

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



## ROTI®Histofix ECO Plus SOLVAGREEN® ready-to-use, formalin-free

article number: **8907**  
Version: **5.0 en**  
Replaces version of: 2022-03-22  
Version: (4)

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

### 1.1 Product identifier

Identification of the substance **ROTI®Histofix ECO Plus SOLVAGREEN® ready-to-use, formalin-free**

Article number 8907

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

Relevant identified uses: Laboratory and analytical use  
Laboratory chemical

Uses advised against: Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household).

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

Carl Roth GmbH + Co KG  
Schoemperlenstr. 3-5  
D-76185 Karlsruhe  
Germany

**Telephone:**+49 (0) 721 - 56 06 0  
**Telefax:** +49 (0) 721 - 56 06 149  
**e-mail:** sicherheit@carlroth.de  
**Website:** www.carlroth.de

Competent person responsible for the safety data sheet: :Department Health, Safety and Environment

**e-mail (competent person):** **sicherheit@carlroth.de**

### 1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification acc. to GHS

Section	Hazard class	Cat-egory	Hazard class and category	Hazard statement
3.4S	Skin sensitisation	1	Skin Sens. 1	H317

For full text of abbreviations: see SECTION 16

### 2.2 Label elements

#### Labelling

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## Signal word

**Warning**

## Pictograms

GHS07



## Hazard statements

H317 May cause an allergic skin reaction

## Precautionary statements

### **Precautionary statements - prevention**

P280 Wear protective gloves

### **Precautionary statements - response**

P302+P352 IF ON SKIN: Wash with plenty of water  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention

## 2.3 Other hazards

### **Results of PBT and vPvB assessment**

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



## SECTION 3: Composition/information on ingredients

### 3.1 Substances

not relevant (mixture)

### 3.2 Mixtures

#### **Description of the mixture**

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
Water	CAS No 7732-18-5  EC No 231-791-2	87,31			
Hexamethylene tetramine	CAS No 100-97-0  EC No 202-905-8  Index No 612-101-00-2	<2,5	Flam. Sol. 2 / H228 Skin Sens. 1 / H317	 	GHS-HC
Glycerine	CAS No 56-81-5  EC No 200-289-5	<2			IOELV

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Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
Citric acid	CAS No 77-92-9  EC No 201-069-1  Index No 607-750-00-3	< 2	Eye Irrit. 2 / H319 STOT SE 3 / H335		GHS-HC
Ethanol	CAS No 64-17-5  EC No 200-578-6  Index No 603-002-00-5	< 1,5	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319		GHS-HC IARC: 1
2-Propanol	CAS No 67-63-0  EC No 200-661-7  Index No 603-117-00-0	< 1,5	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 STOT SE 3 / H336		GHS-HC
Ethylene glycol	CAS No 107-21-1  EC No 203-473-3  Index No 603-027-00-1	< 1	Acute Tox. 4 / H302 STOT RE 2 / H373		GHS-HC IOELV
Ammonium chloride	CAS No 12125-02-9  EC No 235-186-4  Index No 017-014-00-8	< 1	Acute Tox. 4 / H302 Eye Irrit. 2 / H319		GHS-HC
DL-Lactic acid	CAS No 598-82-3  EC No 209-954-4	< 1	Skin Irrit. 2 / H315 Eye Dam. 1 / H318		
Methanol	CAS No 67-56-1  EC No 200-659-6  Index No 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		GHS-HC IOELV
Sodium azide	CAS No 26628-22-8  EC No 247-852-1  Index No 011-004-00-7	< 0,1	Acute Tox. 2 / H300 Acute Tox. 1 / H310 Acute Tox. 2 / H330 STOT RE 2 / H373 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 EUH032		GHS-HC IOELV

## Notes

GHS-HC: Harmonised classification (the classification of the substance corresponds to the entry in the list according to 1272/2008/EC, Annex VI)

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### Notes

IARC: 1: IARC group 1: carcinogenic to humans (International Agency for Research on Cancer)  
IOELV: Substance with a community indicative occupational exposure limit value

