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

1.1. Product identifier

Clean Screen Winter

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

Use of the substance/mixture

Anti-freeze and de-icing products

Uses advised against

No information available.

1.3. Details of the supplier of the safety data sheet

Company name:	Vierol AG	
Street:	Karlstrasse 19	
Place:	D-26123 Oldenburg	
Telephone:	+49 (0) 441 – 210 20 – 0	Telefax: +49 (0) 441 – 210 20 –111
e-mail:	info@vierol.de	
Internet:	www.vierol.de	

1.4. Emergency telephone number:

Giftinformationszentrum Nord (Göttingen)
+49 (0)551/19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Flammable liquid: Flam. Liq. 3
Serious eye damage/eye irritation: Eye Irrit. 2
Hazard Statements:
Flammable liquid and vapour.
Causes serious eye irritation.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

ethanol
Ethane-1,2-diol

Signal word: Warning

Pictograms:

Hazard statements

H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.

Precautionary statements

P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P501	Dispose of contents / container in accordance with official regulations.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
64-17-5	ethanol			45 - < 50 %
	200-578-6	603-002-00-5	01-2119457610-43	
	Flam. Liq. 2, Eye Irrit. 2; H225 H319			
107-21-1	Ethane-1,2-diol			5 - < 10 %
	203-473-3	603-027-00-1	01-2119456816-28	
	Acute Tox. 4, STOT RE 2; H302 H373			
78-93-3	butanone			< 1 %
	201-159-0	606-002-00-3	01-2119457290-43	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066			
68891-38-3	Alcohols, C12-14, ethoxylated, sulfates, sodium salts			< 0.1 %
	500-234-8		01-2119488639-16	
	Skin Irrit. 2, Eye Dam. 1, Aquatic Chronic 3; H315 H318 H412			
138-86-3	Dipentene			< 0.1 %
	205-341-0	601-029-00-7	01-2120766421-57	
	Flam. Liq. 3, Skin Irrit. 2, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1; H226 H315 H317 H400 H410			
5392-40-5	Citral			< 0.1 %
	226-394-6	605-019-00-3	01-2119462829-23	
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1; H315 H319 H317			
8000-41-7	Terpineol			< 0.1 %
	232-268-1		01-2119553062-49	
	Skin Irrit. 2, Eye Irrit. 2; H315 H319			
52-51-7	2-bromo-2-nitropropane-1,3-diol			< 0.1 %
	200-143-0	603-085-00-8	01-2119980938-15	
	Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, STOT SE 3, Aquatic Acute 1; H312 H302 H315 H318 H335 H400			

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

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
64-17-5	200-578-6	ethanol	45 - < 50 %
	inhalation: LC50 = 124,7 mg/l (vapours); oral: LD50 = 10470 mg/kg		
107-21-1	203-473-3	Ethane-1,2-diol	5 - < 10 %
	dermal: LD50 = > 3500 mg/kg; oral: LD50 = 7712 mg/kg		
78-93-3	201-159-0	butanone	< 1 %
	inhalation: LC50 = 34 mg/l (vapours); dermal: LD50 = >2000 mg/kg; oral: LD50 = >2193 mg/kg		
68891-38-3	500-234-8	Alcohols, C12-14, ethoxylated, sulfates, sodium salts	< 0.1 %
	dermal: LD50 = >= 2000 mg/kg; oral: LD50 = 4100 mg/kg Eye Dam. 1; H318: >= 10 - 100 Eye Irrit. 2; H319: >= 5 - < 10		
5392-40-5	226-394-6	Citral	< 0.1 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = ca. 6800 mg/kg		
52-51-7	200-143-0	2-bromo-2-nitropropane-1,3-diol	< 0.1 %
	inhalation: LC50 = > 0,12 - < 1,14 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = 211 mg/kg M akut; H400: M=10		

Labelling for contents according to Regulation (EC) No 648/2004

perfumes, preservation agents (2-Bromo-2-nitropropane-1,3-diol).

