

Safety Data Sheet

according to Regulation (EC) No 1907/2006

HEPU ANTIFREEZE P999

Print date: 05.11.2015

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

1.1. Product identifier

HEPU ANTIFREEZE P999

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

1.3. Details of the supplier of the safety data sheet

Company name: HEPU-Autoteile GmbH
Street: Am Kreuzweg 2
Place: D-32689 Kalletal
Telephone: +49 (0)5264 6483-40 Telefax: +49 (0)5264 6483-44
e-mail: info@hepu.de
Internet: www.hepu.de
Responsible Department: Kundenservice

1.4. Emergency telephone number: Giftnotruf NRW (DE; E) +49(0)228-19 240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC

Indications of danger: Xn -Harmful
R phrases:
Harmful if swallowed.

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

Hazard categories:
Acute toxicity: Acute Tox. 4
Specific target organ toxicity - repeated exposure: STOT RE 2
Hazard Statements:
Harmful if swallowed.
May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazardous components which must be listed on the label

ethanediol, ethylene glycol

Signal word: Warning

Pictograms: GHS07-GHS08



Hazard statements

H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P102 Keep out of reach of children.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P314 Get medical advice/attention if you feel unwell.

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2.3. Other hazards

following inhalation: Vapour and mist concentrations above the allowable levels or unusually high concentrations may cause irritation to the nose and throat as well as headache, nausea and drowsiness.

After skin contact: Brief contact with the product may cause slight skin irritation. Prolonged contact (e.g. through soaked clothing) may result in serious skin irritation with symptoms such as redness and swelling.

Following eye contact: Conjunctival redness.

after ingestion: Oral ingestion of small amounts causes kidney damage.

Caution if victim vomits: Risk of aspiration!

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Hazardous components**

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
203-473-3	ethanediol, ethylene glycol	90 - < 95 %
107-21-1	Xn - Harmful R22	
603-027-00-1	Acute Tox. 4, STOT RE 2; H302 H373	
01-2119456816-28		

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

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Take off contaminated clothing.
Self-protection of the first aider

After inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

After contact with skin

Wash with plenty of water. Change contaminated clothing. IF ON SKIN: Wash with plenty of water/?.
If skin irritation or rash occurs: Get medical advice/attention.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of troubles or persistent symptoms, consult an ophthalmologist. Call a physician immediately.
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion

Medical treatment necessary. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.
Rinse mouth immediately and drink plenty of water.
Do NOT induce vomiting.

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

Ethylene glycol poisoning may cause initial symptoms such as behavioral disorders, drowsiness, vomiting, diarrhea, thirst and spasms. Kidney damage and kidney failure along with metabolic acidosis

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are late poisoning symptoms. Prompt medical treatment complemented by haemodialysis, if necessary, can reduce the toxic effect. Intravenous administration of ethanol in a sodium bicarbonate solution is a recognized antidote. For further treatment information, please consult the Poison Control Centre.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. Dry extinguishing powder. Water fog. Foam. Carbon dioxide.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

The product itself does not burn. Special exposure hazards arising from the substance itself, combustion products, resulting gases: Carbon monoxide. carbon black Pyrolysis products, toxic.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Use water spray jet to protect personnel and to cool endangered containers. Move undamaged containers from immediate hazard area if it can be done safely. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment. Do not breathe gas/fumes/vapour/spray. Special danger of slipping by leaking/spilling product. Ventilate affected area.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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). Treat the recovered material as prescribed in the section on waste disposal. Prevent spread over a wide area (e.g. by containment or oil barriers). Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Take up mechanically, placing in appropriate containers for disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin and eyes. Wash hands thoroughly after handling. Protect skin by using skin protective cream.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

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Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only.
 Keep container in a well-ventilated place.

Advice on storage compatibility

Do not store together with: Oxidizing agents.
 Do not store together with: Food and fodder

Further information on storage conditions

Keep away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits(EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink. Do not eat, drink, smoke or sneeze at the workplace. Keep away from food, drink and animal feedingstuffs. Protect skin by using skin protective cream. Wash hands before breaks and after work. Apply skin care products after work. Remove contaminated, saturated clothing immediately. Do not put any product-impregnated cleaning rags into your trouser pockets.

Eye/face protection

Wear eye/face protection.

Hand protection

Avoid contact with skin.
 Tested protective gloves are to be worn: Butyl rubber. / NBR (Nitrile rubber).

Skin protection

Body protection: not required.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
 Colour: blue
 Odour: characteristic

Test method

pH-Value (at 20 °C): 7,8-8,6 (50% in H₂O)

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Changes in the physical state

Melting point:	No data available.
Initial boiling point and boiling range:	not determined
Ignition temperature in °C:	>400 °C DIN 51794
Flash point:	>100 °C DIN 51758
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Vapour pressure: (at 20 °C)	<0,1 hPa
Density (at 20 °C):	1,12 g/cm ³ DIN 51757
Water solubility:	completely miscible
Viscosity / kinematic: (at 20 °C)	>20 mm ² /s DIN 51562

9.2. Other information

Solid content: 0%

SECTION 10: Stability and reactivity**10.1. Reactivity**

This product is stable under normal conditions. Hazardous reactions are unlikely.

10.3. Possibility of hazardous reactions

possible with strong oxidizing agents.

This product is stable under normal conditions. Hazardous reactions are unlikely.

10.4. Conditions to avoid

Oxidizing agents, strong.

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition products

none

Further information

none

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity**

Acute toxicity, dermal.

ATEmix calculated

ATE (oral) 543,9 mg/kg

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
107-21-1	ethanediol, ethylene glycol	oral	LD50	4000 mg/kg		
		dermal	LD50	10600 mg/kg	Rabbit	GESTIS

Irritation and corrosivity

Frequently or prolonged contact with skin may cause dermal irritation.

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Sensitising effects

not determined

Severe effects after repeated or prolonged exposure

Frequently or prolonged contact with skin may cause dermal irritation.

Carcinogenic/mutagenic/toxic effects for reproduction

The product is not classified.

Specific effects in experiment on an animal

No data available

Additional information on tests

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Oral ingestion of small amounts causes kidney damage.

Contact with the eyes causes eye inflammation.

Inhalation of mists and vapours causes impaired consciousness.

Further information

No special hazards known when the product is properly used and the precautionary measures indicated are observed.

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name		Method	Dose	[h] [d]	Species	Source
107-21-1	ethanediol, ethylene glycol						
	Acute fish toxicity	LC50	18500 mg/l	96 h		Oncorhynchus mykiss (Rainbow trout)	
	Acute algae toxicity	ErC50 mg/l	6500 - 7500	96 h		Pseudokirchneriella subcapitata	
	Acute crustacea toxicity	EC50 mg/l	> 10,000	48 h		Daphnia magna	

12.2. Persistence and degradability

According to EU criteria: expected to biodegrade fast The product basis (ethylene glycol) itself is readily biodegradable.

12.3. Bioaccumulative potential

Biological degradation: Yes, rapidly

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethanediol, ethylene glycol	-1,34

Further information

Do not allow to enter into surface water or drains. The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

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160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of used product

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances
Classified as hazardous waste.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself. Contaminated packaging should be emptied to the maximum possible extent. After appropriate cleaning, it can be routed to reuse. Packaging not amenable to cleaning must be disposed of in accordance with the statutory regulations.