Name of substance	Identifier	Specific Conc. Limits	M-Factors	ATE	Exposure route
Ammonium chloride	CAS No 12125-02-9  EC No 235-186-4	-	-	1.410 mg/kg	oral
Methanol	CAS No 67-56-1  EC No 200-659-6	STOT SE 1; H370: C ≥ 10 % STOT SE 2; H371: 3 % ≤ C < 10 %	-	100 mg/kg 300 mg/kg 3 mg/l/4h	oral dermal inhalation: vapour
Ethylene glycol	CAS No 107-21-1  EC No 203-473-3	-	-	500 mg/kg	oral
Sodium azide	CAS No 26628-22-8  EC No 247-852-1	-	-	27 mg/kg 20 mg/kg >0,054 mg/l/ 4h	oral dermal inhalation: dust/ mist

For full text of abbreviations: see SECTION 16

## SECTION 4: First aid measures

### 4.1 Description of first aid measures



#### General notes

Take off contaminated clothing.

#### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following skin contact

After contact with skin, wash immediately with plenty of water. In case of skin reactions, consult a physician.

#### Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

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

Vomiting, Allergic reactions

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

none

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media



#### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings  
water spray, alcohol resistant foam, dry extinguishing powder, BC-powder, carbon dioxide (CO<sub>2</sub>)

#### Unsuitable extinguishing media

water jet

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

Ingredients of the mixture combustible. The product itself does not burn.

#### Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

## SECTION 6: Accidental release measures

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



#### For non-emergency personnel

Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water.

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

#### Advice on how to contain a spill

Covering of drains.

#### Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

#### Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

No special measures are necessary.

#### Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

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

Keep container tightly closed.

#### Incompatible substances or mixtures

Observe hints for combined storage.

#### Protect against external exposure, such as

UV-radiation/sunlight

#### Consideration of other advice:

#### Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

### 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### National limit values

#### Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [ppm]	Ceiling-C [mg/m <sup>3</sup> ]	Notation	Source
EU	ethylene glycol	107-21-1	IOELV	20	52	40	104			H	2000/39/EC
EU	sodium azide	26628-22-8	IOELV		0,1		0,3			H	2000/39/EC
EU	methanol	67-56-1	IOELV	200	260					H	2006/15/EC
GB	ethane-1,2-diol	107-21-1	WEL		10					particle	EH40/2005
GB	ethane-1,2-diol	107-21-1	WEL	20	52	40	104			vap	EH40/2005
GB	ammonium chloride	12125-02-9	WEL		10		20			fume	EH40/2005
GB	sodium azide	26628-22-8	WEL		0,1		0,3				EH40/2005
GB	glycerol	56-81-5	WEL		10					mist	EH40/2005
GB	ethanol	64-17-5	WEL	1.000	1.920						EH40/2005

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Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [ppm]	Ceiling-C [mg/m <sup>3</sup> ]	Notation	Source
GB	methanol	67-56-1	WEL	200	266	250	333				EH40/2005
GB	propan-2-ol	67-63-0	WEL	400	999	500	1.250				EH40/2005

### Notation

Ceiling-C	Ceiling value is a limit value above which exposure should not occur
fume	As fume
H	Absorbed through the skin
mist	As mists
particle	As airborne particles
STEL	Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)
vap	As vapours

### Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Hexamethylene tetramine	100-97-0	DNEL	5,6 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
Hexamethylene tetramine	100-97-0	DNEL	6,4 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Glycerine	56-81-5	DNEL	220 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - local effects
Ethanol	64-17-5	DNEL	1.900 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	acute - systemic effects
Ethanol	64-17-5	DNEL	343 mg/kg	human, dermal	worker (industry)	chronic - systemic effects
Ethanol	64-17-5	DNEL	950 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
2-Propanol	67-63-0	DNEL	500 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
2-Propanol	67-63-0	DNEL	888 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Methanol	67-56-1	DNEL	130 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
Methanol	67-56-1	DNEL	130 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	acute - systemic effects
Methanol	67-56-1	DNEL	130 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - local effects
Methanol	67-56-1	DNEL	130 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	acute - local effects
Methanol	67-56-1	DNEL	20 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Methanol	67-56-1	DNEL	20 mg/kg bw/day	human, dermal	worker (industry)	acute - systemic effects

