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

### 1.1. Product identifier

Trade name/designation : Vaeliquid  
 Chemical name : tetrahydrofuran  
 EC Index : 603-025-00-0  
 EC No : 203-726-8  
 CAS No. : 109-99-9

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

Specific use(s) : Industrial use

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

Company : Imperbel NV/SA  
 Bergensesteenweg 32  
 1651 Lot , Belgium  
 Telephone: +32 2 334 87 00  
 Fax: +32 2 377 01 90  
 E-mail: infobe@derbigum.com  
 Website: www.derbigum.com

### 1.4. Emergency telephone number

Emergency telephone : + 32 3 575 55 55 (24h/24h)

IRELAND (REPUBLIC OF)  
 National Poisons Information Centre  
 Beaumont Hospital : +35 318 37 99 64  
 UNITED KINGDOM  
 National Poisons Information Service  
 (Newcastle Centre) : 0870 600 6266 (UK only)  
 Regional Drugs and Therapeutics Centre,  
 Wolfson Unit

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### **2.1.1. Classification according to Regulation (EU) 1272/2008**

CLP-Classification : The product is classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

Flam. Liq. 2 H225  
 Carc. 2 H351  
 Eye Irrit. 2 H319  
 STOT SE 3 H335

Full text of H-phrases: see section 16

#### **2.1.2. Classification according to EU Directives 67/548/EEC or 1999/45/EC**

Carc.Cat.3; R40  
 F; R11-19  
 Xi; R36/37

Full text of R-phrases: see section 16

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## 2.2. Label elements

### 2.2.1. Labelling according to Regulation (EU) 1272/2008

Hazard pictograms :



GHS02

GHS07

GHS08

Signal word :

Danger

Hazard statements :

H225 - Highly flammable liquid and vapour.  
H351 - Suspected of causing cancer.  
H319 - Causes serious eye irritation.  
H335 - May cause respiratory irritation.

Precautionary statements :

P201 - Obtain special instructions before use.  
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P281 - Use personal protective equipment as required.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P313 - IF exposed or concerned: Get medical advice/attention.

Extra phrases :

EUH019 - May form explosive peroxides.  
Restricted to professional users.

### 2.2.2. Labelling according to Directives (67/548 - 1999/45)

Not relevant

## 2.3. Other hazards

Other hazards :

Results of PBT and vPvB assessment :  
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).  
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance name	Product identifier	%	Classification according to Directive 67/548/EEC
Tetrahydrofuran	(CAS No.) 109-99-9 (EC No) 203-726-8 (EC Index) 603-025-00-0	0 - 100	Carc. Cat.3; R40 F; R11 R19 Xi; R36/37
Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Tetrahydrofuran	(CAS No.) 109-99-9 (EC No) 203-726-8 (EC Index) 603-025-00-0	0 - 100	Flam. Liq. 2, H225 Carc. 2, H351 Eye Irrit. 2, H319 STOT SE 3, H335

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

### 3.2. Mixtures

Not applicable

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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Inhalation	: Keep at rest. Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Immediately consult a doctor/medical service .
Skin contact	: Take off immediately all contaminated clothing. Wash with plenty of soap and water. Rinse with plenty of water. When in doubt or if symptoms are observed, get medical advice.
Eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	: Call a physician immediately. Do not induce vomiting. Rinse mouth, ingest activated charcoal. Rinse mouth immediately and drink plenty of water.
Additional advice	: First aider: Pay attention to self-protection! See also section 8 . Never give anything by mouth to an unconscious person or a person with cramps. Show this safety data sheet to the doctor in attendance. Treat symptomatically.

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

Inhalation	: May cause respiratory irritation. Most important symptoms : Headache, Drowsiness, narcosis ...
Skin contact	: May be irritating.
Eye contact	: Causes serious eye irritation.
Ingestion	: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Other adverse effects	: Suspected of causing cancer.

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

No data available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media which shall not be used for safety reasons	: Strong water jet .

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

Fire hazard	: Highly flammable liquid and vapour.
Specific hazards	: May form explosive peroxides. Vapours can form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. Burning produces noxious and toxic fumes. Hazardous decomposition products: COx. Do not allow run-off from fire-fighting to enter drains or water courses. Dispose according to legislation.