Further Information

This mixture contains no substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Take off contaminated clothing and wash it before reuse.
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

Provide fresh air. Call a doctor if you feel unwell.

After contact with skin

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

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.
Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Rinse mouth thoroughly with water.
Let water be drunken in little sips (dilution effect).
Do NOT induce vomiting.
In all cases of doubt, or when symptoms persist, seek medical advice.

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.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use water spray jet to protect personnel and to cool endangered containers.
Co-ordinate fire-fighting measures to the fire surroundings.

- alcohol resistant foam
- Extinguishing powder
- Carbon dioxide (CO2)
- Water spray jet

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Non-flammable. Formation of toxic gases is possible during heating or in case of fire.
In case of fire may be liberated:

- Carbon monoxide (CO)
- Carbon dioxide (CO2).
- Pyrolysis products, toxic

5.3. Advice for firefighters

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

Additional information

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

General measures

Remove all sources of ignition.
Provide adequate ventilation.
Do not breathe gas/fumes/vapour/spray.
Avoid contact with skin, eyes and clothes.
Use personal protection equipment.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

For containment

Stop leak if safe to do so.
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Collect in closed and suitable containers for disposal.
Treat the recovered material as prescribed in the section on waste disposal .
Clean contaminated articles and floor according to the environmental legislation.

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

Use only in well-ventilated areas.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharges.
Vapours can form explosive mixtures with air.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep only in the original container.

Hints on joint storage

Do not store together with: Oxidizing agent. Pyrophoric or self-heating substances.

Further information on storage conditions

Store in a cool dry place.

7.3. Specific end use(s)

Anti-freeze and de-icing products

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
78-93-3	Butan-2-one (methyl ethyl ketone)	200	600		TWA (8 h)	WEL
		300	899		STEL (15 min)	WEL
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL
64-17-5	Ethanol	1000	1920		TWA (8 h)	WEL
67-63-0	Propan-2-ol	400	999		TWA (8 h)	WEL
		500	1250		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
78-93-3	Butan-2-one	butan-2-one	70 µmol/L	urine	Post shift

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
64-17-5	ethanol			
Worker DNEL, long-term		inhalation	systemic	950 mg/m³
Worker DNEL, long-term		dermal	systemic	343 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	114 mg/m³
Consumer DNEL, long-term		dermal	systemic	206 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	87 mg/kg bw/day
107-21-1	Ethane-1,2-diol			
Consumer DNEL, long-term		dermal	systemic	53 mg/kg bw/day
Worker DNEL, long-term		inhalation	local	35 mg/m³
Worker DNEL, long-term		dermal	systemic	106 mg/kg bw/day
Consumer DNEL, long-term		inhalation	local	7 mg/m³
67-63-0	propan-2-ol			
Consumer DNEL, long-term		dermal	systemic	319 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	89 mg/m³
Consumer DNEL, long-term		oral	systemic	26 mg/kg bw/day
Worker DNEL, long-term		dermal	systemic	888 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	500 mg/m³
78-93-3	butanone			
Consumer DNEL, long-term		oral	systemic	31 mg/kg bw/day
Consumer DNEL, long-term		dermal	systemic	412 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	106 mg/m³
Worker DNEL, long-term		dermal	systemic	1161 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	600 mg/m³
68891-38-3	Alcohols, C12-14, ethoxylated, sulfates, sodium salts			
Worker DNEL, long-term		inhalation	systemic	175 mg/m³
Worker DNEL, long-term		dermal	systemic	2750 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	52 mg/m³
Consumer DNEL, long-term		dermal	systemic	1650 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	15 mg/kg bw/day
5392-40-5	Citral			
Worker DNEL, long-term		inhalation	systemic	9 mg/m³
Worker DNEL, long-term		dermal	systemic	1,7 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	2,7 mg/m³
Consumer DNEL, long-term		dermal	systemic	1 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,6 mg/kg bw/day
52-51-7	2-bromo-2-nitropropane-1,3-diol			
Worker DNEL, long-term		inhalation	systemic	3,5 mg/m³
Worker DNEL, acute		inhalation	systemic	10,5 mg/m³