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Relevant DNELs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Ethylene glycol	107-21-1	DNEL	35 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - local effects
Ethylene glycol	107-21-1	DNEL	106 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
DL-Lactic acid	598-82-3	DNEL	592 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - local effects
DL-Lactic acid	598-82-3	DNEL	592 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	acute - local effects
Sodium azide	26628-22-8	DNEL	0,164 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
Sodium azide	26628-22-8	DNEL	46,7 µg/kg	human, dermal	worker (industry)	chronic - systemic effects

Relevant PNECs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Hexamethylene tetramine	100-97-0	PNEC	3 mg/l	aquatic organisms	freshwater	short-term (single instance)
Hexamethylene tetramine	100-97-0	PNEC	0,3 mg/l	aquatic organisms	marine water	short-term (single instance)
Hexamethylene tetramine	100-97-0	PNEC	100 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Hexamethylene tetramine	100-97-0	PNEC	10,2 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Hexamethylene tetramine	100-97-0	PNEC	1,02 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Hexamethylene tetramine	100-97-0	PNEC	0,28 mg/kg	terrestrial organisms	soil	short-term (single instance)
Citric acid	77-92-9	PNEC	0,44 mg/l	aquatic organisms	freshwater	short-term (single instance)
Citric acid	77-92-9	PNEC	0,044 mg/l	aquatic organisms	marine water	short-term (single instance)
Citric acid	77-92-9	PNEC	1.000 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Citric acid	77-92-9	PNEC	34,6 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Citric acid	77-92-9	PNEC	3,46 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Citric acid	77-92-9	PNEC	33,1 mg/kg	terrestrial organisms	soil	short-term (single instance)
Glycerine	56-81-5	PNEC	1.000 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Ethanol	64-17-5	PNEC	0,79 mg/cm <sup>3</sup>	unknown	marine water	intermittent release



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Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Ethanol	64-17-5	PNEC	2,75 mg/cm <sup>3</sup>	unknown	air	intermittent release
Ethanol	64-17-5	PNEC	3,6 mg/cm <sup>3</sup>	unknown	freshwater sediment	intermittent release
Ethanol	64-17-5	PNEC	580 mg/cm <sup>3</sup>	unknown	sewage treatment plant (STP)	intermittent release
Ethanol	64-17-5	PNEC	0,63 mg/cm <sup>3</sup>	unknown	soil	intermittent release
Ethanol	64-17-5	PNEC	0,96 mg/cm <sup>3</sup>	unknown	freshwater	intermittent release
2-Propanol	67-63-0	PNEC	140,9 mg/l	aquatic organisms	freshwater	short-term (single instance)
2-Propanol	67-63-0	PNEC	140,9 mg/l	aquatic organisms	marine water	short-term (single instance)
2-Propanol	67-63-0	PNEC	2.251 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
2-Propanol	67-63-0	PNEC	552 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
2-Propanol	67-63-0	PNEC	552 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
2-Propanol	67-63-0	PNEC	28 mg/kg	terrestrial organisms	soil	short-term (single instance)
Methanol	67-56-1	PNEC	20,8 mg/l	aquatic organisms	freshwater	short-term (single instance)
Methanol	67-56-1	PNEC	2,08 mg/l	aquatic organisms	marine water	short-term (single instance)
Methanol	67-56-1	PNEC	100 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Methanol	67-56-1	PNEC	77 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Methanol	67-56-1	PNEC	7,7 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Methanol	67-56-1	PNEC	100 mg/kg	terrestrial organisms	soil	short-term (single instance)
Ethylene glycol	107-21-1	PNEC	10 mg/l	aquatic organisms	freshwater	short-term (single instance)
Ethylene glycol	107-21-1	PNEC	1 mg/l	aquatic organisms	marine water	short-term (single instance)
Ethylene glycol	107-21-1	PNEC	199,5 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Ethylene glycol	107-21-1	PNEC	37 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Ethylene glycol	107-21-1	PNEC	3,7 mg/kg	aquatic organisms	marine sediment	short-term (single instance)