SECTION 14: Transport information

Land transport (ADR/RID)

Other applicable information (land transport)

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

Other applicable information (marine transport)

No dangerous good in sense of this transport regulation.

Air transport (ICAO)

Other applicable information (air transport)

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

National regulatory information

Water contaminating class (D): 2 - water contaminating

SECTION 16: Other information

Relevant R-phrases (Number and full text)

22 Harmful if swallowed.

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

H302 Harmful if swallowed.

H373 May cause damage to kidneys through prolonged or repeated exposure by swallowing.

H373 May cause damage to organs through prolonged or repeated exposure.



MADE IN GERMANY

HEPU-Autoteile GmbH

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(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)

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

1.1. Product identifier

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

against Use of the substance/mixture

Radiator anti-freeze

1.3. Details of the supplier of the safety data sheet

Company name: HEPU-Autoteile GmbH
Street: Am Kreuzweg 2
Place: D-32689 Kalletal
Telephone: +49 (0)5264 6483-40 Telefax: +49 (0)5264 6483-44
e-mail: info@hepu.de
Internet: www.hepu.de
Responsible Department: Kundenservice

1.4. Emergency telephone number: Giftnotruf NRW (DE; E) +49 (0)228-19 240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC

Indications of danger: Xn -Harmful
R phrases:
Harmful if swallowed.

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

Hazard categories:
Acute toxicity: Acute Tox. 4
Specific target organ toxicity - repeated exposure: STOT RE2
Hazard Statements:
Harmful if swallowed.
May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazardous components which must be listed on the label

ethanediol, ethylene glycol

Signal word: Warning
Pictograms: GHS07-GHS08



Hazard statements

H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P102 Keep out of reach of children.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

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P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 P330 Rinse mouth.
 P314 Get medical advice/attention if you feel unwell.

2.3. Other hazards

following inhalation: Vapour and mist concentrations above the allowable levels or unusually high concentrations may cause irritation to the nose and throat as well as headache, nausea and drowsiness.
 After skin contact: Brief contact with the product may cause slight skin irritation. Prolonged contact (e.g. through soaked clothing) may result in serious skin irritation with symptoms such as redness and swelling.
 Following eye contact: Conjunctival redness.
 after ingestion: Oral ingestion of small amounts causes kidney damage.
 Caution if victim vomits: Risk of aspiration!

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
203-473-3	ethanediol, ethylene glycol	90 - < 95 %
107-21-1	Xn - Harmful R22	
603-027-00-1	Acute Tox. 4, STOT RE 2; H302 H373	
01-2119456816-28		

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

SECTION 4: First aid measures

4.1. Description of first aid

measures General information

Take off contaminated clothing.
 Self-protection of the first aider

After inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.
 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

After contact with skin

Wash with plenty of water. Change contaminated clothing. IF ON SKIN: Wash with plenty of water/?.
 If skin irritation or rash occurs: Get medical advice/attention.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of troubles or persistent symptoms, consult an ophthalmologist. Call a physician immediately.
 In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion

Medical treatment necessary. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.
 Rinse mouth immediately and drink plenty of water.
 Do NOT induce vomiting.

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

Ethylene glycol poisoning may cause initial symptoms such as behavioral disorders, drowsiness, vomiting, diarrhea, thirst and spasms. Kidney damage and kidney failure along with metabolic acidosis are late poisoning symptoms. Prompt medical treatment complemented by haemodialysis, if necessary, can reduce the toxic effect. Intravenous administration of ethanol in a sodium bicarbonate solution is a recognized antidote. For further treatment information, please consult the Poison Control Centre.

SECTION 5: Firefighting measures

5.1. Extinguishing

media Suitable

extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. Dry extinguishing powder. Water fog. Foam. Carbon dioxide.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

The product itself does not burn. Special exposure hazards arising from the substance itself, combustion products, resulting gases: Carbon monoxide. carbon black Pyrolysis products, toxic.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Use water spray jet to protect personnel and to cool endangered containers. Move undamaged containers from immediate hazard area if it can be done safely. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment. Do not breathe gas/fumes/vapour/spray. Special danger of slipping by leaking/spilling product. Ventilate affected area.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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). Treat the recovered material as prescribed in the section on waste disposal. Prevent spread over a wide area (e.g. by containment or oil barriers). Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Take up mechanically, placing in appropriate containers for disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe

handling Advice on safe

handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin and eyes.

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Wash hands thoroughly after handling.
Protect skin by using skin protective cream.

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Advice on protection against fire and explosion

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Keep container in a well-ventilated place.

Advice on storage compatibility

Do not store together with: Oxidizing agents.
Do not store together with: Food and fodder

Further information on storage conditions

Keep away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits(EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink. Do not eat, drink, smoke or sneeze at the workplace. Keep away from food, drink and animal feedingstuffs. Protect skin by using skin protective cream. Wash hands before breaks and after work. Apply skin care products after work. Remove contaminated, saturated clothing immediately. Do not put any product-impregnated cleaning rags into your trouser pockets.

Eye/face protection

Wear eye/face protection.

Hand protection

Avoid contact with skin.
Tested protective gloves are to be worn: Butyl rubber. / NBR (Nitrile rubber).

Skin protection

Body protection: not required.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
Colour: red

Test method

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pH-Value:	7,5-9 (33%)
Changes in the physical state	
Initial boiling point and boilingrange:	120 °C
Ignition temperature in °C::	>400 °C DIN 51794
Flash point:	>110 °C DIN 51758
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Auto-ignition temperature	
Solid:	No data available
Gas:	No data available
Vapour pressure: (at 20 °C)	<0,1 hPa
Density (at 20 °C):	1,123 g/cm ³ DIN 51757
Water solubility:	completely miscible
Viscosity / kinematic: (at 20 °C)	>22 mm ² /s DIN 51562

9.2. Other information

Kapitel 9:
Anpassung der kinematischen Viskosität auf >22
Berger

SECTION 10: Stability and reactivity

10.3. Possibility of hazardous reactions

possible with strong oxidizing agents.
This product is stable under normal conditions. Hazardous reactions are unlikely.

10.5. Incompatible materials

Etchant and acids

10.6. Hazardous decomposition products

none

Further information

No thermal decomposition if properly stored / handled /transported.

SECTION 11: Toxicological information

11.1. Information on toxicological

effects Acute toxicity

Acute toxicity, dermal.

ATEmix calculated

ATE (oral) 538,6 mg/kg

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
107-21-1	ethanediol, ethylene glycol	oral	LD50	4000 mg/kg		
		dermal	LD50	10600 mg/kg	Rabbit	GESTIS

Irritation and corrosivity

Frequently or prolonged contact with skin may cause dermal irritation.

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Sensitising effects

not determined

Severe effects after repeated or prolonged exposure

Frequently or prolonged contact with skin may cause dermal irritation.

Carcinogenic/mutagenic/toxic effects for reproduction

The product is not classified.

Specific effects in experiment on an animal

No data available

Additional information on tests

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Oral ingestion of small amounts causes kidney damage.

Contact with the eyes causes eye inflammation.

Inhalation of mists and vapours causes impaired consciousness.

Further information

No special hazards known when the product is properly used and the precautionary measures indicated are observed.

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
107-21-1	ethanediol, ethylene glycol					
	Acute fish toxicity	LC50	18500 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	
	Acute algae toxicity	ErC50 mg/l	6500 - 7500	96 h	Pseudokirchneriella subcapitata	
	Acute crustacea toxicity	EC50 mg/l	> 10,000	48 h	Daphnia magna	

12.2. Persistence and degradability

According to EU criteria: expected to biodegrade fast The product basis (ethylene glycol) itself is readily biodegradable.