Worker DNEL, long-term	inhalation	local	2,5 mg/m³
Worker DNEL, acute	inhalation	local	2,5 mg/m³
Worker DNEL, long-term	dermal	systemic	2 mg/kg bw/day
Worker DNEL, acute	dermal	systemic	6 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	0,6 mg/m³
Consumer DNEL, acute	inhalation	systemic	1,8 mg/m³
Consumer DNEL, acute	inhalation	local	0,6 mg/m³
Consumer DNEL, long-term	dermal	systemic	0,7 mg/kg bw/day
Consumer DNEL, acute	dermal	systemic	2,1 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	0,18 mg/kg bw/day
Consumer DNEL, acute	oral	systemic	0,5 mg/kg bw/day

PNEC values

CAS No	Substance	
Environmental compartment		Value
64-17-5	ethanol	
Freshwater		0,96 mg/l
Freshwater (intermittent releases)		2,75 mg/l
Marine water		0,79 mg/l
Freshwater sediment		3,6 mg/kg
Marine sediment		2,9 mg/kg
Secondary poisoning		380 mg/kg
Micro-organisms in sewage treatment plants (STP)		580 mg/l
Soil		0,63 mg/kg
107-21-1	Ethane-1,2-diol	
Freshwater		10 mg/l
Freshwater (intermittent releases)		10 mg/l
Marine water		1 mg/l
Freshwater sediment		37 mg/kg
Marine sediment		3,7 mg/kg
Micro-organisms in sewage treatment plants (STP)		199,5 mg/l
Soil		1,53 mg/kg
67-63-0	propan-2-ol	
Freshwater		140,9 mg/l
Freshwater (intermittent releases)		140,9 mg/l
Marine water		140,9 mg/l
Freshwater sediment		552 mg/kg
Marine sediment		552 mg/kg
Secondary poisoning		160 mg/kg
Micro-organisms in sewage treatment plants (STP)		2251 mg/l
Soil		28 mg/kg
78-93-3	butanone	
Freshwater		55,8 mg/l
Freshwater (intermittent releases)		55,8 mg/l
Marine water		55,8 mg/l
Freshwater sediment		284,74 mg/kg
Marine sediment		284,7 mg/kg
Secondary poisoning		1000 mg/kg
Micro-organisms in sewage treatment plants (STP)		709 mg/l
Soil		22,5 mg/kg
68891-38-3	Alcohols, C12-14, ethoxylated, sulfates, sodium salts	
Freshwater		0,24 mg/l
Freshwater (intermittent releases)		0,071 mg/l
Marine water		0,024 mg/l
Freshwater sediment		0,917 mg/kg

Marine sediment	0,092 mg/kg
Micro-organisms in sewage treatment plants (STP)	10000 mg/l
Soil	7,5 mg/kg
5392-40-5	Citral
Freshwater	0,007 mg/l
Freshwater (intermittent releases)	0,068 mg/l
Marine water	0,001 mg/l
Freshwater sediment	0,125 mg/kg
Marine sediment	0,013 mg/kg
Micro-organisms in sewage treatment plants (STP)	1,6 mg/l
Soil	0,021 mg/kg
52-51-7	2-bromo-2-nitropropane-1,3-diol
Freshwater	0,01 mg/l
Freshwater (intermittent releases)	0,003 mg/l
Marine water	0,001 mg/l
Freshwater sediment	0,041 mg/kg
Marine sediment	0,003 mg/kg
Micro-organisms in sewage treatment plants (STP)	0,43 mg/l
Soil	0,5 mg/kg

8.2. Exposure controls



Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

Protective and hygiene measures

Take off contaminated clothing and wash it before reuse.
Wash hands and face before breaks and after work and take a shower if necessary.
When using do not eat, drink, smoke, sniff. Keep away from food, drink and animal feedingstuffs.