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### **5.3. Advice for firefighters**

Advice for firefighters : Evacuate area.  
Special protective equipment for firefighters :  
In case of fire: Wear self-contained breathing apparatus.  
Cool containers / tanks with water spray.  
Temperature class : T3.

## **SECTION 6: Accidental release measures**

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

For non-emergency personnel : Evacuate area.  
Use personal protective equipment as required.  
See also section 8.  
Avoid contact with skin, eyes and clothes.  
Do not breathe vapour/spray.  
Provide adequate ventilation.  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Take precautionary measures against static discharge.

For emergency responders : Only qualified personnel equipped with suitable protective equipment may intervene.  
See also section 8.

### **6.2. Environmental precautions**

Environmental precautions : Do not allow to enter into ground-water, surface water or drains.  
Do not allow contact with soil, surface or ground water.

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

Methods for cleaning up : Remove all sources of ignition.  
Use only explosion-proof equipment.  
Stop leak if safe to do so.  
Dam up.  
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).  
Collect in closed and suitable containers for disposal.  
Dispose according to legislation.  
After cleaning, flush away traces with water.

### **6.4. Reference to other sections**

See also section 8.  
See also section 13.

## **SECTION 7: Handling and storage**

### **7.1. Precautions for safe handling**

Handling : Provide adequate ventilation.  
Use personal protective equipment as required.  
See also section 8 .  
Avoid contact with skin, eyes and clothes.  
Do not breathe vapour/spray.  
Ensure that the equipment is adequately grounded.  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Do not smoke.  
After use replace the closing cap immediately.  
Reacts with air to form peroxides.  
Before use: check for peroxides and eliminate them .  
Protect against light.  
Ensure proper process control to avoid excess waste discharge

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(temperature, concentration, pH value, time).  
Do not allow to enter into surface water or drains.  
Take any precaution to avoid mixing with incompatible materials.  
See also section 10.

Advices on general occupational hygiene : Use only in area provided with appropriate exhaust ventilation.  
Use only in an area equipped with a safety shower.  
Wash hands and face before breaks and immediately after handling of the product.  
When using do not eat, drink or smoke.  
Keep away from food, drink and animal feedingstuffs.  
Keep work clothes separately.  
Take off contaminated clothing and wash before reuse.  
Keep good industrial hygiene.

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

Storage : Storage of flammable liquids .  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Keep away from direct sunlight.  
Keep container tightly closed in a cool, well-ventilated place.  
Keep under a nitrogen blanket.  
Do not store near or with any of the incompatible materials listed in section 10.

Packaging material : Keep/Store only in original container.  
Do not burn, or use a cutting torch on, the empty drum.  
Do not pierce or burn, even after use.

### **7.3 Specific end use(s)**

No data available

## **SECTION 8: Exposure controls/personal protection**

### **8.1. Control parameters**

Exposure limit values :

<b>Tetrahydrofuran (109-99-9)</b>		
EU	IOELV TWA (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
EU	IOELV TWA (ppm)	50 ppm
EU	IOELV STEL (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
EU	IOELV STEL (ppm)	100 ppm
Austria	MAK (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Austria	MAK (ppm)	50 ppm
Austria	MAK Short time value (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Austria	MAK Short time value (ppm)	100 ppm
Belgium	Limit value (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Belgium	Limit value (ppm)	50 ppm
Belgium	Short time value (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Belgium	Short time value (ppm)	100 ppm
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	150,0 mg/m <sup>3</sup>
Bulgaria	OEL TWA (ppm)	50 ppm
Bulgaria	OEL STEL (mg/m <sup>3</sup> )	300,0 mg/m <sup>3</sup>
Bulgaria	OEL STEL (ppm)	100 ppm
Cyprus	OEL TWA (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Cyprus	OEL TWA (ppm)	50 ppm
Cyprus	OEL STEL (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Cyprus	OEL STEL (ppm)	100 ppm