12.3. Bioaccumulative potential

No data available.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethanediol, ethylene glycol	-1,34

12.4. Mobility in soil

No data available.

Further information

Do not allow to enter into surface water or drains. The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation.

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Waste disposal number of waste from residues/unused products

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of used product

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of contaminated packaging

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself. Contaminated packaging should be emptied to the maximum possible extent. After appropriate cleaning, it can be routed to reuse. Packaging not amenable to cleaning must be disposed of in accordance with the statutory regulations.

SECTION 14: Transport information

Land transport (ADR/RID)

Other applicable information (land transport)

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

Other applicable information (marine transport)

No dangerous good in sense of this transport regulation.

Air transport (ICAO)

Other applicable information (air transport)

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

mixture National regulatory information

Water contaminating class (D): 1 - slightly water contaminating

SECTION 16: Other information

Relevant R-phrases (Number and full text)

22 Harmful if swallowed.

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

H302 Harmful if swallowed.

H373 May cause damage to kidneys through prolonged or repeated exposure by swallowing.

H373 May cause damage to organs through prolonged or repeated exposure.

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(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)

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

1.1. Product identifier

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

Use of the substance/mixture

Radiator anti-freeze

1.3. Details of the supplier of the safety data sheet

Company name: HEPU-Autoteile GmbH
Street: Am Kreuzweg 2
Place: D-32689 Kalletal
Telephone: +49 (0)5264 6483-40 Telefax: +49 (0)5264 6483-44
e-mail: info@hepu.de
Internet: www.hepu.de
Responsible Department: Kundenservice

1.4. Emergency telephone number: Giftnotruf NRW (DE; E) +49 (0)228-19 240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC

Indications of danger: Xn - Harmful
R phrases:
Harmful if swallowed.

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

Hazard categories:
Acute toxicity: Acute Tox. 4
Specific target organ toxicity - repeated exposure: STOT RE2
Hazard Statements:
Harmful if swallowed.
May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazardous components which must be listed on the label

ethanediol, ethylene glycol

Signal word: Warning
Pictograms: GHS07-GHS08



Hazard statements

H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P102 Keep out of reach of children.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

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P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 P330 Rinse mouth.
 P314 Get medical advice/attention if you feel unwell.

2.3. Other hazards

following inhalation: Vapour and mist concentrations above the allowable levels or unusually high concentrations may cause irritation to the nose and throat as well as headache, nausea and drowsiness.
 After skin contact: Brief contact with the product may cause slight skin irritation. Prolonged contact (e.g. through soaked clothing) may result in serious skin irritation with symptoms such as redness and swelling.
 Following eye contact: Conjunctival redness.
 after ingestion: Oral ingestion of small amounts causes kidney damage.
 Caution if victim vomits: Risk of aspiration!

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
203-473-3	ethanediol, ethylene glycol	90 - < 95 %
107-21-1	Xn - Harmful R22	
603-027-00-1	Acute Tox. 4, STOT RE 2; H302 H373	
01-2119456816-28		

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Take off contaminated clothing.
 Self-protection of the first aider

After inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.
 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

After contact with skin

Wash with plenty of water. Change contaminated clothing. IF ON SKIN: Wash with plenty of water/?.
 If skin irritation or rash occurs: Get medical advice/attention.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of troubles or persistent symptoms, consult an ophthalmologist. Call a physician immediately.
 In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion

Medical treatment necessary. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.
 Rinse mouth immediately and drink plenty of water.
 Do NOT induce vomiting.

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

Ethylene glycol poisoning may cause initial symptoms such as behavioral disorders, drowsiness, vomiting, diarrhea, thirst and spasms. Kidney damage and kidney failure along with metabolic acidosis are late poisoning symptoms. Prompt medical treatment complemented by haemodialysis, if necessary, can reduce the toxic effect. Intravenous administration of ethanol in a sodium bicarbonate solution is a recognized antidote. For further treatment information, please consult the Poison Control Centre.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. Dry extinguishing powder. Water fog. Foam. Carbon dioxide.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

The product itself does not burn. Special exposure hazards arising from the substance itself, combustion products, resulting gases: Carbon monoxide. carbon black Pyrolysis products, toxic.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Use water spray jet to protect personnel and to cool endangered containers. Move undamaged containers from immediate hazard area if it can be done safely. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment. Do not breathe gas/fumes/vapour/spray. Special danger of slipping by leaking/spilling product. Ventilate affected area.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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). Treat the recovered material as prescribed in the section on waste disposal. Prevent spread over a wide area (e.g. by containment or oil barriers). Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Take up mechanically, placing in appropriate containers for disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin and eyes. Wash hands thoroughly after handling. Protect skin by using skin protective cream.

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Advice on protection against fire and explosion

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only.
Keep container in a well-ventilated place.

Advice on storage compatibility

Do not store together with: Oxidizing agents.

Do not store together with: Food and fodder

Further information on storage conditions

Keep away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits(EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink. Do not eat, drink, smoke or sneeze at the workplace. Keep away from food, drink and animal feedingstuffs. Protect skin by using skin protective cream. Wash hands before breaks and after work. Apply skin care products after work. Remove contaminated, saturated clothing immediately. Do not put any product-impregnated cleaning rags into your trouser pockets.

Eye/face protection

Wear eye/face protection.

Hand protection

Avoid contact with skin.

Tested protective gloves are to be worn: Butyl rubber. / NBR (Nitrile rubber).

Skin protection

Body protection: not required.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
Colour: magenta

Test method

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pH-Value: 7,5-9 (33%)

Changes in the physical state

Initial boiling point and boilingrange: 120 °C
 Ignition temperature in °C:: >400 °C DIN 51794
 Flash point: >110 °C DIN 51758
 Lower explosion limits: not determined
 Upper explosion limits: not determined

Auto-ignition temperature

Solid: No data available
 Gas: No data available

Vapour pressure: <0,1 hPa
 (at 20 °C)

Density (at 20 °C): 1,123 g/cm³ DIN 51757

Water solubility: completely miscible

Viscosity / kinematic: >22 mm²/s DIN 51562
 (at 20 °C)

9.2. Other information

Kapitel 9:
 Anpassung der kinematischen Viskosität auf >22
 Berger

SECTION 10: Stability and reactivity

10.3. Possibility of hazardous reactions

possible with strong oxidizing agents.
 This product is stable under normal conditions. Hazardous reactions are unlikely.

10.5. Incompatible materials

Etchant and acids

10.6. Hazardous decomposition products

none

Further information

No thermal decomposition if properly stored / handled /transported.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Acute toxicity, dermal.

ATEmix calculated

ATE (oral) 538,6 mg/kg

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
107-21-1	ethanediol, ethylene glycol				
	oral	LD50	4000 mg/kg		
	dermal	LD50	10600 mg/kg	Rabbit	GESTIS

Irritation and corrosivity

Frequently or prolonged contact with skin may cause dermal irritation.

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Sensitising effects

not determined

Severe effects after repeated or prolonged exposure

Frequently or prolonged contact with skin may cause dermal irritation.

Carcinogenic/mutagenic/toxic effects for reproduction

The product is not classified.

