

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

### 1.1. Product identifier

Substance name : Fusel oil  
IUPAC name : Fusel Oil  
EC-No. : 232-395-2  
CAS-No. : 8013-75-0  
REACH registration No. : 01-2119970173-39-xxxx  
Formula : C5H12O

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

#### 1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use  
Use of the substance/mixture : Fuel additives  
Fuels  
Solvents  
Fusel oils are included in some spirits as desired flavor components, eg brandy, whiskey, fruit brandy, red wine et al.

#### 1.2.2. Uses advised against

No additional information available

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

Sasma  
Willem Dreeslaan 301  
2729 NE Zoetermeer – Zuid-Holland  
Netherlands  
T +31 79 363 30 64  
[sales@sasmabv.com](mailto:sales@sasmabv.com) - [www.sasmabv.com](http://www.sasmabv.com)

### 1.4. Emergency telephone number

Emergency number : Worldwide: For Hazardous Materials (or Dangerous Goods) Incident, Spill, Leak, Exposure, or Accident – Call NCEC Day or Night(24/7) +441865407333 - SASMA29003-NCEC

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER	+44 20 7188 7188	

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Flammable liquids, Category 3 H226  
Skin corrosion/irritation, Category 2 H315  
Serious eye damage/eye irritation, Category 1 H318  
Specific target organ toxicity – Single exposure, Category 3, Narcosis H336  
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation H335

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

#### Adverse physicochemical, human health and environmental effects

Flammable liquid and vapour. May cause drowsiness or dizziness. Harmful if swallowed. May cause respiratory irritation. Causes skin irritation. Causes serious eye damage.

# Fusel oil

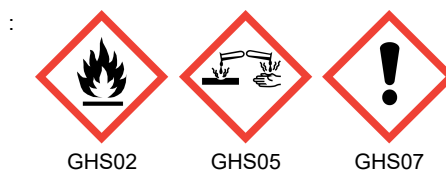
## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### 2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP)

Hazard statements (CLP)

Precautionary statements (CLP)

- : Danger
- : H226 - Flammable liquid and vapour.  
H315 - Causes skin irritation.  
H318 - Causes serious eye damage.  
H335 - May cause respiratory irritation.  
H336 - May cause drowsiness or dizziness.
- : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.  
No smoking.  
P240 - Ground and bond container and receiving equipment.  
P261 - Avoid breathing dust, fume, gas, mist, spray.  
P264 - Wash hands thoroughly after handling.  
P271 - Use only outdoors or in a well-ventilated area.  
P280 - Wear eye protection, protective clothing, protective gloves.  
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.  
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing.  
Rinse skin with water or shower.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor, a POISON CENTER.

### 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Fusel oil	CAS-No.: 8013-75-0 EC-No.: 232-395-2 REACH-no: 01-2119970173-39-xxxx	≤ 100	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H336 STOT SE 3, H335

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

### 3.2. Mixtures

Not applicable

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: Call a poison center or a doctor if you feel unwell. Victim conscious with laboured breathing: half-seated. If medical advice is needed, have product container or label at hand. Keep watching the victim. Check the vital functions. Never give anything by mouth to an unconscious person. Prevent cooling by covering the victim (no warming up).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell. Give oxygen or artificial respiration if necessary.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: If eye irritation persists: Get medical advice/attention. Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting. Immediately consult a doctor/medical service. Do NOT induce vomiting.

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

Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Serious damage to eyes.

#### 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	: Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Solid water jet ineffective as extinguishing medium. Do not use a heavy water stream.

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

Fire hazard	: Flammable liquid and vapour.
Hazardous decomposition products in case of fire	: Toxic fumes may be released. Upon combustion: CO and CO <sub>2</sub> are formed.

