 mg/l  
Limit value type : PNEC (Sediment, freshwater) ( ETHANOL ; CAS No. : 64-17-5 )  
Limit value : 3,6 mg/kg  
Limit value type : PNEC (Sediment, marine water) ( ETHANOL ; CAS No. : 64-17-5 )  
Limit value : 2,9 mg/kg  
Limit value type : PNEC (Soil) ( ETHANOL ; CAS No. : 64-17-5 )  
Limit value : 0,63 mg/kg  
Limit value type : PNEC (Secondary poisoning) ( ETHANOL ; CAS No. : 64-17-5 )  
Limit value : 0,72 mg/kg  
Limit value type : PNEC (Sewage treatment plant) ( ETHANOL ; CAS No. : 64-17-5 )  
Limit value : 580 mg/l  
Limit value type : PNEC (Aquatic, freshwater) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Limit value : 8,8 mg/l  
Limit value type : PNEC (Aquatic, intermittent release) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Limit value : 9,1 mg/l  
Limit value type : PNEC (Aquatic, marine water) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Limit value : 0,88 mg/l  
Limit value type : PNEC (Sediment, freshwater) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Limit value : 34,6 mg/kg  
Limit value type : PNEC (Sediment, marine water) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Limit value : 3,46 mg/kg  
Limit value type : PNEC (Soil) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Limit value : 2,8 mg/kg  
Limit value type : PNEC (Secondary poisoning) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Limit value : 20 mg/kg  
Limit value type : PNEC (Sewage treatment plant) ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Limit value : 463 mg/l  
Limit value type : PNEC (Aquatic, freshwater) ( AMMONIA ; CAS No. : 1336-21-6 )  
Limit value : 0,0011 mg/l  
Limit value type : PNEC (Aquatic, intermittent release) ( AMMONIA ; CAS No. : 1336-21-6 )  
Limit value : 0,0068 mg/l  
Limit value type : PNEC (Aquatic, marine water) ( AMMONIA ; CAS No. : 1336-21-6 )  
Limit value : 0,0011 mg/l

## 8.2 Exposure controls



### Personal protection equipment

#### Eye/face protection

Eye glasses with side protection



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### Skin protection

#### Hand protection

**Suitable gloves type** : Gloves with long cuffs

**Suitable material** : Butyl caoutchouc (butyl rubber)

**Breakthrough time** : >= 480 min

**Thickness of the glove material** : 0,5 mm

**Recommended glove articles** : EN ISO 374

**Additional hand protection measures** : Check leak tightness/impermeability prior to use. Do not wear gloves near rotary machines and tools. In the case of wanting to use the gloves again, clean them before taking off and air them well.

**Remark** : The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

#### Body protection

lab coat Overall

**Suitable protective clothing** : For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes). Chemical resistant safety shoes Only wear fitting, comfortable and clean protective clothing.

**Required properties** : antistatic. flame-resistant heat-resistant

**Recommended material** : Natural fibres (e.g. cotton) heat-resistant synthetic fibres

### Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Respiratory protection necessary at: exceeding exposure limit values / aerosol or mist formation.

#### Suitable respiratory protection apparatus

Self-contained respirator (breathing apparatus) (DIN EN 133).

### General information

Wash hands before breaks and after work. Apply skin care products after work.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**Appearance** : liquid

**Colour** : black

**Odour** : characteristic

#### Safety characteristics

<b>Melting point/freezing point</b> :			not determined	
<b>Initial boiling point and boiling range</b> :	( 1013 hPa )		78,0 - 118,0	°C
<b>Decomposition temperature</b> :			No data available	
<b>Flash point</b> :		approx.	42,0	°C DIN 51755 part 1
<b>Auto-ignition temperature</b> :			none	
<b>Oxidising liquids</b> :			No data available.	
<b>Lower explosion limit</b> :			none	
<b>Upper explosion limit</b> :			none	
<b>Explosive properties</b> :			No data available.	
<b>Vapour pressure 20°C</b> ):	( 20 °C )		No data available	
<b>Density</b> :	( 20 °C )	approx.	0,980	g/cm <sup>3</sup>

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<b>Water solubility :</b>	( 20 °C )	miscible	
<b>pH-value:</b>	( 20 °C / conc. )	7,3 - 8,5	
<b>log P O/W :</b>		No data available	
<b>Cinematic viscosity :</b>	( 40 °C )	not determined	
<b>Odour threshold :</b>		No data available	
<b>Relative vapour density :</b>	( 20 °C )	No data available	(air = 1)
<b>Vapourisation rate :</b>		No data available	(Ether = 1)
<b>Maximum VOC content (EC) :</b>	( 20 °C )	14,0	Wt % gem. RL 2010/75/EG
<b>Max. VOC content (Decopaint):</b>	( 20 °C )	14,0	Wt % gem. RL 2004/42/EG

### 9.2 Other information

no more data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No information available.