Eye/face protection

During filling, metering, mixing and sampling must be used:
Wear eye/face protection. DIN EN 166

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.
Recommended glove articles: EN ISO 374
Suitable material: NBR (Nitrile rubber)
Thickness of the glove material: 0,4 mm
Breakthrough times and swelling properties of the material must be taken into consideration. Breakthrough time: > 8h
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.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	blue
Odour:	characteristic
Odour threshold:	not determined
pH-Value (at 20 °C):	6,5 - 7,0

Changes in the physical state

Melting point:	not determined
Boiling point or initial boiling point and boiling range:	> 78 °C
Flash point:	> 23 °C

Flammability

Solid/liquid:	not applicable
Gas:	not applicable

Explosive properties

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

Lower explosion limits:	not determined
Upper explosion limits:	not determined

Self-ignition temperature

Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	not determined

Oxidizing properties

The product is not: oxidising.

Vapour pressure:	not determined
Density (at 20 °C):	0,927 g/cm³
Water solubility:	completely miscible

Solubility in other solvents

not determined

Partition coefficient n-octanol/water:	not determined
Relative vapour density:	not determined
Evaporation rate:	not determined

9.2. Other information

Solid content:	not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquids. Vapours may form explosive mixtures with air.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Reacts with : Oxidizing agent

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

10.5. Incompatible materials

Materials to avoid:

- Strong acid
- Oxidising agent

10.6. Hazardous decomposition products

Hazardous combustion products:

- Carbon monoxide (CO)
- Carbon dioxide (CO2)
- Pyrolysis products, toxic

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
64-17-5	ethanol				
	oral	LD50 10470 mg/kg	Rat	Study report (1976)	OECD Guideline 401
	inhalation (4 h) vapour	LC50 124,7 mg/l	Rat	Study report (1980)	OECD Guideline 403
107-21-1	Ethane-1,2-diol				
	oral	LD50 7712 mg/kg	Rat	Study report (1968)	according to BASF-internal standards
	dermal	LD50 > 3500 mg/kg	Mouse	Fundamental and Applied Toxicology 27: 1	LD50 derived from developmental toxicity
78-93-3	butanone				
	oral	LD50 >2193 mg/kg	Rat		
	dermal	LD50 >2000 mg/kg	Rabbit	OECD 402	
	inhalation (4 h) vapour	LC50 34 mg/l	Rat		
68891-38-3	Alcohols, C12-14, ethoxylated, sulfates, sodium salts				
	oral	LD50 4100 mg/kg	Rat	Study report (1986)	OECD Guideline 401
	dermal	LD50 >= 2000 mg/kg	Rat	Study report (2012)	OECD Guideline 402
5392-40-5	Citral				
	oral	LD50 ca. 6800 mg/kg	Rat	Study report (1978)	Method: BASF-test according to internal
	dermal	LD50 > 2000 mg/kg	Rat	Study report (1978)	internal BASF-Test: single dose group ex
52-51-7	2-bromo-2-nitropropane-1,3-diol				
	oral	LD50 211 mg/kg	Rat	Study report (2001)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rat	Study report (2000)	OECD Guideline 402
	inhalation (4 h) aerosol	LC50 > 0,12 - < 1,14 mg/l	Rat	Study report (2003)	OECD Guideline 403

Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

Additional information on tests

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

11.2. Information on other hazards

Endocrine disrupting properties

No information available.

