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SECTION 3: Composition/information on ingredients
3.2. Mixtures
Chemical characterization

Glycol-based mixture.

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
107-21-1	ethanediol			> 50 %
	203-473-3	603-027-00-1	01-2119456816-28	
	Acute Tox. 4, STOT RE 2; H302 H373			
111-46-6	2,2' -oxybisethanol			2 - < 5 %
	203-872-2	603-140-00-6	01-2119457857-21	
	Acute Tox. 4, STOT RE 2; H302 H373			
95-14-7	benzotriazole			max. 0,9 %
	202-394-1		01-2119979079-20	
	Acute Tox. 4, Eye Irrit. 2, Aquatic Chronic 2; H302 H319 H411			

Full text of H and EUH statements: see section 16.

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

When in doubt or if symptoms are observed, get medical advice. If unconscious place in recovery position and seek medical advice. Remove contaminated, saturated clothing immediately.

After inhalation

Remove casualty to fresh air and keep warm and at rest.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap.

After contact with eyes

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

After ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Let water be drunken in little sips (dilution effect). Call a physician immediately. Do NOT induce vomiting.

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

When in doubt or if symptoms are observed, get medical advice.

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

No information available.

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

 alcohol resistant foam, Extinguishing powder, Carbon dioxide (CO₂).

Unsuitable extinguishing media

Full water jet.

5.2. Special hazards arising from the substance or mixture

 Hazardous decomposition products: Carbon monoxide. Carbon dioxide (CO₂). Do not inhale explosion and combustion gases.

5.3. Advice for firefighters

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

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Additional information

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Clean contaminated objects and areas thoroughly observing environmental regulations.

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.

6.4. Reference to other sections

See protective measures under point 7 and 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Use personal protection equipment. Do not eat, drink or smoke when using this product. Provide fresh air. Handle and open container with care. Conditions to avoid: Generation/formation of aerosols.

Advice on protection against fire and explosion

No special measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Protect against: Frost. Keep away from heat. Protect against direct sunlight. Keep container tightly closed in a cool, well-ventilated place.

7.3. Specific end use(s)

Observe technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
111-46-6	2,2'-Oxydiethanol	23	101		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

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DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
107-21-1	ethanediol			
Worker DNEL, long-term		inhalation	local	35 mg/m ³
Consumer DNEL, long-term		inhalation	local	7 mg/m ³
Consumer DNEL, long-term		dermal	systemic	53 mg/kg bw/day
Worker DNEL, long-term		dermal	systemic	106 mg/kg bw/day
111-46-6	2,2' -oxybisethanol			
Worker DNEL, long-term		dermal	systemic	106 mg/kg bw/day
Consumer DNEL, long-term		dermal	systemic	53 mg/kg bw/day
Worker DNEL, long-term		inhalation	local	60 mg/m ³
Consumer DNEL, long-term		inhalation	local	12 mg/m ³

PNEC values

CAS No	Substance	Environmental compartment	Value
107-21-1	ethanediol		
		Freshwater	10 mg/l
		Soil	1,53 mg/kg
		Freshwater sediment	20,9 mg/kg
		Marine water	1 mg/l
		Micro-organisms in sewage treatment plants (STP)	199,5 mg/l
111-46-6	2,2' -oxybisethanol		
		Freshwater	10 mg/l
		Marine water	1 mg/l
		Freshwater sediment	20,9 mg/kg
		Soil	1,53 mg/kg

8.2. Exposure controls

Appropriate engineering controls

See chapter 7. No additional measures necessary.

Protective and hygiene measures

When using do not eat, drink, smoke, sniff.

Eye/face protection

Eye glasses with side protection.

Hand protection

Wear suitable gloves. Recommended glove articles: DIN EN 374. Suitable material: NBR (Nitrile rubber).

Breakthrough time (maximum wearing time): > 480 min (Thickness of the glove material: 0.4 mm).

Breakthrough times and swelling properties of the material must be taken into consideration. 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. Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

Skin protection

Protective clothing.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required. When splashes

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or fine mist form, a permitted breathing apparatus suitable for these purposes must be used. Suitable respiratory protection apparatus: Filtering Half-face mask (DIN EN 149), e.g. FFA P / FFP3.

Environmental exposure controls

Do not allow to enter into surface water or drains.