#### 5.3. Advice for firefighters

Precautionary measures fire	: Eliminate all ignition sources if safe to do so. This product is not to be used under conditions of poor ventilation. Keep container tightly closed and away from heat, sparks and flame. Keep cool. Protect from sunlight.
Firefighting instructions	: Eliminate all ignition sources if safe to do so. Use water spray or fog for cooling exposed containers. Take account of environmentally hazardous firefighting water. Contain the extinguishing fluids by bunding.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

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

General measures	: If leakage cannot be stopped, evacuate the area. Ensure adequate ventilation. Avoid breathing vapors / spray and contact with skin and eyes. Not spilled material touch or walk in. Eliminate all sources of ignition. Keep away from heat, sparks and open fire. Wear protective clothing as described in Section 8 of this Safety Data Sheet.
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##### 6.1.1. For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment.
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Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing vapours, gas, mist, fume, spray. Avoid contact with skin and eyes.

### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

## 6.2. Environmental precautions

Avoid release to the environment. Do not allow to enter drains or water courses. Notify authorities if product enters sewers or public waters.

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

For containment : Heating: dilute combustible gas/vapour with water curtain. Cover spill with non combustible material, e.g.: sand, earth, vermiculite. Do not touch or walk on the spilled product. Try to reduce evaporation. Provide adequate ventilation.

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

## 6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : In use, may form flammable vapour-air mixture. Handle empty containers with care because residual vapours are flammable. Flammable vapours may accumulate in the container. Do not spray on an open flame or other ignition source. Protect from direct sunlight. Do not pierce or burn, even after use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing vapours, gas, mist, fume, spray. Avoid contact with skin and eyes.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

Technical measures : Ground/bond container and receiving equipment.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Incompatible products : Oxidizing agent.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: ignition sources. heat sources.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. ignition sources.

Storage area : Keep out of direct sunlight. Store away from heat. Fireproof storeroom. Store in a well-ventilated place. Store in a cool area.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1 National occupational exposure and biological limit values

No additional information available

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### 8.1.2. Recommended monitoring procedures

No additional information available

### 8.1.3. Air contaminants formed

No additional information available

### 8.1.4. DNEL and PNEC

Fusel oil (8013-75-0)	
<b>PNEC (Water)</b>	
PNEC aqua (freshwater)	0.053 mg/l
PNEC aqua (marine water)	0.005 mg/l
<b>PNEC (Sediment)</b>	
PNEC sediment (freshwater)	0.219 mg/kg dwt
PNEC sediment (marine water)	0.022 mg/kg dwt
<b>PNEC (Soil)</b>	
PNEC soil	0.013 mg/kg dwt
<b>PNEC (STP)</b>	
PNEC sewage treatment plant	100 mg/l

### 8.1.5. Control banding

No additional information available

## 8.2. Exposure controls

### 8.2.1. Appropriate engineering controls

#### Appropriate engineering controls:

Ensure good ventilation of the work station.

### 8.2.2. Personal protection equipment

#### Personal protective equipment:

Wear recommended personal protective equipment.

#### Personal protective equipment symbol(s):



#### 8.2.2.1. Eye and face protection

##### Eye protection:

Safety glasses

Eye protection			
Type	Field of application	Characteristics	Standard
Safety goggles		With side shields	EN 166

#### 8.2.2.2. Skin protection

##### Skin and body protection:

Wear fire/flammable resistant/retardant clothing. Chemical resistant safety shoes

##### Hand protection:

Protective gloves

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Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Reusable gloves	Butyl rubber	6 (> 480 minutes)	0.7		EN ISO 374

### Other skin protection

#### Materials for protective clothing:

Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

#### 8.2.2.3. Respiratory protection

##### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Respiratory protection			
Device	Filter type	Condition	Standard
Reusable half mask	Type A - High-boiling (>65 °C) organic compounds		EN 14387