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
64-17-5	ethanol						
	Acute fish toxicity	LC50	15400 mg/l	96 h	Lepomis macrochirus	Bulletin of Environmental Contamination	other: EPA-660/3-75-009, 1975
	Acute algae toxicity	ErC50	ca. 22000 mg/l	96 h	Pseudokirchneriella subcapitata	Ecotoxicology and Environmental Safety 7	OECD Guideline 201
	Acute crustacea toxicity	EC50	> 10000 mg/l	48 h	Daphnia magna	Water Research 23(4): 495-499 (1989)	other: DIN 38412 Teil 11
	Fish toxicity	NOEC	> 79 mg/l	100 d	Oryzias latipes	Environmental Toxicology and Chemistry,	Chronic effects of substance on reproduc
	Algae toxicity	NOEC	5400 mg/l	5 d	Skeletonema costatum	Environ Toxicol Chem 8(5):451-455. (1989	Study to determine the sensitivity of a
	Crustacea toxicity	NOEC	2 mg/l	10 d	Ceriodaphnia dubia	Arch Environ Contam Toxicol 20(2):211-21	Follows the basic methodology for the th
107-21-1	Ethane-1,2-diol						
	Acute fish toxicity	LC50	> 72860 mg/l	96 h	Pimephales promelas	Environ. Toxicology and Chemistry, Vol.	EPA 600/4-90/027. U.S. Environmental Pro
	Acute algae toxicity	ErC50	6500 - 13000 mg/l	96 h	Pseudokirchneriella subcapitata	Study report (1982)	other: EPA 600/9-78-018, 1978
	Acute crustacea toxicity	EC50	> 100 mg/l	48 h	Daphnia magna	Study report (1998)	OECD Guideline 202
	Fish toxicity	NOEC	15380 mg/l	7 d	Pimephales promelas	Environ. Toxicology and Chemistry, Vol.	other: EPA 600/4-89/001. U.S. Environmen
	Algae toxicity	NOEC	> 100 mg/l	8 d	Scenedesmus quadricauda	REACh Registration Dossier	OECD Guideline 201
	Crustacea toxicity	NOEC	7500 - 15000 mg/l	21 d	Daphnia magna	REACh Registration Dossier	other: ASTM
78-93-3	butanone						
	Acute fish toxicity	LC50	2993 mg/l	96 h	Pimephales promelas	Study report (1998)	OECD Guideline 203
	Acute algae toxicity	ErC50	2029 mg/l	96 h	Pseudokirchneriella subcapitata	Study report (1998)	OECD Guideline 201
	Acute crustacea toxicity	EC50	308 mg/l	48 h	Daphnia magna	Study report (1998)	OECD Guideline 202
	Acute bacteria toxicity	(1972 mg/l)			Pseudokirchneriella subcapitata	72h	
68891-38-3	Alcohols, C12-14, ethoxylated, sulfates, sodium salts						
	Acute fish toxicity	LC50	7,1 mg/l	96 h	Danio rerio	REACh Registration Dossier	other: EG Guideline 92/69 C.1

	Acute algae toxicity	ErC50 27,7 mg/l	72 h	Desmodesmus subspicatus	REACh Registration Dossier	other: EU-Guideline 92/69 EWG
	Acute crustacea toxicity	EC50 7,4 mg/l	48 h	Daphnia magna	REACh Registration Dossier	other: EG Guideline 92/69/EWG
	Fish toxicity	NOEC 0,2 mg/l	28 d	Oncorhynchus mykiss	REACh Registration Dossier	OECD Guideline 204
	Crustacea toxicity	NOEC 0,27 mg/l	21 d	Daphnia magna	REACh Registration Dossier	OECD Guideline 211
5392-40-5	Citral					
	Acute fish toxicity	LC50 6,78 mg/l	96 h	Leuciscus idus	Study report (1989)	other: German standard DIN 38412, part L
	Acute algae toxicity	ErC50 103,8 mg/l	72 h	Desmodesmus subspicatus	Study report (1989)	other: DIN 38412 L9
	Acute crustacea toxicity	EC50 6,8 mg/l	48 h	Daphnia magna	Study report (1988)	other: Directive 79/831 EWG, C2 annex V
	Acute bacteria toxicity	(ca. 160 mg/l)	0,5 h	activated sludge, domestic	Study report (1994)	OECD Guideline 209
52-51-7	2-bromo-2-nitropropane-1,3-diol					
	Acute fish toxicity	LC50 35,7 mg/l	96 h	Lepomis macrochirus	Study report (1984)	EPA OPP 72-1
	Acute algae toxicity	ErC50 0,25 mg/l	72 h	Skeletonema costatum	Study report (1998)	other: ISO guideline 10253 and U.S. EPA
	Acute crustacea toxicity	EC50 1,4 mg/l	48 h	Daphnia magna	Study report (1981)	OECD Guideline 202
	Fish toxicity	NOEC 21,5 mg/l	49 d	Oncorhynchus mykiss	Study report (1996)	OECD Guideline 210
	Crustacea toxicity	NOEC 0,27 mg/l	21 d	Daphnia magna	Study report (1992)	OECD Guideline 211
	Acute bacteria toxicity	(ca. 230 mg/l)	0,5 h	Activated sludge	Study report (2002)	OECD Guideline 209