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

Physical state:	liquid
Colour:	green
Odour:	characteristic

Test method

pH-Value:	ca. 8,5
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Changes in the physical state

Melting point:	not determined
Initial boiling point and boiling range:	171 °C
Pour point:	not determined
Flash point:	123,5 °C
Lower explosion limits:	3,2 vol. %
Upper explosion limits:	53 vol. %
Ignition temperature:	not determined
Decomposition temperature:	No information available.
Vapour pressure:	not determined
Density (at 20 °C):	1,13 g/cm ³
Water solubility:	completely miscible
Partition coefficient:	not determined
Viscosity / dynamic:	not determined
Viscosity / kinematic:	not determined
Flow time:	not determined
Vapour density:	not determined
Evaporation rate:	not determined

9.2. Other information

No information available.

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

No information available.

10.2. Chemical stability

No information available.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No information available.

SECTION 11: Toxicological information

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11.1. Information on toxicological effects
Acute toxicity

Harmful if swallowed.

ATEmix calculated

ATE (oral) 1497,0 mg/kg

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
107-21-1	ethanediol				
	oral	LD50	1600 mg/kg		Practical experience/human evidence
	dermal	LD50	3500 mg/kg	Mouse	
111-46-6	2,2' -oxybisethanol				
	oral	ATE	500 mg/kg		
	dermal	LD50	11890 mg/kg	Rabbit	
95-14-7	benzotriazole				
	oral	LD50	500 mg/kg	Rat	

Irritation and corrosivity

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

Sensitising effects

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

STOT-single exposure

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

Severe effects after repeated or prolonged exposure

May cause damage to organs through prolonged or repeated exposure. (ethanediol), (2,2' -oxybisethanol)

Carcinogenic/mutagenic/toxic effects for reproduction

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

Aspiration hazard

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

Practical experience
Other observations

Keeping to the general worker's protection rules and the industrial hygienics, there is no risk in handling this product through the personnel.

SECTION 12: Ecological information
12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
107-21-1	ethanediol					
	Acute fish toxicity	LC50	72860 mg/l	96 h	Pimephales promelas (fathead minnow)	
	Acute algae toxicity	ErC50 mg/l	6500-13000	96 h	Selenastrum capricornutum	
	Acute crustacea toxicity	EC50	> 100 mg/l	48 h	Daphnia magna (Big water flea)	
	Fish toxicity	NOEC	15380 mg/l	7 d	Pimephales promelas (fathead minnow)	
	Crustacea toxicity	NOEC	8590 mg/l	7 d	Ceriodaphnia Dubia	

12.2. Persistence and degradability

There are no data available on the mixture itself.

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CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
107-21-1	ethanediol			
	Biodegradation	90-100	10	
	OECD 301A/ ISO 7827/ EEC 92/69/V, C.4-A			
95-14-7	benzotriazole			
	Biodegradation	90,0 %	28	
	Readily biodegradable (according to OECD criteria).			

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-21-1	ethanediol	-1,36
111-46-6	2,2' -oxybisethanol	-1,98 (25°C)
95-14-7	benzotriazole	1,34

BCF

CAS No	Chemical name	BCF	Species	Source
95-14-7	benzotriazole	4,1		

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to EC directives 75/442/EEC and 91/689/EEC in the corresponding versions, covering waste and dangerous waste.

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 hazardous 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 hazardous substances
Classified as hazardous waste.

Contaminated packaging

Non-contaminated packages may be recycled. Consult the appropriate local waste disposal expert about waste disposal.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:

No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name:

No dangerous good in sense of this transport regulation.

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14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number: No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

Marine pollutant: NO

Air transport (ICAO)

14.1. UN number: No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

No data available

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

No data available

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

2010/75/EU (VOC): 0 %

National regulatory information

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**Changes**

This data sheet contains changes from the previous version in section(s): 1,2,7,9,11,13,14,15.

Abbreviations and acronyms

ADR: Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement concernant le transport international ferroviaire des marchandises dangereuses (Regulations concerning the International Carriage of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

CAS: Chemical Abstracts Service (a division of the American Chemical Society)

DNEL/DMEL: Derived No-Effect Level / Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

WEL (UK): Workplace Exposure Limits

TWA (EC): Time-Weighted Average

STEL (EC): Short Term Exposure Limit

ATE: Acute Toxicity Estimate

LD50: Lethal Dose, 50% (median lethal dose)

LC50: Lethal Concentration, 50% (median lethal concentration)

EC50: half maximal Effective Concentration

ErC50: EC50 in terms of reduction of growth rate

VwVwS: Verwaltungsvorschrift wassergefährdende Stoffe

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Relevant H and EUH statements (number and full text)

H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

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.)