### 10.2 Chemical stability

Stable under recommended storage and handling conditions(See section 7).

### 10.3 Possibility of hazardous reactions

Formation of explosive mixtures with: Air. possible

### 10.4 Conditions to avoid

Heat, sparks, flames and other ignition sources.

### 10.5 Incompatible materials

Alkali (lye), concentrated. Acid, concentrated. Oxidising agent, strong.

### 10.6 Hazardous decomposition products

Does not decompose when used for intended uses.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

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

#### Acute oral toxicity

Parameter :	LD50 ( ETHANOL ; CAS No. : 64-17-5 )
Exposure route :	Oral
Species :	Rat
Effective dose :	> 2000 mg/kg
Method :	OECD 401
Parameter :	LD50 ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Exposure route :	Oral
Species :	Rat
Effective dose :	1746 mg/kg
Method :	OECD 401
Parameter :	LD50 ( AMMONIA ; CAS No. : 1336-21-6 )
Exposure route :	Oral
Species :	Rat
Effective dose :	350 mg/kg

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### Acute dermal toxicity

Parameter : LD50 ( ETHANOL ; CAS No. : 64-17-5 )  
Exposure route : Dermal  
Species : Rabbit  
Effective dose : > 2000 mg/kg  
Method : OECD 402  
Parameter : LD50 ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Exposure route : Dermal  
Species : Guinea pig  
Effective dose : > 2000 mg/kg  
Method : OECD 402

### Acute inhalation toxicity

Parameter : LC50 ( ETHANOL ; CAS No. : 64-17-5 )  
Exposure route : Inhalation  
Species : Mouse  
Effective dose : > 20 mg/l  
Exposure time : 4 h  
Parameter : LC50 ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Exposure route : Inhalation  
Species : Rat  
Effective dose : 2 - 20 mg/l  
Exposure time : 4 h

### Corrosion

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

### Skin corrosion/irritation

Parameter : Skin corrosion/irritation ( ETHANOL ; CAS No. : 64-17-5 )  
Species : Rabbit  
Result : Not irritant  
Method : OECD 404

### Serious eye damage/eye irritation

Parameter : Serious eye damage/eye irritation ( ETHANOL ; CAS No. : 64-17-5 )  
Species : Rabbit  
Result : irritant  
Method : OECD 405

### Respiratory or skin sensitisation

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

### CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

#### Carcinogenicity

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

#### Germ cell mutagenicity

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

#### Reproductive toxicity

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

### STOT-single exposure

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

### STOT-repeated exposure

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

### Aspiration hazard

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

### 11.2 Toxicokinetics, metabolism and distribution

There are no data available on the preparation/mixture itself.

### 11.3 Symptoms related to the physical, chemical and toxicological characteristics

There are no data available on the preparation/mixture itself.

### 11.4 Other adverse effects

Prolonged or repeated contact with skin or mucous membrane result in irritation symptoms such as redness, blistering, dermatitis, etc. Has degreasing effect on the skin.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Aquatic toxicity

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

##### Acute (short-term) fish toxicity

Parameter :	LC50 ( ETHANOL ; CAS No. : 64-17-5 )
Species :	Leuciscus idus (golden orfe)
Effective dose :	> 100 mg/l
Exposure time :	48 h
Method :	OECD 203
Parameter :	LC50 ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Species :	Oncorhynchus mykiss (Rainbow trout)
Effective dose :	1474 mg/l
Exposure time :	96 h
Method :	OECD 203
Parameter :	LC50 ( AMMONIA ; CAS No. : 1336-21-6 )
Species :	Oncorhynchus mykiss (Rainbow trout)
Effective dose :	0,89 mg/l
Exposure time :	96 h

##### Chronic (long-term) fish toxicity

Parameter :	EC5 ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Species :	Brachydanio rerio (zebra-fish)
Effective dose :	> 100 mg/l
Exposure time :	21 D
Parameter :	LOEC ( AMMONIA ; CAS No. : 1336-21-6 )
Species :	Oncorhynchus mykiss (Rainbow trout)
Effective dose :	0,022 mg/l
Exposure time :	73 D