12.2. Persistence and degradability

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
64-17-5	ethanol			
	Biodegradation	>70%	5	
	Readily biodegradable (according to OECD criteria).			
52-51-7	2-bromo-2-nitropropane-1,3-diol			
	OECD 301B	>70%		

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
64-17-5	ethanol	-0,77
107-21-1	Ethane-1,2-diol	-1,36
78-93-3	butanone	0,3
68891-38-3	Alcohols, C12-14, ethoxylated, sulfates, sodium salts	0,3
5392-40-5	Citral	2,76
52-51-7	2-bromo-2-nitropropane-1,3-diol	0,21

BCF

CAS No	Chemical name	BCF	Species	Source
64-17-5	ethanol	1	Cyprinus carpio	Comparative Biochemi
52-51-7	2-bromo-2-nitropropane-1,3-diol	3,16	calculated value	EPIWIN calculation (

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

There are no data available on the mixture itself.

12.6. Endocrine disrupting properties

No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Contaminated packaging

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)

14.1. UN number: UN 1987

14.2. UN proper shipping name: ALCOHOLS, N.O.S. (Ethanol)

14.3. Transport hazard class(es): 3

14.4. Packing group: III

Hazard label: 3

Classification code: F1
Special Provisions: 274
Limited quantity: 5 L
Excepted quantity: E1
Transport category: 3
Hazard No: 30
Tunnel restriction code: (D/E)

Inland waterways transport (ADN)

14.1. UN number:	UN 1987
14.2. UN proper shipping name:	ALCOHOLS, N.O.S. (Ethanol)
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3

Classification code:	F1
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number:	UN 1987
14.2. UN proper shipping name:	ALCOHOLS, N.O.S. (Ethanol)
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3

Special Provisions:	223, 274
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-E, S-D

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	UN 1987
14.2. UN proper shipping name:	ALCOHOLS, N.O.S. (Ethanol)
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3

Special Provisions:	A3 A180
Limited quantity Passenger:	10 L
Passenger LQ:	Y344
Excepted quantity:	E1
IATA-packing instructions - Passenger:	355
IATA-max. quantity - Passenger:	60 L
IATA-packing instructions - Cargo:	366
IATA-max. quantity - Cargo:	220 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Combustible liquid.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

2010/75/EU (VOC):	58,819 % (545,256 g/l)
2004/42/EC (VOC):	58,828 % (545,334 g/l)
Information according to 2012/18/EU (SEVESO III):	P5c FLAMMABLE LIQUIDS

Additional information

Regulation (EC) No. 648/2004 (Detergents regulation).

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).
Water hazard class (D):	1 - slightly hazardous to water

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): 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15.

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%
CLP: Classification, labelling and Packaging
REACH: Registration, Evaluation and Authorization of Chemicals
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
UN: United Nations
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
PBT: persistent, bioaccumulative, toxic

vPvB: very persistent, very bioaccumulative
RID: Regulations concerning the international carriage of dangerous goods by rail
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)
EmS: Emergency Schedules
MFAG: Medical First Aid Guide
ICAO: International Civil Aviation Organization
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
VOC: Volatile Organic Compounds
SVHC: Substance of Very High Concern
For abbreviations and acronyms, see table at http://abbrev.esdscom.eu

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Flam. Liq. 3; H226	On basis of test data
Eye Irrit. 2; H319	Calculation method

Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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