Specific effects in experiment on an animal

No data available

Additional information on tests

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Oral ingestion of small amounts causes kidney damage.

Contact with the eyes causes eye inflammation.

Inhalation of mists and vapours causes impaired consciousness.

Further information

No special hazards known when the product is properly used and the precautionary measures indicated are observed.

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name		Method	Dose	[h] [d]	Species	Source
107-21-1	ethanediol, ethylene glycol						
	Acute fish toxicity	LC50	18500 mg/l	96 h		Oncorhynchus mykiss (Rainbow trout)	
	Acute algae toxicity	ErC50 mg/l	6500 - 7500	96 h		Pseudokirchneriella subcapitata	
	Acute crustacea toxicity	EC50 mg/l	> 10,000	48 h		Daphnia magna	

12.2. Persistence and degradability

According to EU criteria: expected to biodegrade fast The product basis (ethylene glycol) itself is readily biodegradable.

12.3. Bioaccumulative potential

No data available.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethanediol, ethylene glycol	-1,34

12.4. Mobility in soil

No data available.

Further information

Do not allow to enter into surface water or drains. The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation.

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Waste disposal number of waste from residues/unused products

- 160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of used product

- 160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of contaminated packaging

- 160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself. Contaminated packaging should be emptied to the maximum possible extent. After appropriate cleaning, it can be routed to reuse. Packaging not amenable to cleaning must be disposed of in accordance with the statutory regulations.

SECTION 14: Transport information**Land transport (ADR/RID)****Other applicable information (land transport)**

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)**Other applicable information (inland waterways transport)**

No dangerous good in sense of this transport regulation.

Marine transport (IMDG)**Other applicable information (marine transport)**

No dangerous good in sense of this transport regulation.

Air transport (ICAO)**Other applicable information (air transport)**

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulatory information**

Water contaminating class (D): 1 - slightly water contaminating

SECTION 16: Other information**Relevant R-phrases (Number and full text)**

22 Harmful if swallowed.

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

H302 Harmful if swallowed.

H373 May cause damage to kidneys through prolonged or repeated exposure by swallowing.

H373 May cause damage to organs through prolonged or repeated exposure.

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2.3. Other hazards

following inhalation: Vapour and mist concentrations above the allowable levels or unusually high concentrations may cause irritation to the nose and throat as well as headache, nausea and drowsiness.
After skin contact: Brief contact with the product may cause slight skin irritation. Prolonged contact (e.g. through soaked clothing) may result in serious skin irritation with symptoms such as redness and swelling.
Following eye contact: Conjunctival redness.
after ingestion: Oral ingestion of small amounts causes kidney damage.
Caution if victim vomits: Risk of aspiration!

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Hazardous components**

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
203-473-3	ethanediol, ethylene glycol	60 - < 100 %
107-21-1	Xn - Harmful R22	
603-027-00-1	Acute Tox. 4; H302	
203-473-3	ethanediol	15 - < 30 %
107-21-1	Xn - Harmful R22	
603-027-00-1	Acute Tox. 4; H302	
228-565-0	Ethoxylated amine	< 1 %
6295-57-4	Xn - Harmful, Xi - Irritant, N - Dangerous for the environment R22-36-51-53	

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

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Take off contaminated clothing.
Self-protection of the first aider

After inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

After contact with skin

Wash with plenty of water. Change contaminated clothing. IF ON SKIN: Wash with plenty of water/?.
If skin irritation or rash occurs: Get medical advice/attention.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of troubles or persistent symptoms, consult an ophthalmologist. Call a physician immediately.
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

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After ingestion

Medical treatment necessary. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.
Rinse mouth immediately and drink plenty of water.
Do NOT induce vomiting.

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

Ethylene glycol poisoning may cause initial symptoms such as behavioral disorders, drowsiness, vomiting, diarrhea, thirst and spasms. Kidney damage and kidney failure along with metabolic acidosis are late poisoning symptoms. Prompt medical treatment complemented by haemodialysis, if necessary, can reduce the toxic effect. Intravenous administration of ethanol in a sodium bicarbonate solution is a recognized antidote. For further treatment information, please consult the Poison Control Centre.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings. Dry extinguishing powder. Water fog. Foam. Carbon dioxide.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

The product itself does not burn. Special exposure hazards arising from the substance itself, combustion products, resulting gases: Carbon monoxide. carbon black Pyrolysis products, toxic.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Use water spray jet to protect personnel and to cool endangered containers. Move undamaged containers from immediate hazard area if it can be done safely. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment. Do not breathe gas/fumes/vapour/spray. Special danger of slipping by leaking/spilling product.
Ventilate affected area.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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). Treat the recovered material as prescribed in the section on waste disposal. Prevent spread over a wide area (e.g. by containment or oil barriers). Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Take up mechanically, placing in appropriate containers for disposal.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

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Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin and eyes.
Wash hands thoroughly after handling.
Protect skin by using skin protective cream.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only.
Keep container in a well-ventilated place.

Advice on storage compatibility

Do not store together with: Oxidizing agents.
Do not store together with: Food and fodder

Further information on storage conditions

Keep away from heat.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

8.2. Exposure controls**Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink. Do not eat, drink, smoke or sneeze at the workplace. Keep away from food, drink and animal feedingstuffs. Protect skin by using skin protective cream. Wash hands before breaks and after work. Apply skin care products after work. Remove contaminated, saturated clothing immediately. Do not put any product-impregnated cleaning rags into your trouser pockets.

Eye/face protection

Wear eye/face protection.

Hand protection

Avoid contact with skin.
Tested protective gloves are to be worn: Butyl rubber. / NBR (Nitrile rubber).

Skin protection

Body protection: not required.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

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SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state: liquid
Colour: magenta

Test method

pH-Value: 7,5-8,8

Changes in the physical state

Initial boiling point and boiling range: not determined

Ignition temperature in °C: >400 °C DIN 51794

Flash point: >100 °C DIN 51758

Lower explosion limits: not determined

Upper explosion limits: not determined

Auto-ignition temperature

Solid: No data available

Gas: No data available

Vapour pressure:
(at 20 °C) <0,1 hPa

Density (at 20 °C): ~1,126 g/cm³ DIN 51757

Water solubility: completely miscible

Viscosity / kinematic:
(at 20 °C) >22 mm²/s ISO 3219

9.2. Other information

Solid content: 0

pH pur (pH pure) ~8

SECTION 10: Stability and reactivity**10.3. Possibility of hazardous reactions**

possible with strong oxidizing agents.

This product is stable under normal conditions. Hazardous reactions are unlikely.

10.5. Incompatible materials

Etchant and acids

10.6. Hazardous decomposition products

none

Further information

No thermal decomposition if properly stored / handled /transported.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity**

Acute toxicity, dermal.

ATEmix calculated

ATE (oral) 532,4 mg/kg

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CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
107-21-1	ethanediol, ethylene glycol				
	oral	ATE	500 mg/kg		
	dermal	LD50	10600 mg/kg	Rabbit	GESTIS
107-21-1	ethanediol				
	oral	ATE	500 mg/kg		

Irritation and corrosivity

Frequently or prolonged contact with skin may cause dermal irritation.

Sensitising effects

not determined

Severe effects after repeated or prolonged exposure

Frequently or prolonged contact with skin may cause dermal irritation.

Carcinogenic/mutagenic/toxic effects for reproduction

The product is not classified.

Specific effects in experiment on an animal

No data available

Additional information on tests

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Oral ingestion of small amounts causes kidney damage.