##### Acute (short-term) toxicity to crustacea

Parameter :	EC50 ( ETHANOL ; CAS No. : 64-17-5 )
Species :	Daphnia magna (Big water flea)
Effective dose :	> 100 mg/l
Exposure time :	24 h
Method :	OECD 202
Parameter :	EC50 ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )
Species :	Daphnia magna (Big water flea)
Effective dose :	1550 mg/l
Exposure time :	48 h
Method :	OECD 202

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Parameter : EC50 ( AMMONIA ; CAS No. : 1336-21-6 )  
Species : Daphnia magna (Big water flea)  
Effective dose : 101 mg/l  
Exposure time : 48 h

### Chronic (long-term) toxicity to crustacea

Parameter : EC5 ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Species : Daphnia magna (Big water flea)  
Effective dose : 100 mg/l  
Exposure time : 21 D  
Method : OECD 211

Parameter : NOEC ( AMMONIA ; CAS No. : 1336-21-6 )  
Species : Daphnia magna (Big water flea)  
Effective dose : 0,79 mg/l  
Exposure time : 96 h

### Acute (short-term) toxicity to aquatic algae and cyanobacteria

Parameter : EC50 ( ETHANOL ; CAS No. : 64-17-5 )  
Species : Chlorella pyrenoidosa  
Effective dose : > 100 mg/l  
Method : OECD 201

Parameter : EC50 ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Species : Pseudokirchneriella subcapitata  
Evaluation parameter : Inhibition of growth rate  
Effective dose : 1840 mg/l  
Exposure time : 72 h  
Method : OECD 201

Parameter : EC50 ( AMMONIA ; CAS No. : 1336-21-6 )  
Species : Chlorella vulgaris  
Effective dose : 2700 mg/l  
Exposure time : 18 D

### Toxicity to microorganisms

Parameter : EC0 ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Species : Pseudomonas putida  
Effective dose : > 700 mg/l  
Exposure time : 16 h  
Method : DIN 38412 / part 8

## 12.2 Persistence and degradability

### Biodegradation

Parameter : Biodegradation ( ETHANOL ; CAS No. : 64-17-5 )  
Inoculum : Degree of elimination  
Evaluation parameter : Aerobic  
Degradation rate : > 70 %  
Test duration : 5 D  
Evaluation : Readily biodegradable (according to OECD criteria).  
Method : OECD 301D

Parameter : Biodegradation ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Inoculum : Degree of elimination  
Evaluation parameter : Aerobic  
Degradation rate : 90 %  
Test duration : 28 D  
Evaluation : Readily biodegradable (according to OECD criteria).

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Method : OECD 301B

### 12.3 Bioaccumulative potential

Parameter : Log KOW ( ETHANOL ; CAS No. : 64-17-5 )  
Value : -0,35  
Evaluation : niedriges Bioakkumulationspotential  
Parameter : Log KOW ( 2-BUTOXYETHANOL ; CAS No. : 111-76-2 )  
Value : 0,81  
Parameter : Log KOW ( AMMONIA ; CAS No. : 1336-21-6 )  
Value : -0,64

### 12.4 Mobility in soil

No information available.

### 12.5 Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

### 12.6 Other adverse effects

No information available.

### 12.7 Additional ecotoxicological information

None

## SECTION 13: Disposal considerations

Dispose according to legislation.

### 13.1 Waste treatment methods

#### Directive 2008/98/EC (Waste Framework Directive)

##### Before intended use

##### Waste codes/waste designations according to EWC/AVV

Waste code (EWC/AVV) : 07 07 99 (Wastes not otherwise specified)

### 13.2 Additional information

None

## SECTION 14: Transport information

### 14.1 UN number

UN 1170

### 14.2 UN proper shipping name

#### Land transport (ADR/RID)

ETHANOL, SOLUTION

#### Sea transport (IMDG)

ETHANOL, SOLUTION

#### Air transport (ICAO-TI / IATA-DGR)

ETHANOL, SOLUTION

### 14.3 Transport hazard class(es)

#### Land transport (ADR/RID)

Class(es) : 3  
Classification code : F1  
Hazard identification number (Kemler No.) : 30  
Tunnel restriction code : D/E

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<b>Special provisions :</b>	LQ 5   E 1
<b>Hazard label(s) :</b>	3
<b>Sea transport (IMDG)</b>	
<b>Class(es) :</b>	3
<b>EmS-No. :</b>	F-E / S-D
<b>Special provisions :</b>	LQ 5   E 1
<b>Hazard label(s) :</b>	3
<b>Air transport (ICAO-TI / IATA-DGR)</b>	
<b>Class(es) :</b>	3
<b>Special provisions :</b>	E 1
<b>Hazard label(s) :</b>	3