#### 8.2.2.4. Thermal hazards

No additional information available

#### 8.2.3. Environmental exposure controls

##### Environmental exposure controls:

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Colourless to light yellow.
Appearance	: Clear liquid.
Odour	: Irritating. Disagreeable.
Odour threshold	: Not available
Melting point	: < -20 °C
Freezing point	: Not available
Boiling point	: 60 – 143
Flammability	: Not applicable
Explosive properties	: the study does not need to be conducted because there are no chemical groups present in the molecule which are associated with explosive properties.
Oxidising properties	: the study does not need to be conducted because there are no chemical groups present in the molecule which are associated with oxidising properties and hence, the classification procedure does not need to be applied.
Explosive limits	: Not available
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: >26 °C
Auto-ignition temperature	: 300 °C
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Viscosity, dynamic	: 3.64 – 3.88 mPa·s @ 20 °C
Solubility	: Material nearly insoluble in water.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: -1.26 – -0.14
Vapour pressure	: 78.7 hPa @ 20 °C
Vapour pressure at 50 °C	: Not available
Density	: 0.84 g/cm <sup>3</sup> @ 15 °C

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Relative density : Not available  
Relative vapour density at 20°C : Not available  
Particle characteristics : Not applicable

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

#### 9.2.2. Other safety characteristics

Other properties : Gas/vapour heavier than air at 20°C, Volatile

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Flammable liquid and vapour.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

Oxidizing agent.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified

Fusel oil (8013-75-0)	
LD50 oral rat	4172 mg/kg
LD50 dermal rabbit	3216 mg/kg
LC50 Inhalation - Rat (Vapours)	12.8 – 16.6 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.  
Serious eye damage/irritation : Causes serious eye damage.  
Respiratory or skin sensitisation : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified  
Reproductive toxicity : Not classified  
STOT-single exposure : May cause drowsiness or dizziness. May cause respiratory irritation.  
STOT-repeated exposure : Not classified  
Aspiration hazard : Not classified

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### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties

: Endocrine disrupting properties  
The substance has not been identified as having endocrine disrupting properties in accordance with Regulation (EU) 2017/2100 or Regulation 2018/605, nor has it been included in the Candidate List of Substances of Very High Concern under EU REACH Article 59 due to this property.

#### 11.2.2. Other information

No additional information available

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.  
Hazardous to the aquatic environment, short-term (acute) : Not classified  
Hazardous to the aquatic environment, long-term (chronic) : Not classified

#### Fusel oil (8013-75-0)

LC50 - Fish [1]	120 mg/l
EC50 - Crustacea [1]	173 mg/l
EC50 72h - Algae [1]	275 mg/l

### 12.2. Persistence and degradability

#### Fusel oil (8013-75-0)

Persistence and degradability	Readily biodegradable in water.
Biodegradation	70 – 80 % in 28 days

### 12.3. Bioaccumulative potential

#### Fusel oil (8013-75-0)

Partition coefficient n-octanol/water (Log Pow)	-1.26 – -0.14
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

#### Fusel oil (8013-75-0)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : See 2.3 and 11.2.

### 12.7. Other adverse effects

Additional information : No other effects known. Avoid release to the environment.



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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information	: Flammable vapours may accumulate in the container.

### SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number or ID number</b>				
UN 1201	UN 1201	UN 1201	UN 1201	UN 1201
<b>14.2. UN proper shipping name</b>				
FUSEL OIL	FUSEL OIL	Fusel oil	FUSEL OIL	FUSEL OIL
<b>Transport document description</b>				
UN 1201 FUSEL OIL, 3, III, (D/E)	UN 1201 FUSEL OIL, 3, III	UN 1201 Fusel oil, 3, III	UN 1201 FUSEL OIL, 3, III	UN 1201 FUSEL OIL, 3, III
<b>14.3. Transport hazard class(es)</b>				
3	3	3	3	3
				
<b>14.4. Packing group</b>				
III	III	III	III	III
<b>14.5. Environmental hazards</b>				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

#### 14.6. Special precautions for user

##### Overland transport

Classification code (ADR)	: F1
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC03, LP01, R001
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T2
Portable tank and bulk container special provisions (ADR)	: TP1
Tank code (ADR)	: LGBF
Vehicle for tank carriage	: FL
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V12
Special provisions for carriage - Operation (ADR)	: S2
Hazard identification number (Kemler No.)	: 30

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Orange plates : 

Tunnel restriction code (ADR) : D/E  
EAC code : •2YE

### Transport by sea

Special provisions (IMDG) : 223, 955  
Limited quantities (IMDG) : 5 L  
Excepted quantities (IMDG) : E1  
Packing instructions (IMDG) : P001, LP01  
IBC packing instructions (IMDG) : IBC03  
Tank instructions (IMDG) : T2  
Tank special provisions (IMDG) : TP1  
EmS-No. (Fire) : F-E  
EmS-No. (Spillage) : S-D  
Stowage category (IMDG) : A  
Properties and observations (IMDG) : Colourless, oily liquid with a disagreeable odour. A mixture consisting of amyl alcohols. Immiscible with water.