Contact with the eyes causes eye inflammation.

Inhalation of mists and vapours causes impaired consciousness.

Further information

No special hazards known when the product is properly used and the precautionary measures indicated are observed.

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
107-21-1	ethanediol					
	Acute fish toxicity	LC50	>10000 mg/l	96 h	Pimephales promelas	literature
	Acute algae toxicity	ErC50	>10000 mg/l	72 h	Selenastrum capricornutum	literature
	Acute crustacea toxicity	EC50	>10000 mg/l	48 h	Daphnia magna	literature

12.2. Persistence and degradability

According to EU criteria: expected to biodegrade fast The product basis (ethylene glycol) itself is readily biodegradable.

12.3. Bioaccumulative potential

No data available.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethanediol, ethylene glycol	-1,36
107-21-1	ethanediol	-1,36

12.4. Mobility in soil

No data available.

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Further information

Do not allow to enter into surface water or drains. The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Advice on disposal**

Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of used product

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances
Classified as hazardous waste.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself. Contaminated packaging should be emptied to the maximum possible extent. After appropriate cleaning, it can be routed to reuse. Packaging not amenable to cleaning must be disposed of in accordance with the statutory regulations.

SECTION 14: Transport information**Land transport (ADR/RID)****Other applicable information (land transport)**

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)**Other applicable information (inland waterways transport)**

No dangerous good in sense of this transport regulation.

Marine transport (IMDG)**Other applicable information (marine transport)**

No dangerous good in sense of this transport regulation.

Air transport (ICAO)**Other applicable information (air transport)**

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulatory information**

Water contaminating class (D): 1 - slightly water contaminating

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SECTION 16: Other information**Relevant R-phrases (Number and full text)**

- Harmful if swallowed.
- Irritating to eyes.
- Toxic to aquatic organisms.
- May cause long-term adverse effects in the aquatic environment.

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

- Harmful if swallowed.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)

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2.3. Other hazards

Following inhalation: Vapour and mist concentrations above the allowable levels or unusually high concentrations may cause irritation to the nose and throat as well as headache, nausea and drowsiness.
After skin contact: Brief contact with the product may cause slight skin irritation. Prolonged contact (e.g. through soaked clothing) may result in serious skin irritation with symptoms such as redness and swelling.
Following eye contact: Conjunctival redness.
after ingestion: Oral ingestion of small amounts causes kidney damage.
Caution if victim vomits: Risk of aspiration!

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Hazardous components**

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
203-473-3	ethanediol, ethylene glycol	60-100 %
107-21-1	Xn - Harmful R22	
603-027-00-1	Acute Tox. 4; H302	

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

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Change contaminated clothing.

After inhalation

Provide fresh air. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician immediately.

After contact with skin

Wash with plenty of water. Take off contaminated clothing and wash it before reuse. After contact with skin, wash immediately with plenty of water and soap.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist.

After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water. Medical treatment necessary. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Let water be drunken in little sips (dilution effect).

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

No information available.

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

Treat symptomatically. First Aid, decontamination, treatment of symptoms. No specific antidote known.

SECTION 5: Firefighting measures**5.1. Extinguishing media**

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Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. Dry extinguishing powder. Foam.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Non-flammable. In case of fire may be liberated: aerosol or mist generation. Gas/vapours, harmful.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Dispose of waste according to applicable legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Use personal protective equipment as required. Use appropriate respiratory protection.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

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). Treat the recovered material as prescribed in the section on waste disposal. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. No special measures required when used in accordance with the instructions.

Advice on protection against fire and explosion

Take precautionary measures against static discharges.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep container tightly closed in a cool place.

Advice on storage compatibility

Do not store together with: Oxidizing agents.

Do not store together with: Food and fodder

Further information on storage conditions

Keep away from heat.

7.3. Specific end use(s)

Radiator anti-freeze

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL
56-81-5	Glycerol, mist	-	10		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL

8.2. Exposure controls



Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink. Wear suitable protective clothing and gloves.

Eye/face protection

Wear eye/face protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. 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. Wear protective gloves. (EN 374 Butyl rubber. NBR (Nitrile rubber).)

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Wear breathing apparatus if exposed to vapours/dusts/aerosols. (particulates filter device (DIN EN 143).)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
 Colour: magenta
 Odour: characteristic

Test method

pH-Value: ~8,6 ASTM D1287

Changes in the physical state

Melting point: not determined

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Initial boiling point and boiling range: >170 °C ASTM D 1120

Flash point: not determined

Flammability

Solid: No data available

Gas: No data available

Lower explosion limits: No data available

Upper explosion limits: No data available

Ignition temperature: >200 °C DIN 51794

Auto-ignition temperature

Solid: not applicable

Gas: not applicable

Decomposition temperature: not determined

Oxidizing properties

Not oxidizing.

Vapour pressure: not determined

Density (at 20 °C): ~1,13 g/cm³ DIN 51757

Water solubility: completely miscible

Solubility in other solvents

not determined

Partition coefficient: not determined

Viscosity / kinematic:
(at 20 °C) >22 mm²/s DIN 51562

Vapour density: not determined

Evaporation rate: not determined

9.2. Other information

Solid content: not determined

SECTION 10: Stability and reactivity**10.1. Reactivity**

This product is stable under normal conditions. Hazardous reactions are unlikely.

10.2. Chemical stability

This product is stable under normal conditions. Hazardous reactions are unlikely.

10.3. Possibility of hazardous reactions

This product is stable under normal conditions. Hazardous reactions are unlikely.

10.4. Conditions to avoid

none

10.5. Incompatible materials

Oxidizing agents, strong. Strong acid

10.6. Hazardous decomposition products

No hazardous decomposition products known.

Further information

none

SECTION 11: Toxicological information

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11.1. Information on toxicological effects**Acute toxicity**

Acute toxicity, dermal.

ATEmix calculated

ATE (oral) 714,3 mg/kg

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
107-21-1	ethanediol, ethylene glycol	oral	ATE	500 mg/kg		
		dermal	LD50	10600 mg/kg	Rabbit	GESTIS

Irritation and corrosivity

Frequently or prolonged contact with skin may cause dermal irritation.

Sensitising effects

not determined

Severe effects after repeated or prolonged exposure

Frequently or prolonged contact with skin may cause dermal irritation.

Carcinogenic/mutagenic/toxic effects for reproduction

Die Aussage ist von den Eigenschaften der Einzelkomponenten abgeleitet.

Angaben zu: Ethan-1,2-diol

Ein Risiko der Fruchtschädigung braucht bei Einhaltung des MAK-Wertes nicht befürchtet zu werden.

Gefahr der Hautresorption. Aus der Gesamtheit der vorliegenden Informationen ergeben sich keine

Hinweise auf eine krebserzeugende Wirkung.

Specific effects in experiment on an animal

No data available

Additional information on tests

This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP].

Further information

No special hazards known when the product is properly used and the precautionary measures indicated are observed.

SECTION 12: Ecological information**12.1. Toxicity**

The product is not: Ecotoxic.

12.2. Persistence and degradability

According to EU criteria: expected to biodegrade fast The product basis (ethylene glycol) itself is readily biodegradable.

12.3. Bioaccumulative potential

Biological degradation: Yes, rapidly

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethanediol, ethylene glycol	-1,36

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The product has not been tested.