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Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Ethylene glycol	107-21-1	PNEC	1,53 mg/kg	terrestrial organisms	soil	short-term (single instance)
Sodium azide	26628-22-8	PNEC	0,35 µg/l	aquatic organisms	freshwater	short-term (single instance)
Sodium azide	26628-22-8	PNEC	30 µg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Sodium azide	26628-22-8	PNEC	16,7 µg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Sodium azide	26628-22-8	PNEC	0,72 µg/kg	aquatic organisms	marine sediment	short-term (single instance)

## 8.2 Exposure controls

### Individual protection measures (personal protective equipment)

#### Eye/face protection



Use safety goggle with side protection.

#### Skin protection



#### • hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. 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. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

#### • type of material

NBR (Nitrile rubber)

#### • material thickness

>0,11 mm

#### • breakthrough times of the glove material

>480 minutes (permeation: level 6)

#### • other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

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## Respiratory protection



Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C, colour code: Brown). Usually no personal respiratory protection necessary.

## Environmental exposure controls

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	fruity - floral odor
Melting point/freezing point	~0 °C
Boiling point or initial boiling point and boiling range	~100 °C
Flammability	non-combustible
Lower and upper explosion limit	not determined
Flash point	not determined
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	5 – 5,2 (20 °C)
Kinematic viscosity	3,448 mm <sup>2</sup> /s at 20 °C
Dynamic viscosity	3,5 mPa s at 20 °C
<u>Solubility(ies)</u>	
Water solubility	miscible in any proportion
<u>Partition coefficient</u>	
Partition coefficient n-octanol/water (log value):	this information is not available
Vapour pressure	23 hPa at 20 °C
<u>Density and/or relative density</u>	
Density	1,015 g/cm <sup>3</sup> at 20 °C
Relative vapour density	information on this property is not available
Particle characteristics	not relevant (liquid)

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## Other safety parameters

Oxidising properties none

### 9.2 Other information

Information with regard to physical hazard classes: hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics:

Miscibility completely miscible with water

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

UV-radiation/sunlight.

### 10.5 Incompatible materials

There is no additional information.

### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Test data are not available for the complete mixture.

#### Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

#### Classification acc. to GHS

#### Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	CAS No	Exposure route	ATE
Ammonium chloride	12125-02-9	oral	1.410 mg/kg
Methanol	67-56-1	oral	100 mg/kg
Methanol	67-56-1	dermal	300 mg/kg
Methanol	67-56-1	inhalation: vapour	3 mg/l/4h
Ethylene glycol	107-21-1	oral	500 mg/kg

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Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	CAS No	Exposure route	ATE
Sodium azide	26628-22-8	oral	27 mg/kg
Sodium azide	26628-22-8	dermal	20 mg/kg
Sodium azide	26628-22-8	inhalation: dust/mist	>0,054 mg/l/4h

Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
Hexamethylene tetramine	100-97-0	oral	LD50	>20.000 mg/kg	rat
Hexamethylene tetramine	100-97-0	dermal	LD50	>2.000 mg/kg	rat
Citric acid	77-92-9	oral	LD50	5.400 mg/kg	mouse
Citric acid	77-92-9	dermal	LD50	>2.000 mg/kg	rat
Glycerine	56-81-5	dermal	LD50	>10.000 mg/kg	rabbit
Glycerine	56-81-5	oral	LD50	27.200 mg/kg	rat
Glycerine	56-81-5	inhalation: dust/mist	LC50	>5.850 mg/m <sup>3</sup> /4h	rat
Ethanol	64-17-5	inhalation: vapour	LC50	95,6 mg/l/4h	rat
Ethanol	64-17-5	oral	LD50	7.060 mg/kg	rat
2-Propanol	67-63-0	inhalation: vapour	LC50	37,5 mg/l/4h	rat
2-Propanol	67-63-0	oral	LD50	5.045 mg/kg	rat
2-Propanol	67-63-0	dermal	LD50	12.800 mg/kg	rabbit
Ammonium chloride	12125-02-9	oral	LD50	1.410 mg/kg	rat
Ammonium chloride	12125-02-9	dermal	LD50	>2.000 mg/kg	rat
Methanol	67-56-1	inhalation: vapour	LC50	131 mg/l/4h	rat
Methanol	67-56-1	oral	LD50	5.628 mg/kg	rat
Methanol	67-56-1	oral	LDLo	143 mg/kg	human
Methanol	67-56-1	dermal	LD50	15.800 mg/kg	rabbit
Ethylene glycol	107-21-1	dermal	LD50	>3.500 mg/kg	mouse
Ethylene glycol	107-21-1	oral	LD50	4.700 mg/kg	rat
DL-Lactic acid	598-82-3	oral	LD50	3.543 mg/kg	rat
DL-Lactic acid	598-82-3	inhalation: dust/mist	LC50	>7,94 mg/l/4h	rat
DL-Lactic acid	598-82-3	dermal	LD50	>2.000 mg/kg	rabbit

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Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
Sodium azide	26628-22-8	inhalation: dust/mist	LC50	>0,054 - <0,52 mg <sub>i</sub> /4h	rat
Sodium azide	26628-22-8	oral	LD50	27 mg/kg	rat
Sodium azide	26628-22-8	dermal	LD50	20 mg/kg	rat

## Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

## Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

## Respiratory or skin sensitisation

May cause an allergic skin reaction.

## Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

## Carcinogenicity

Shall not be classified as carcinogenic.

## Reproductive toxicity

Shall not be classified as a reproductive toxicant.

## Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

## Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

## Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

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

### • If swallowed

Data are not available.

### • If in eyes

Data are not available.

### • If inhaled

Data are not available.

### • If on skin

May produce an allergic reaction, pruritis, localised redness

### • Other information

none

## 11.2 Endocrine disrupting properties

None of the ingredients are listed.

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## 11.3 Information on other hazards

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Hexamethylene tetramine	100-97-0	EC50	36 mg/l	daphnia magna	48 h
Hexamethylene tetramine	100-97-0	LC50	41 g/l	fish	96 h
Citric acid	77-92-9	LC50	440 mg/l	fish	48 h
Glycerine	56-81-5	LC50	54.000 mg/l	fish	96 h
Ethanol	64-17-5	LC50	8.140 mg/l	orfe (Leuciscus idus)	96 h
Ethanol	64-17-5	EC50	9.000 – 14.000 mg/l	daphnia magna	48 h
2-Propanol	67-63-0	LC50	9.640 mg/l	Pimephales promelas	96 h
Ammonium chloride	12125-02-9	LC50	42,91 mg/l	fish	96 h
Ammonium chloride	12125-02-9	EC50	101 mg/l	aquatic invertebrates	48 h
Methanol	67-56-1	LC50	15.400 mg/l	fish	96 h
Methanol	67-56-1	ErC50	22.000 mg/l	algae	96 h
Ethylene glycol	107-21-1	LC50	>72.860 mg/l	fish	96 h
Ethylene glycol	107-21-1	EC50	>100 mg/l	daphnia magna	48 h
Ethylene glycol	107-21-1	ErC50	<13.000 mg/l	algae	96 h
DL-Lactic acid	598-82-3	EC50	250 mg/l	aquatic invertebrates	48 h
DL-Lactic acid	598-82-3	ErC50	3,5 g/l	algae	72 h
Sodium azide	26628-22-8	LC50	2,75 mg/l	fish	96 h
Sodium azide	26628-22-8	EC50	0,35 mg/l	algae	96 h

Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Hexamethylene tetramine	100-97-0	ErC50	3 g/l	algae	14 d
Hexamethylene tetramine	100-97-0	EC50	>5.000 mg/l	microorganisms	30 min
2-Propanol	67-63-0	LC50	>10.000 mg/l	aquatic invertebrates	24 h