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<b>Tetrahydrofuran (109-99-9)</b>		
France	VLE (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup> (restrictive limit)
France	VLE (ppm)	100 ppm (restrictive limit)
France	VME (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup> (restrictive limit)
France	VME (ppm)	50 ppm (restrictive limit)
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup> (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	TRGS 900 Occupational exposure limit value (ppm)	50 ppm (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	TRGS 903 (BGW)	2 mg/l (Medium: urine - Time: end of shift - Parameter: Tetrahydrofuran)
Gibraltar	OEL TWA (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Gibraltar	OEL TWA (ppm)	50 ppm
Gibraltar	OEL STEL (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Gibraltar	OEL STEL (ppm)	100 ppm
Greece	OEL TWA (mg/m <sup>3</sup> )	590 mg/m <sup>3</sup>
Greece	OEL TWA (ppm)	200 ppm
Greece	OEL STEL (mg/m <sup>3</sup> )	735 mg/m <sup>3</sup>
Greece	OEL STEL (ppm)	250 ppm
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	50 ppm
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	100 ppm
Italy	OEL TWA (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Italy	OEL TWA (ppm)	50 ppm
Italy	OEL STEL (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Italy	OEL STEL (ppm)	100 ppm
Latvia	OEL TWA (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Latvia	OEL TWA (ppm)	50 ppm
Spain	VLA-ED (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup> (indicative limit value)
Spain	VLA-ED (ppm)	50 ppm (indicative limit value)
Spain	VLA-EC (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Spain	VLA-EC (ppm)	100 ppm
Switzerland	VLE (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Switzerland	VLE (ppm)	100 ppm
Switzerland	VME (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Switzerland	VME (ppm)	50 ppm
The Netherlands	MAC TGG 8H (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
The Netherlands	MAC TGG 15MIN (mg/m <sup>3</sup> )	600 mg/m <sup>3</sup>
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
United Kingdom	WEL TWA (ppm)	50 ppm
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
United Kingdom	WEL STEL (ppm)	100 ppm
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (ppm)	50 ppm
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (ppm)	50 ppm

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<b>Tetrahydrofuran (109-99-9)</b>		
Finland	HTP-arvo (15 min)	300 mg/m <sup>3</sup>
Finland	HTP-arvo (15 min) (ppm)	100 ppm
Hungary	AK-érték	150 mg/m <sup>3</sup>
Hungary	CK-érték	300 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (ppm)	50 ppm
Ireland	OEL (15 min ref) (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Ireland	OEL (15 min ref) (ppm)	100 ppm
Lithuania	IPRV (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Lithuania	IPRV (ppm)	50 ppm
Lithuania	TPRV (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Lithuania	TPRV (ppm)	100 ppm
Malta	OEL TWA (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Malta	OEL TWA (ppm)	50 ppm
Malta	OEL STEL (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Malta	OEL STEL (ppm)	100 ppm
Norway	Gjennomsnittsverdier (AN) (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Norway	Gjennomsnittsverdier (AN) (ppm)	50 ppm
Norway	Gjennomsnittsverdier (Korttidsverdi) (mg/m <sup>3</sup> )	187,5 mg/m <sup>3</sup>
Norway	Gjennomsnittsverdier (Korttidsverdi) (ppm)	75 ppm
Poland	NDS (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Poland	NDSch (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Romania	OEL TWA (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Romania	OEL TWA (ppm)	50 ppm
Romania	OEL STEL (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Romania	OEL STEL (ppm)	100 ppm
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (ppm)	50 ppm
Slovakia	NPHV (Hraničná) (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	150 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (ppm)	50 ppm
Sweden	kortidsvärde (KTV) (mg/m <sup>3</sup> )	250 mg/m <sup>3</sup>
Sweden	kortidsvärde (KTV) (ppm)	80 ppm

Recommended monitoring procedures: : Concentration measurement in air  
Personal monitoring

## **8.2. Exposure controls**

Personal protective equipment : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Provide adequate ventilation.  
In case of insufficient ventilation, wear suitable respiratory equipment.  
Respirator with a half face mask (EN140).  
Respirator with a full face mask (EN136).  
Recommended Filter type: A / A-P2 (EN141).  
High concentrations can remove oxygen and cause dizziness or suffocation.  
Use compressed air or fresh air breathing apparatus in closed compartments. EN 138/269 / EN139/137.

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Hand protection	: Wear chemically resistant gloves (tested to EN374) . Breakthrough time (maximum wearing time) >8h : Barrier® (PE/PA/PE) / Silver shield ® / 4H® (PE/EVAL/PE) . The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Not recommended. : NR (natural rubber, natural latex) / NBR (Nitrile rubber) / Neoprene, PVA, PVC, PE, Butyl rubber.
Eye protection	: Tightly fitting safety goggles / Wear eye glasses with side protection according to EN 166. .
Body protection	: Wear suitable protective clothing. impervious clothing .
Engineering control measures	: Provide adequate ventilation. Use only in area provided with appropriate exhaust ventilation. A washing facility/water for eye and skin cleaning purposes should be present. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Organisational measures to prevent /limit releases, dispersion and exposure : See also section 7.
Environmental exposure controls	: Do not allow to enter into surface water or drains. Comply with applicable Community environmental protection legislation.