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12.6. Other adverse effects

No information available.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation. Send to a hazardous waste incinerator facility under observation of official regulations.

Waste disposal number of waste from residues/unused products

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of used product

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances
Classified as hazardous waste.

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled. Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

Other applicable information (land transport)

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

Other applicable information (marine transport)

No dangerous good in sense of this transport regulation.

Air transport (ICAO)

Other applicable information (air transport)

No dangerous good in sense of this transport regulation.

14.6. Special precautions for user

No information available.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

2004/42/EC (VOC): 70 %

Additional information

To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC

National regulatory information

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.

Water contaminating class (D): 1 - slightly water contaminating

15.2. Chemical safety assessment

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

SECTION 16: Other information**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

Relevant R-phrases (Number and full text)

Harmful if swallowed.

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

Harmful if swallowed.

Further Information

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.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)

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

1.1. Product identifier

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

1.3. Details of the supplier of the safety data sheet

Company name: HEPU-Autoteile GmbH
Street: Am Kreuzweg 2
Place: D-32689 Kalletal
Telephone: +49 (0)5264 6483-40 Telefax: +49 (0)5264 6483-44
e-mail: info@hepu.de
Internet: www.hepu.de
Responsible Department: Kundenservice

1.4. Emergency telephone number: Giftnotruf NRW (DE; E) +49(0)228-19 240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC

Indications of danger: Xn -Harmful
R phrases:
Harmful if swallowed.

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

Hazard categories:
Acute toxicity: Acute Tox. 4
Specific target organ toxicity - repeated exposure: STOT RE 2
Hazard Statements:
Harmful if swallowed.
May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazardous components which must be listed on the label

ethanediol, ethylene glycol

Signal word: Warning

Pictograms: GHS07-GHS08



Hazard statements

H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P102 Keep out of reach of children.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P314 Get medical advice/attention if you feel unwell.

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2.3. Other hazards

following inhalation: Vapour and mist concentrations above the allowable levels or unusually high concentrations may cause irritation to the nose and throat as well as headache, nausea and drowsiness.

After skin contact: Brief contact with the product may cause slight skin irritation. Prolonged contact (e.g. through soaked clothing) may result in serious skin irritation with symptoms such as redness and swelling.

Following eye contact: Conjunctival redness.

after ingestion: Oral ingestion of small amounts causes kidney damage.

Caution if victim vomits: Risk of aspiration!

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Hazardous components**

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
203-473-3	ethanediol, ethylene glycol	90 - < 95 %
107-21-1	Xn - Harmful R22	
603-027-00-1	Acute Tox. 4, STOT RE 2; H302 H373	
01-2119456816-28		

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

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Take off contaminated clothing.
Self-protection of the first aider

After inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

After contact with skin

Wash with plenty of water. Change contaminated clothing. IF ON SKIN: Wash with plenty of water/?.
If skin irritation or rash occurs: Get medical advice/attention.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of troubles or persistent symptoms, consult an ophthalmologist. Call a physician immediately.
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion

Medical treatment necessary. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.
Rinse mouth immediately and drink plenty of water.
Do NOT induce vomiting.

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

Ethylene glycol poisoning may cause initial symptoms such as behavioral disorders, drowsiness, vomiting, diarrhea, thirst and spasms. Kidney damage and kidney failure along with metabolic acidosis

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are late poisoning symptoms. Prompt medical treatment complemented by haemodialysis, if necessary, can reduce the toxic effect. Intravenous administration of ethanol in a sodium bicarbonate solution is a recognized antidote. For further treatment information, please consult the Poison Control Centre.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. Dry extinguishing powder. Water fog. Foam. Carbon dioxide.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

The product itself does not burn. Special exposure hazards arising from the substance itself, combustion products, resulting gases: Carbon monoxide. carbon black Pyrolysis products, toxic.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Use water spray jet to protect personnel and to cool endangered containers. Move undamaged containers from immediate hazard area if it can be done safely. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment. Do not breathe gas/fumes/vapour/spray. Special danger of slipping by leaking/spilling product. Ventilate affected area.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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). Treat the recovered material as prescribed in the section on waste disposal. Prevent spread over a wide area (e.g. by containment or oil barriers). Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Take up mechanically, placing in appropriate containers for disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin and eyes. Wash hands thoroughly after handling. Protect skin by using skin protective cream.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

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Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only.
 Keep container in a well-ventilated place.

Advice on storage compatibility

Do not store together with: Oxidizing agents.
 Do not store together with: Food and fodder

Further information on storage conditions

Keep away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits(EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink. Do not eat, drink, smoke or sneeze at the workplace. Keep away from food, drink and animal feedingstuffs. Protect skin by using skin protective cream. Wash hands before breaks and after work. Apply skin care products after work. Remove contaminated, saturated clothing immediately. Do not put any product-impregnated cleaning rags into your trouser pockets.

Eye/face protection

Wear eye/face protection.

Hand protection

Avoid contact with skin.
 Tested protective gloves are to be worn: Butyl rubber. / NBR (Nitrile rubber).

Skin protection

Body protection: not required.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
 Colour: green-yellow
 Odour: characteristic

Test method

pH-Value (at 20 °C): 7,8-8,6 (50% in H₂O)

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Changes in the physical state

Melting point:	No data available.
Initial boiling point and boilingrange:	not determined
Ignition temperature in °C::	>400 °C DIN 51794
Flash point:	>100 °C DIN51758
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Vapour pressure: (at 20 °C)	<0,1 hPa
Density (at 20 °C):	1,12 g/cm ³ DIN 51757
Water solubility:	completely miscible
Viscosity / kinematic: (at 20 °C)	>20 mm ² /s DIN 51562

9.2. Other information

Solid content: 0%

SECTION 10: Stability and reactivity

10.1. Reactivity

This product is stable under normal conditions. Hazardous reactions are unlikely.

10.3. Possibility of hazardous reactions

possible with strong oxidizing agents.
This product is stable under normal conditions. Hazardous reactions are unlikely.

10.4. Conditions to avoid

Oxidizing agents, strong.

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition products

none

Further information

none

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Acute toxicity, dermal.

ATEmix calculated

ATE (oral) 543,9 mg/kg

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
107-21-1	ethanediol, ethylene glycol	oral	LD50	4000 mg/kg		
		dermal	LD50	10600 mg/kg	Rabbit	GESTIS

Irritation and corrosivity

Frequently or prolonged contact with skin may cause dermal irritation.

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Sensitising effects

not determined

Severe effects after repeated or prolonged exposure

Frequently or prolonged contact with skin may cause dermal irritation.

Carcinogenic/mutagenic/toxic effects for reproduction

The product is not classified.

Specific effects in experiment on an animal

No data available

Additional information on tests

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Oral ingestion of small amounts causes kidney damage.

Contact with the eyes causes eye inflammation.

Inhalation of mists and vapours causes impaired consciousness.

Further information

No special hazards known when the product is properly used and the precautionary measures indicated are observed.

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
107-21-1	ethanediol, ethylene glycol					
	Acute fish toxicity	LC50	18500 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	
	Acute algae toxicity	ErC50 mg/l	6500 - 7500	96 h	Pseudokirchneriella subcapitata	
	Acute crustacea toxicity	EC50 mg/l	> 10,000	48 h	Daphnia magna	

12.2. Persistence and degradability

According to EU criteria: expected to biodegrade fast The product basis (ethylene glycol) itself is readily biodegradable.