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Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Ammonium chloride	12125-02-9	ErC50	1.300 mg/l	algae	5 d
Ammonium chloride	12125-02-9	EC50	2.700 mg/l	algae	18 d
Ethylene glycol	107-21-1	LC50	>1.500 mg/l	fish	28 d
Ethylene glycol	107-21-1	EC50	>15.000 mg/l	aquatic invertebrates	21 d
DL-Lactic acid	598-82-3	EC50	>88,2 mg/l	microorganisms	3 h
Sodium azide	26628-22-8	EC50	79,3 mg/l	microorganisms	3 h

## Biodegradation

The relevant substances of the mixture are readily biodegradable.

### 12.2 Process of degradability

Degradability of components of the mixture						
Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
Hexamethylenetetramine	100-97-0	biotic/abiotic	45 %	28 d	MITI-Test	
Hexamethylenetetramine	100-97-0	oxygen depletion	35 %	28 d		ECHA
Hexamethylenetetramine	100-97-0	DOC removal	39 %	28 d		ECHA
Citric acid	77-92-9	biotic/abiotic	98 %	2 d		
Glycerine	56-81-5	biotic/abiotic	63 %	14 d		
Ethanol	64-17-5	biotic/abiotic	94 %	d		
2-Propanol	67-63-0	biotic/abiotic	95 %	21 d	modifizierter OECD Screening Test	
2-Propanol	67-63-0	oxygen depletion	53 %	5 d		ECHA
Methanol	67-56-1	biotic/abiotic	99 %	30 d		
Methanol	67-56-1	oxygen depletion	69 %	5 d		ECHA
Ethylene glycol	107-21-1	biotic/abiotic	83 – 96 %	14 d		
Ethylene glycol	107-21-1	DOC removal	90 – 100 %	10 d		ECHA

### 12.3 Bioaccumulative potential

Data are not available.



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Bioaccumulative potential of components of the mixture				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Hexamethylene tetramine	100-97-0		-2,18 (20 °C)	
Citric acid	77-92-9		-1,64	
Glycerine	56-81-5		-1,75 (pH value: 7,4, 25 °C)	
Ethanol	64-17-5		-0,31	
2-Propanol	67-63-0		0,05	
Ammonium chloride	12125-02-9		-4,37	
Methanol	67-56-1		-0,77	
Ethylene glycol	107-21-1		-1,36	
DL-Lactic acid	598-82-3		-0,54 (25 °C)	

## 12.4 Mobility in soil

Data are not available.

## 12.5 Results of PBT and vPvB assessment

Data are not available.

## 12.6 Endocrine disrupting properties

None of the ingredients are listed.

## 12.7 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains.

### 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

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## SECTION 14: Transport information

- 14.1 UN number or ID number** not subject to transport regulations
- 14.2 UN proper shipping name** not assigned
- 14.3 Transport hazard class(es)** none
- 14.4 Packing group** not assigned
- 14.5 Environmental hazards** non-environmentally hazardous acc. to the dangerous goods regulations
- 14.6 Special precautions for user**  
There is no additional information.
- 14.7 Maritime transport in bulk according to IMO instruments**  
The cargo is not intended to be carried in bulk.

### 14.8 Information for each of the UN Model Regulations

#### Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

Not subject to ADR, RID and ADN.

#### International Maritime Dangerous Goods Code (IMDG) - Additional information

Not subject to IMDG.