## SECTION 9: Physical and chemical properties

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

Appearance	: liquid /,thixotropic
Colour	: various
Odour	: ether-like
Odour Threshold	: no data available
pH	: 7 (@20°C)
Melting point/range	: -108,5 °C
Boiling point/boiling range	: 65,5 °C
Flash point	: -20 °C
Evaporation rate	: 2,4 (Ether = 1) DIN53170
Flammability (solid, gas)	: not applicable
Explosion limits (LEL, UEL)	: LEL: 1,5 vol % UEL: 12 vol %
Vapour pressure	: 217 mbar (@ 20°C)
Vapour density	: no data available
Density	: 0,8892 g/cm <sup>3</sup> (@ 20°C)
Water solubility	: miscible
Partition coefficient: n-octanol/water	: no data available
Autoignition temperature	: 212 °C Ignition temperature in °C (DIN 51794 200ml)



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Decomposition temperature : no data available  
Viscosity : no data available  
Explosive properties : not applicable  
Vapours can form explosive mixtures with air.  
May form explosive peroxides  
(Exposure to light + O<sub>2</sub>).  
Oxidizing properties : not applicable  
The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.

**9.2. Other information**

Surface tension : no data available  
Molecular weight : ~ 72,11 g/mol  
Volatile organic compounds (VOC) content in percent by weight : 100 %

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

Reactivity : Highly flammable liquid and vapour.  
See also section 10.5

**10.2. Chemical stability**

Stability : The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Possibility of hazardous reactions : May form explosive peroxides.  
This reaction is accelerated on exposure to light & O<sub>2</sub>.  
See also section 7.

**10.4. Conditions to avoid**

Conditions to avoid : Heat, flames and sparks.  
Exposure to air.  
Exposure to light.  
See also section 7.

**10.5. Incompatible materials**

Incompatible materials : Strong oxidizing agents , Oxygen . See also section 7.

**10.6. Hazardous decomposition products**

Hazardous decomposition products : Burning produces noxious and toxic fumes. Hazardous decomposition products: Carbon oxides . See also section 10.3.

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

Acute toxicity : Not classified (Based on available data, the classification criteria are not met.)

<b>Tetrahydrofuran (109-99-9)</b>	
ATE (oral)	1650,000 mg/kg bodyweight
ATE (dust,mist)	180,000 mg/l/4h

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met.)  
pH: 7 (@20°C)

Serious eye damage/eye irritation : Causes serious eye irritation.  
pH: 7 (@20°C)

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- Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met.)
- Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met.)
- Carcinogenicity : Suspected of causing cancer.
- Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met.)
- Specific target organ toxicity (single exposure) : May cause respiratory irritation.
- Specific target organ toxicity (repeated exposure) : Not classified (Based on available data, the classification criteria are not met.)
- Aspiration hazard : Not classified (Based on available data, the classification criteria are not met.)

#### Other information

Symptoms related to the physical, chemical and toxicological characteristics :,see section 4.2.

## SECTION 12: Ecological information

### 12.1. Toxicity

Toxicity : Information given is based on data on the components and the ecotoxicology of similar products.

<b>Tetrahydrofuran (109-99-9)</b>	
LC50 fish 1	1970 - 2360 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	2700 - 3600 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

### 12.2. Persistence and degradability

Persistence and degradability : Readily biodegradable.  
Solvent

### 12.3. Bioaccumulative potential

Bioaccumulation : Does not bioaccumulate.  
Partition coefficient: n-octanol/water : no data available

### 12.4. Mobility in soil

Mobility : No data available  
Surface tension : no data available

### 12.5. Results of PBT and vPvB assessment

PBT/vPvB : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).  
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