12.3. Bioaccumulative potential

Biological degradation: Yes, rapidly

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethanediol, ethylene glycol	-1,34

Further information

Do not allow to enter into surface water or drains. The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

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160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of used product

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances
Classified as hazardous waste.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself. Contaminated packaging should be emptied to the maximum possible extent. After appropriate cleaning, it can be routed to reuse. Packaging not amenable to cleaning must be disposed of in accordance with the statutory regulations.

SECTION 14: Transport information

Land transport (ADR/RID)

Other applicable information (land transport)

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

Other applicable information (marine transport)

No dangerous good in sense of this transport regulation.

Air transport (ICAO)

Other applicable information (air transport)

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

National regulatory information

Water contaminating class (D): 2 - water contaminating

SECTION 16: Other information

Relevant R-phrases (Number and full text)

22 Harmful if swallowed.

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

H302 Harmful if swallowed.

H373 May cause damage to kidneys through prolonged or repeated exposure by swallowing.

H373 May cause damage to organs through prolonged or repeated exposure.



MADE IN GERMANY

HEPU-Autoteile GmbH

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

HEPU ANTIFREEZE P999-YLW

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.3. Details of the supplier of the safety data sheet**

Company name: HEPU-Autoteile GmbH
Street: Am Kreuzweg 2
Place: D-32689 Kalletal
Telephone: +49 (0)5264 6483-40 Telefax: +49 (0)5264 6483-44
e-mail: info@hepu.de
Internet: www.hepu.de
Responsible Department: Kundenservice

1.4. Emergency telephone number: Giftnotruf NRW (DE; E) +49(0)228-19 240

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Directive 67/548/EEC or 1999/45/EC**

Indications of danger: Xn -Harmful
R phrases:
Harmful if swallowed.

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

Hazard categories:
Acute toxicity: Acute Tox. 4
Specific target organ toxicity - repeated exposure: STOT RE2
Hazard Statements:
Harmful if swallowed.
May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements**Hazardous components which must be listed on the label**

ethanediol, ethylene glycol

Signal word: Warning
Pictograms: GHS07-GHS08

**Hazard statements**

H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P102 Keep out of reach of children.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P314 Get medical advice/attention if you feel unwell.

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2.3. Other hazards

following inhalation: Vapour and mist concentrations above the allowable levels or unusually high concentrations may cause irritation to the nose and throat as well as headache, nausea and drowsiness.

After skin contact: Brief contact with the product may cause slight skin irritation. Prolonged contact (e.g. through soaked clothing) may result in serious skin irritation with symptoms such as redness and swelling.

Following eye contact: Conjunctival redness.

after ingestion: Oral ingestion of small amounts causes kidney damage.

Caution if victim vomits: Risk of aspiration!

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Hazardous components**

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
203-473-3	ethanediol, ethylene glycol	90 - < 95 %
107-21-1	Xn - Harmful R22	
603-027-00-1	Acute Tox. 4, STOT RE 2; H302 H373	
01-2119456816-28		

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

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Take off contaminated clothing.
Self-protection of the first aider

After inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

After contact with skin

Wash with plenty of water. Change contaminated clothing. IF ON SKIN: Wash with plenty of water/?.
If skin irritation or rash occurs: Get medical advice/attention.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of troubles or persistent symptoms, consult an ophthalmologist. Call a physician immediately.
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion

Medical treatment necessary. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.
Rinse mouth immediately and drink plenty of water.
Do NOT induce vomiting.

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

Ethylene glycol poisoning may cause initial symptoms such as behavioral disorders, drowsiness, vomiting, diarrhea, thirst and spasms. Kidney damage and kidney failure along with metabolic acidosis

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are late poisoning symptoms. Prompt medical treatment complemented by haemodialysis, if necessary, can reduce the toxic effect. Intravenous administration of ethanol in a sodium bicarbonate solution is a recognized antidote. For further treatment information, please consult the Poison Control Centre.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. Dry extinguishing powder. Water fog. Foam. Carbon dioxide.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

The product itself does not burn. Special exposure hazards arising from the substance itself, combustion products, resulting gases: Carbon monoxide. carbon black Pyrolysis products, toxic.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Use water spray jet to protect personnel and to cool endangered containers. Move undamaged containers from immediate hazard area if it can be done safely. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment. Do not breathe gas/fumes/vapour/spray. Special danger of slipping by leaking/spilling product. Ventilate affected area.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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). Treat the recovered material as prescribed in the section on waste disposal. Prevent spread over a wide area (e.g. by containment or oil barriers). Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Take up mechanically, placing in appropriate containers for disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin and eyes. Wash hands thoroughly after handling. Protect skin by using skin protective cream.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

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Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only.
Keep container in a well-ventilated place.

Advice on storage compatibility

Do not store together with: Oxidizing agents.
Do not store together with: Food and fodder

Further information on storage conditions

Keep away from heat.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits(EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

8.2. Exposure controls**Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink. Do not eat, drink, smoke or sneeze at the workplace. Keep away from food, drink and animal feedingstuffs. Protect skin by using skin protective cream. Wash hands before breaks and after work. Apply skin care products after work. Remove contaminated, saturated clothing immediately. Do not put any product-impregnated cleaning rags into your trouser pockets.

Eye/face protection

Wear eye/face protection.

Hand protection

Avoid contact with skin.
Tested protective gloves are to be worn: Butyl rubber. / NBR (Nitrile rubber).

Skin protection

Body protection: not required.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state: liquid
Colour: yellow-green
Odour: characteristic

Test method

pH-Value (at 20 °C): 7,8-8,6 (50% in H₂O)

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Changes in the physical state

Melting point:	No data available.
Initial boiling point and boiling range:	not determined
Ignition temperature in °C:	>400 °C DIN 51794
Flash point:	>100 °C DIN 51758
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Vapour pressure: (at 20 °C)	<0,1 hPa
Density (at 20 °C):	1,12 g/cm ³ DIN 51757
Water solubility:	completely miscible
Viscosity / kinematic: (at 20 °C)	>20 mm ² /s DIN 51562

9.2. Other information

Solid content: 0%

SECTION 10: Stability and reactivity**10.1. Reactivity**

This product is stable under normal conditions. Hazardous reactions are unlikely.

10.3. Possibility of hazardous reactions

possible with strong oxidizing agents.

This product is stable under normal conditions. Hazardous reactions are unlikely.

10.4. Conditions to avoid

Oxidizing agents, strong.

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition products

none

Further information

none

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity**

Acute toxicity, dermal.

ATEmix calculated

ATE (oral) 543,9 mg/kg

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
107-21-1	ethanediol, ethylene glycol	oral	LD50	4000 mg/kg		
		dermal	LD50	10600 mg/kg	Rabbit	GESTIS

Irritation and corrosivity

Frequently or prolonged contact with skin may cause dermal irritation.

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Sensitising effects

not determined

Severe effects after repeated or prolonged exposure

Frequently or prolonged contact with skin may cause dermal irritation.

Carcinogenic/mutagenic/toxic effects for reproduction

The product is not classified.

Specific effects in experiment on an animal

No data available

Additional information on tests

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Oral ingestion of small amounts causes kidney damage.

Contact with the eyes causes eye inflammation.

Inhalation of mists and vapours causes impaired consciousness.

Further information

No special hazards known when the product is properly used and the precautionary measures indicated are observed.