#### International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

## SECTION 15: Regulatory information

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

#### Relevant provisions of the European Union (EU)

##### Seveso Directive

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
	not assigned		

##### Deco-Paint Directive

VOC content	3 - <10 % 909,4 g/l
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##### Industrial Emissions Directive (IED)

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VOC content	3 – <10 %
VOC content (Water content was discounted)	909,4 g/l

### Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

none of the ingredients are listed

### Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

none of the ingredients are listed

### Water Framework Directive (WFD)

List of pollutants (WFD)				
Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Hexamethylene tetramine	Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		a)	
Ammonium chloride	Substances which contribute to eutrophication (in particular, nitrates and phosphates)		a)	
Sodium azide	Metals and their compounds		a)	
Ethanol	Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		a)	
Methanol	Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		a)	
2-Propanol	Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		a)	

#### Legend

A) Indicative list of the main pollutants

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## Regulation on the marketing and use of explosives precursors

Explosives precursors which are subject to restrictions						
Name of substance	CAS No	Wt%	Type of registration	Re- marks	Limit value	Upper limit value for the pur- pose of licens- ing un- der Art- icle 5(3)
Hexamethylene tetramine	100-97-0	2,4	Annex II			

### Legend

annex II Substances on their own or in mixtures or in substances for which suspicious transactions shall be reported

### Additional statements

If the product is passed on to third parties, in accordance with Article 7 "Notification of the supply chain" of Regulation EU 2019/1148, the information obligation is subject to the entire supply chain and all other provisions mentioned in Article 7 on restricted and regulated raw materials.

### Regulation on drug precursors

none of the ingredients are listed

### Regulation on substances that deplete the ozone layer (ODS)

none of the ingredients are listed

### Regulation concerning the export and import of hazardous chemicals (PIC)

none of the ingredients are listed

### Regulation on persistent organic pollutants (POP)

none of the ingredients are listed

### National regulations(GB)

#### List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

none of the ingredients are listed

#### Restrictions according to GB REACH, Annex 17

Dangerous substances with restrictions (GB REACH, Annex 17)			
Name of substance	Name acc. to inventory	CAS No	No
ROTI®Histofix ECO Plus	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		3
Hexamethylene tetramine	flammable / pyrophoric		40
Ammonium chloride	Inorganic ammonium salts		65

### Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

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## National inventories

Country	Inventory	Status
AU	AIIC	not all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	not all ingredients are listed
JP	CSCL-ENCS	not all ingredients are listed
JP	ISHA-ENCS	not all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	not all ingredients are listed
NZ	NZIoC	not all ingredients are listed
PH	PICCS	not all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	not all ingredients are listed

### Legend

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

## 15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

## SECTION 16: Other information

### Indication of changes (revised safety data sheet)

Alignment to regulation:

Restructuring: section 9, section 14

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.1	Classification according to Regulation (EC) No 1272/2008 (CLP): This mixture does not meet the criteria for classification in accordance with Regulation No 1272/2008/EC.	Classification acc. to GHS	yes
2.1		Classification acc. to GHS: change in the listing (table)	yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.2	Labelling according to Regulation (EC) No 1272/2008 (CLP): not required	Labelling	yes
2.2		Signal word: Warning	yes
2.2		Pictograms	yes
2.2		Pictograms: change in the listing (table)	yes
2.2		Hazard statements	yes
2.2		Hazard statements: change in the listing (table)	yes
2.2		Precautionary statements	yes
2.2		Precautionary statements - prevention	yes
2.2		Precautionary statements - prevention: change in the listing (table)	yes
2.2		Precautionary statements - response	yes
2.2		Precautionary statements - response: change in the listing (table)	yes

## Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2000/39/EC	Commission Directive establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC
2006/15/EC	Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
Acute Tox.	Acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level

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Abbr.	Descriptions of used abbreviations
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EH40/2005	EH40/2005 Workplace exposure limits ( <a href="http://www.nationalarchives.gov.uk/doc/open-government-licence/">http://www.nationalarchives.gov.uk/doc/open-government-licence/</a> )
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
Flam. Sol.	Flammable solid
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
log KOW	n-Octanol/water
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitisation

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Abbr.	Descriptions of used abbreviations
STEL	Short-term exposure limit
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure
TWA	Time-weighted average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

## Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

## Classification procedure

Physical and chemical properties. The classification is based on tested mixture. Health hazards. Environmental hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

## List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H225	Highly flammable liquid and vapour.
H228	Flammable solid.
H300	Fatal if swallowed.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H370	Causes damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.



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## **Disclaimer**

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.