### 14.4 Packing group

III

### 14.5 Environmental hazards

<b>Land transport (ADR/RID) :</b>	No
<b>Sea transport (IMDG) :</b>	No
<b>Air transport (ICAO-TI / IATA-DGR) :</b>	No

### 14.6 Special precautions for user

None

## SECTION 15: Regulatory information

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

#### EU legislation

according to Regulation (EC) No. 1907/2006 (amended by Regulation (EU) No 830/2015)

#### Authorisations and/or restrictions on use

##### Restrictions on use

Use restriction according to REACH annex XVII, no. : 3, 40

#### National regulations

##### Technische Anleitung Luft (TA-Luft)

Weight fraction (Number 5.2.5. I) : < 5 %

##### Water hazard class (WGK)

Classification according to AwSV - Class : 1 (Slightly hazardous to water)

Percentage of carcinogenic substances WGK 2 :	< 0,1 %
Percentage of carcinogenic substances WGK 3 :	< 0,1 %
Percentage of carcinogenic substances :	< 0,1 %
Percentage of substances WGK 3 :	0 %
Percentage of substances WGK 3 with M-Factor :	0 %
Percentage of substances WGK 2 :	0,43 %
Percentage of substances WGK 2 with M-Factor :	0 %
Percentage of substances WGK 1 :	39,88 %
Percentage of floating liquids :	0 %
Percentage of substances non-hazardous to water (nwg) :	59,55 %
Percentage of substances unidentified :	0 %

### 15.2 Chemical safety assessment

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No information available.

### 15.3 Additional information

None

## SECTION 16: Other information

### 16.1 Indication of changes

07. Hints on joint storage - Storage class · 14. UN proper shipping name - Land transport (ADR/RID) · 14. UN proper shipping name - Sea transport (IMDG) · 14. UN proper shipping name - Air transport (ICAO-TI / IATA-DGR) · 14.  
Transport hazard class(es) - Land transport (ADR/RID) · 14. Transport hazard class(es) - Sea transport (IMDG) · 14.  
Transport hazard class(es) - Air transport (ICAO-TI / IATA-DGR)

### 16.2 Abbreviations and acronyms

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)  
ADR: European agreement concerning the international carriage of dangerous goods by road  
(Accord européen relatif transport des marchandises dangereuses par route)  
AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany)  
BCF: Bio-Concentration Factor  
BOD(5): Biochemical oxygen demand (within 5 days)  
CAS: Chemical Abstract Service  
CLP: Classification, Labelling and Packaging  
CMR: Carcinogenic, Mutagenic, toxic for Reproduction  
DIN: German Standards Institute / German industrial norm  
DNEL: Derived No Effect Level  
DOC: Dissolved organic carbon  
EAK/ AVV: European waste catalogue/ waste directory-regulation  
EC50: Effective Concentration 50%  
ECHA: European Chemical Agency  
EINECS: European Inventory of Existing Commercial Chemical Substances  
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
IATA: International Air Transport Association  
IC50: Inhibition Concentration 50%  
IMDG: International Maritime Dangerous Goods Code  
LC50: Lethal Concentration 50% - LD50: Lethal dose 50%  
MAK: Treshold limit values Germany  
NLP: No Longer Polymers  
NOAEC: No Observed Adverse Effect Concentration  
NOAEL: No Observed Adverse Effect Level  
OECD: Organization for Economic Cooperation and Development  
PBT: persistent, bioaccumulative, toxic  
PC: Product category  
PNEC: Predicted No Effect Concentration  
REACH: Registration, Evaluation and Authorization of Chemicals  
RID: Regulations concerning the international carriage of dangerous goods by rail  
(Règlement International concernant le transport de marchandises dangereuses par chemin de fer)  
STEL: Short-term Exposure Limit  
STP: Sewage treatment plant  
SVHC: Substance of Very High Concern  
TLV: Threshold Limit Value  
TWA: Time Weighted Average  
UN: United Nations  
VOC: Volatile Organic Compounds  
vPvB: very persistent, very bioaccumulative



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### 16.3 Key literature references and sources for data

None

### 16.4 Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

See SECTION 2.1 (classification).

### 16.5 Relevant H- and EUH-phrases (Number and full text)

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.

### 16.6 Training advice

None

### 16.7 Additional information

None

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The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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