### Air transport

PCA Excepted quantities (IATA) : E1  
PCA Limited quantities (IATA) : Y344  
PCA limited quantity max net quantity (IATA) : 10L  
PCA packing instructions (IATA) : 355  
PCA max net quantity (IATA) : 60L  
CAO packing instructions (IATA) : 366  
CAO max net quantity (IATA) : 220L  
Special provisions (IATA) : A3  
ERG code (IATA) : 3L

### Inland waterway transport

Classification code (ADN) : F1  
Limited quantities (ADN) : 5 L  
Excepted quantities (ADN) : E1  
Equipment required (ADN) : PP, EX, A  
Ventilation (ADN) : VE01  
Number of blue cones/lights (ADN) : 0

### Rail transport

Classification code (RID) : F1  
Limited quantities (RID) : 5L  
Excepted quantities (RID) : E1  
Packing instructions (RID) : P001, IBC03, LP01, R001  
Mixed packing provisions (RID) : MP19  
Portable tank and bulk container instructions (RID) : T2  
Portable tank and bulk container special provisions (RID) : TP1  
Tank codes for RID tanks (RID) : LGBF  
Transport category (RID) : 3  
Special provisions for carriage – Packages (RID) : W12  
Colis express (express parcels) (RID) : CE4  
Hazard identification number (RID) : 30

## 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

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### SECTION 15: Regulatory information

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

##### 15.1.1. EU-Regulations

###### REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)	
Reference code	Applicable on
3(a)	Fusel oil
3(b)	Fusel oil
40.	Fusel oil

###### REACH Annex XIV (Authorisation List)

Not applicable.

###### REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

###### PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

###### POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

###### Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

###### Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

###### Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

##### 15.1.2. National regulations

###### Germany

- Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG).  
Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).
- Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 9669).
- Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

###### Netherlands

- ABM category : A(4) - low hazard for aquatic organisms, may have longterm hazardous effects in aquatic environment
- SZW-lijst van kankerverwekkende stoffen : Fusel oil is listed
- SZW-lijst van mutagene stoffen : Fusel oil is listed
- SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed
- SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed
- SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

###### Denmark

- Class for fire hazard : Class II-1
- Store unit : 5 liter
- Classification remarks : R10 <H226;H315;H318;H335;H336>; Emergency management guidelines for the storage of flammable liquids must be followed
- Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

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### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

### SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Adverse health effects caused by endocrine disrupting properties	Added	
	Supersedes	Added	
	Revision date	Added	
2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.2	Precautionary statements (CLP)	Modified	
2.2	Hazard statements (CLP)	Modified	
8.2	Personal protective equipment	Added	
9.1	Vapour pressure	Added	
9.1	Oxidising properties	Modified	
9.2	Other properties	Added	
11.1	ATE CLP (vapours)	Added	
11.1	ATE CLP (dermal)	Added	
11.1	ATE CLP (oral)	Modified	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	

### Abbreviations and acronyms:

CAS-No.	Chemical Abstract Service number
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
EC-No.	European Community number
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association

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Abbreviations and acronyms:	
IMDG	International Maritime Dangerous Goods
IOELV	Indicative Occupational Exposure Limit Value
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
N.O.S.	Not Otherwise Specified
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TRGS	Technical Rules for Hazardous Substances
SDS	Safety Data Sheet
VOC	Volatile Organic Compounds
WGK	Water Hazard Class
vPvB	Very Persistent and Very Bioaccumulative

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Full text of H- and EUH-statements:	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 3	Flammable liquids, Category 3
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.