



# SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2020/878

## demo SDS mixture

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

#### 1.1. Product identifier

UFI : 2R00-60JC-C005-STV1  
Product name : demo SDS mixture  
Synonyms : synoniem 1; synoniem 2  
Registration number REACH : Not applicable (mixture)  
Product type REACH : Mixture

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

##### 1.2.1 Relevant identified uses

Solvent

##### 1.2.2 Uses advised against

No uses advised against known

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

##### Supplier of the safety data sheet

BIG  
Technische Schoolstraat 43A  
2440 Geel  
☎ +32 14 58 45 47  
☎ +32 14 58 35 16  
info@big.be

#### 1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :  
+32 14 58 45 45 (BIG)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Flam. Liq.	category 2	H225: Highly flammable liquid and vapour.
Carc.	category 2	H351: Suspected of causing cancer.
Skin Sens.	category 1	H317: May cause an allergic skin reaction.
Skin Corr.	category 1B	H314: Causes severe skin burns and eye damage.
Eye Dam.	category 1	H318: Causes serious eye damage.
STOT SE	category 3	H335: May cause respiratory irritation.
Aquatic Chronic	category 3	H412: Harmful to aquatic life with long lasting effects.

#### 2.2. Label elements



Contains: tetrahydrofuran; tetraethylenepentamine.

**Signal word** Danger

##### H-statements

H225 Highly flammable liquid and vapour.  
H351 Suspected of causing cancer.  
H317 May cause an allergic skin reaction.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.  
H412 Harmful to aquatic life with long lasting effects.

##### P-statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P280 Wear protective gloves, protective clothing and eye protection/face protection.  
P260 Do not breathe vapours/mist.  
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

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P310 Immediately call a POISON CENTER/doctor.

## Supplemental information

EUH019 May form explosive peroxides.

### 2.3. Other hazards

May build up electrostatic charges: risk of ignition  
Caution! Substance is absorbed through the skin

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark	M-factors and ATE
tetrahydrofuran 01-2119444314-46	109-99-9 203-726-8	C>80 %	Flam. Liq. 2; H225 Carc. 2; H351 Eye Irrit. 2; H319 STOT SE 3; H335 EUH019 Eye Irrit. 2; H319: C≥25%, (CLP Annex VI (ATP 3)) STOT SE 3; H335: C≥25%, (CLP Annex VI (ATP 3))	(1)(2)(10)	Constituent	
tetraethylenepentamine	112-57-2 203-986-2	10%<C<15%	Skin Sens. 1; H317 Acute Tox. 4; H312 Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Chronic 2; H411	(1)(10)	Constituent	

(1) For H- and EUH-statements in full: see heading 16

(2) Substance with a Community workplace exposure limit

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General:

Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

#### After inhalation:

Remove victim into fresh air. Immediately consult a doctor/medical service.

#### After skin contact:

If possible, wipe up/dry remove chemical. Then rinse/shower immediately for 30 minutes with (lukewarm) water. Cut clothing; never remove burnt clothing from the wound. Do not give any pain medication. Consult a doctor/medical service.

#### After eye contact:

Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a doctor/medical service.

#### After ingestion:

Rinse mouth with water. Immediately consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

#### 4.2.1 Acute symptoms

##### After inhalation:

Irritation of the respiratory tract. Irritation of the nasal mucous membranes. EXPOSURE TO HIGH CONCENTRATIONS: Corrosion of the upper respiratory tract. Nausea. Headache. Respiratory difficulties. Dizziness. Coughing. Disturbances of consciousness. Central nervous system depression. Feeling of weakness. Sensorial disturbances. Ringing in the ears.

##### After skin contact:

Caustic burns/corrosion of the skin.

##### After eye contact:

Corrosion of the eye tissue.

##### After ingestion:

Dry/sore throat. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Symptoms similar to those listed under inhalation.

#### 4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### 5.1.1 Suitable extinguishing media:

Small fire: Quick-acting ABC powder extinguisher, Quick-acting BC powder extinguisher, Quick-acting class B foam extinguisher, Quick-acting CO2 extinguisher.  
Major fire: Class B foam (alcohol-resistant), Water spray if puddle cannot expand.

#### 5.1.2 Unsuitable extinguishing media:

Small fire: Water (quick-acting extinguisher, reel); risk of puddle expansion.  
Major fire: Water; risk of puddle expansion.

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

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide).

### 5.3. Advice for firefighters

#### 5.3.1 Instructions:

Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

#### 5.3.2 Special protective equipment for fire-fighters:

Gas-tight suit (EN 943). Corrosion-proof suit (EN 14605). Self-contained breathing apparatus (EN 136 + EN 137).

## SECTION 6: Accidental release measures

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

Keep upwind. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Keep containers closed.

#### 6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

#### 6.1.2 Protective equipment for emergency responders

Gas-tight suit (EN 943). Corrosion-proof suit (EN 14605).