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
107-21-1	ethanediol, ethylene glycol					
	Acute fish toxicity	LC50	18500 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	
	Acute algae toxicity	ErC50 mg/l	6500 - 7500	96 h	Pseudokirchneriella subcapitata	
	Acute crustacea toxicity	EC50 mg/l	> 10,000	48 h	Daphnia magna	

12.2. Persistence and degradability

According to EU criteria: expected to biodegrade fast The product basis (ethylene glycol) itself is readily biodegradable.

12.3. Bioaccumulative potential

Biological degradation: Yes, rapidly

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethanediol, ethylene glycol	-1,34

Further information

Do not allow to enter into surface water or drains. The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC). Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

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160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of used product

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances
Classified as hazardous waste.

Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances
Classified as hazardous waste.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself. Contaminated packaging should be emptied to the maximum possible extent. After appropriate cleaning, it can be routed to reuse. Packaging not amenable to cleaning must be disposed of in accordance with the statutory regulations.

SECTION 14: Transport information**Land transport (ADR/RID)****Other applicable information (land transport)**

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)**Other applicable information (inland waterways transport)**

No dangerous good in sense of this transport regulation.

Marine transport (IMDG)**Other applicable information (marine transport)**

No dangerous good in sense of this transport regulation.

Air transport (ICAO)**Other applicable information (air transport)**

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulatory information**

Water contaminating class (D): 2 - water contaminating

SECTION 16: Other information**Relevant R-phrases (Number and full text)**

22 Harmful if swallowed.

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

H302 Harmful if swallowed.

H373 May cause damage to kidneys through prolonged or repeated exposure by swallowing.

H373 May cause damage to organs through prolonged or repeated exposure.

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(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 30.10.2013

Revision: 30.10.2013

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

- **Product identifier**
- **Trade name:** Hepu Scheibenklar -60°C
- **Article number:** SK-C60-001 - SK-C60-210
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation** Antifreeze
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Hepu Autoteile GmbH
Am Kreuzweg 2
D-32689 Kalletal-Hohenhausen
Tel: +49 (0) 5264 6483-0
Fax: +49 (0) 5264 6483-33
E-Mail: Info@hepu.de
- **Further information obtainable from:**
Product Safety Department
Tel: +49 (0) 5264 6483-0
Fax: +49 (0) 5264 6483-33
- **Emergency telephone number:**
Informationszentrale gegen Vergiftungen
des Landes Nordrhein-Westfalen
Tel.: +49 (0) 228 / 19 240

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
.....
R10: Flammable.
- **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- **Label elements**
- **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.
- **Risk phrases:**
10 Flammable.
- **Safety phrases:**
2 Keep out of the reach of children.
7 Keep container tightly closed.
16 Keep away from sources of ignition - No smoking.
46 If swallowed, seek medical advice immediately and show this container or label.
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture

- **Dangerous components:**

CAS: 64-17-5 EINECS: 200-578-6	ethanol	 F R11	20-60%
CAS: 107-21-1 EINECS: 203-473-3	ethanediol	 Xn R22	5-15%
CAS: 78-93-3 EINECS: 201-159-0	butanone	 Xi R36;  F R11 R66-67	1-5%

- **Regulation (EC) No 648/2004 on detergents / Labelling for contents**

anionic surfactants	< 5%
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- **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Do not induce vomiting; call for medical help immediately.
A person vomiting while laying on their back should be turned onto their side.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbon monoxide (CO)
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Keep away from ignition sources.
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
In case of seepage into the ground inform responsible authorities.

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- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Keep away from heat and direct sunlight.
Keep receptacles tightly sealed.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

Ingredients with limit values that require monitoring at the workplace:

64-17-5 ethanol

WEL Long-term value: 1920 mg/m³, 1000 ppm

107-21-1 ethanediol

WEL Short-term value: 104** mg/m³, 40** ppm
Long-term value: 10* 52** mg/m³, 20** ppm
Sk *particulate **vapour

78-93-3 butanone

WEL Short-term value: 899 mg/m³, 300 ppm
Long-term value: 600 mg/m³, 200 ppm
Sk, BMGV

Ingredients with biological limit values:

78-93-3 butanone

BMGV 70 µmol/L
urine
post shift
butan-2-one

- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:** Solvent resistant gloves

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- **Material of gloves**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.7 mm
- **Penetration time of glove material**
Value for the permeation: Level ≤ 480
The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

· Form:	Fluid
· Colour:	Blue
· Odour:	Pleasant
· Odour threshold:	Not determined.

· pH-value at 20 °C:	7.5
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· Change in condition

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	78 °C

· Flash point:	23 °C
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· Flammability (solid, gaseous):	Not applicable.
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· Ignition temperature:	460 °C (DIN 51794)
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· Decomposition temperature:	Not determined.
-------------------------------------	-----------------

· Self-igniting:	Product is not selfigniting.
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· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
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· Explosion limits:

· Lower:	3.5 Vol %
· Upper:	19 Vol %

· Vapour pressure:	Not determined.
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· Density at 20 °C:	<0.9 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

· Solubility in / Miscibility with water:	Fully miscible.
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· Partition coefficient (n-octanol/water):	Not determined.
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· Viscosity:

· Dynamic:	Not determined.
· Kinematic:	Not determined.

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· **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Reacts with strong oxidizing agents.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

64-17-5 ethanol

Oral	LD50	7060 mg/kg (rat)
Inhalative	LC50/4 h	20000 mg/l (rat)

107-21-1 ethanediol

Oral	LD50	5840 mg/kg (rat)
Dermal	LD50	9530 mg/kg (rabbit)

78-93-3 butanone

Oral	LD50	3300 mg/kg (rat)
Dermal	LD50	5000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

12 Ecological information

- **Toxicity**

· **Aquatic toxicity:**

64-17-5 ethanol

EC50 / 48 h	9.300 mg/l (daphnia)
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107-21-1 ethanediol

EC 50 / 48 h	9.300 mg/l (daphnia)
--------------	----------------------

78-93-3 butanone

EC 50 / 48h	5.100 mg/l (daphnia)
-------------	----------------------

- **Persistence and degradability** Easily biodegradable
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**

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The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water


Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

- | | |
|---|----------------------|
| · UN-Number | |
| · ADR, IMDG, IATA | UN1987 |
| · UN proper shipping name | |
| · ADR | 1987 |
| · Transport hazard class(es) | |
| · ADR, IMDG, IATA | |
|  | |
| · Class | 3 Flammable liquids. |
| · Label | 3 |

- | | |
|---------------------------------------|-----------------------------|
| · Packing group | |
| · ADR, IMDG, IATA | III |
| · Environmental hazards: | |
| · Marine pollutant: | No |
| · Special precautions for user | Warning: Flammable liquids. |
| · Danger code (Kemler): | 30 |
| · EMS Number: | F-E, <u>S</u> -E |

- | | |
|--|-----------------|
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
|--|-----------------|

· Transport/Additional information:

- | | |
|----------------------------------|-----|
| · ADR | |
| · Limited quantities (LQ) | 5L |
| · Transport category | 3 |
| · Tunnel restriction code | D/E |

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15 Regulatory information

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**

R11 Highly flammable.

R22 Harmful if swallowed.

R36 Irritating to eyes.

R66 Repeated exposure may cause skin dryness or cracking.

R67 Vapours may cause drowsiness and dizziness.

- **Department issuing MSDS:** Product safety department

- **Contact:** Hr. Grimm

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