### 12.6. Other adverse effects

Other information : No data available

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

- Waste from residues / unused products : Handle with care.  
See also section 7.  
Handling and storage  
Do not allow to enter into surface water or drains.  
Dispose according to legislation.  
Where possible recycling is preferred to disposal or incineration.  
Collect and dispose of waste product at an authorised disposal facility.
- Contaminated packaging : Do not burn, or use a cutting torch on, the empty drum.  
Do not puncture or incinerate.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.
- List of suggested waste codes/waste designations in accordance with the EWC: : Classified as hazardous waste according to European Union regulations.  
The following Waste Codes are only suggestions:  
150110 - packaging containing residues of or contaminated by dangerous substances .  
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

## SECTION 14: Transport information

### 14.1. UN number

UN-No. : 2056

### 14.2. UN proper shipping name

Proper Shipping Name : TETRAHYDROFURAN  
Proper shipping name IATA/IMDG : TETRAHYDROFURAN

### 14.3. Transport hazard class(es)

#### 14.3.1. Overland transport

Class : 3 - Flammable liquid  
Hazard identification number (Kemler No.) : 33  
Classification code : F1  
ADR/RID-Labels : 3 - Flammable liquid



#### 14.3.2. Inland waterway transport (ADN)

Class (UN) : 3

#### 14.3.3. Transport by sea

Class or Division : 3 - Flammable liquid

#### 14.3.4. Air transport

Class or Division : 3 - Flammable liquid

### 14.4. Packing group

Packing group : II

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#### **14.5. Environmental hazards**

Other information : No supplementary information available.

#### **14.6 Special precautions for user**

No data available

#### **14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Code: IBC : Ship type 3,. Pollution category Z.

### **SECTION 15: Regulatory information**

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

##### **15.1.1. EU-Regulations**

Restrictions on use : REACH Annex XVII Art 3 & 40

Restrictions on use :

3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008 : Vaeliquid - Tetrahydrofuran

40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not. : Vaeliquid - Tetrahydrofuran

This product contains an ingredient according to the candidate list of Annex XIV of the REACH Regulation 1907/2006/EC. : not applicable

Authorisations : not applicable

Volatile organic compounds (VOC) content in percent by weight: : 100 %

##### **15.1.2. National regulations**

DE : WGK : 1  
 DE : German storage class (LGK) : LGK 3 - Flammable liquid materials (Flashpoint < 55 °C)  
 DE : TA-Luft : Organic Substances  
 DE : Technische Regeln für Gefahrstoffe (TRGS) : applicable  
 DE : Risk classification according to VbF : B - Liquids with a flashpoint below 21°C, but soluble in water at 15°C or flammable ingredients that are soluble in water at 15°C  
 FR : Installations classées : 143x  
 NL : ABM : 11 - Weinig schadelijk voor in het water levende organismen (B)  
 NL : NeR (Nederlandse emissie Richtlijn) : Organic substances in vapour or gaseous form

#### **15.2. Chemical safety assessment**

Chemical Safety Assessment : For this substance a chemical safety assessment has not been carried out.

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## SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Carc. 2	: Carcinogenicity, Category 2
Eye Irrit. 2	: Serious eye damage/eye irritation Category 2
Flam. Liq. 2	: Flammable liquids, Category 2
STOT SE 3	: Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H225	: Highly flammable liquid and vapour.
H319	: Causes serious eye irritation.
H335	: May cause respiratory irritation.
H351	: Suspected of causing cancer.
R11	: Highly flammable.
R19	: May form explosive peroxides.
R36/37	: Irritating to eyes and respiratory system.
R40	: Limited evidence of a carcinogenic effect.
F	: Highly flammable
Xi	: Irritant

Key literature references and sources for data : European Chemicals Bureau (<http://esis.jrc.ec.europa.eu>)  
SDS from supplier, dated 13.12.2012

Safety datasheet sections which have been updated: : 1,15,16

Abbreviations and acronyms : ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin  
ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route  
CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC  
IATA = International Air Transport Association  
IMDG = International Maritime Dangerous Goods Code  
LEL = Lower Explosive Limit/Lower Explosion Limit  
UEL = Upper Explosion Limit/Upper Explosive Limit  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals  
EC50 = Median Effective Concentration  
LC50 = Median lethal concentration  
LD50 = Median lethal dose  
TLV = Threshold limits  
TWA = time weighted average  
STEL = Short term exposure limit  
persistent, bioaccumulating and toxic (PBT).  
vPvB = very persistent and very bioaccumulating  
WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

The contents and format of this SDS are in accordance with EEC Commission Directive 1999/45/EC, 67/548/EC, 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

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