#### Suitable protective clothing

See heading 8.2

### 6.2. Environmental precautions

Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Take account of toxic/corrosive precipitation water. Prevent soil and water pollution. Prevent spreading in sewers.

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

Take up liquid spill into inert absorbent material. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

### 6.4. Reference to other sections

See heading 13.

## SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 7.1. Precautions for safe handling

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Gas/vapour heavier than air at 20°C. Observe very strict hygiene - avoid contact. Remove contaminated clothing immediately. Before use: check for peroxides and eliminate them. Cool before opening. Keep container tightly closed. Use corrosionproof equipment. Do not discharge the waste into the drain.

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

#### 7.2.1 Safe storage requirements:

Meet the legal requirements. Store in a cool area. Store in a dark area. Keep container in a well-ventilated place. Fireproof storeroom. Provide for a tub to collect spills. Provide the tank with earthing. Max. storage time: 365 day(s).

#### 7.2.2 Keep away from:

Heat sources, ignition sources, oxidizing agents, (strong) bases.

#### 7.2.3 Suitable packaging material:

Aluminium.

#### 7.2.4 Non suitable packaging material:

Synthetic material.

### 7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1 Occupational exposure

##### a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

##### EU

Tetrahydrofuran	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	50 ppm
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	150 mg/m <sup>3</sup>
	Short time value (Indicative occupational exposure limit value)	100 ppm
	Short time value (Indicative occupational exposure limit value)	300 mg/m <sup>3</sup>

##### Belgium

Tétrahydrofurane	Time-weighted average exposure limit 8 h	50 ppm
	Time-weighted average exposure limit 8 h	150 mg/m <sup>3</sup>
	Short time value	100 ppm
	Short time value	300 mg/m <sup>3</sup>

##### The Netherlands

Tetrahydrofuraan	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	100 ppm
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	300 mg/m <sup>3</sup>
	Short time value (Public occupational exposure limit value)	200 ppm
	Short time value (Public occupational exposure limit value)	600 mg/m <sup>3</sup>

##### France

Tétrahydrofuranne	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	50 ppm
	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	150 mg/m <sup>3</sup>
	Short time value (VRC: Valeur réglementaire contraignante)	100 ppm
	Short time value (VRC: Valeur réglementaire contraignante)	300 mg/m <sup>3</sup>

##### Germany

Tetrahydrofuran	Time-weighted average exposure limit 8 h (TRGS 900)	50 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	150 mg/m <sup>3</sup>

##### UK

Tetrahydrofuran	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	50 ppm
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	150 mg/m <sup>3</sup>
	Short time value (Workplace exposure limit (EH40/2005))	100 ppm
	Short time value (Workplace exposure limit (EH40/2005))	300 mg/m <sup>3</sup>

##### USA (TLV-ACGIH)

Tetrahydrofuran	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	50 ppm
	Short time value (TLV - Adopted Value)	100 ppm

##### b) National biological limit values

If limit values are applicable and available these will be listed below.

##### Germany

Tetrahydrofuran (Tetrahydrofuran)	Urin: expositionsende, bzw. schichtende	2 mg/l	
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##### USA (BEI-ACGIH)

Tetrahydrofuran (Tetrahydrofuran)	Urine: end of shift	2 mg/L	
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#### 8.1.2 Sampling methods

Product name	Test	Number
Tetrahydrofuran	NIOSH	1609
Tetrahydrofuran	OSHA	7

#### 8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

#### 8.1.4 Threshold values

##### DNEL/DMEL - Workers

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## tetrahydrofuran

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	72.4 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	96 mg/m <sup>3</sup>	
	Long-term local effects inhalation	150 mg/m <sup>3</sup>	
	Acute local effects inhalation	300 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	12.6 mg/kg bw/day	

## DNEL/DMEL - General population

### tetrahydrofuran

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	13 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	52 mg/m <sup>3</sup>	
	Long-term local effects inhalation	75 mg/m <sup>3</sup>	
	Acute local effects inhalation	150 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	1.5 mg/kg bw/day	
	Long-term systemic effects oral	1.5 mg/kg bw/day	

## PNEC

### tetrahydrofuran

Compartments	Value	Remark
Fresh water	4.32 mg/l	
Fresh water (intermittent releases)	21.6 mg/l	
Marine water	0.432 mg/l	
STP	4.6 mg/l	
Fresh water sediment	23.3 mg/kg sediment dw	
Marine water sediment	2.33 mg/kg sediment dw	
Soil	2.13 mg/kg soil dw	
Oral	67 mg/kg food	

### 8.1.5 Control banding

If applicable and available it will be listed below.

## 8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 8.2.1 Appropriate engineering controls

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

### 8.2.2 Individual protection measures, such as personal protective equipment

Observe very strict hygiene - avoid contact. Do not eat, drink or smoke during work.

#### a) Respiratory protection:

Full face mask with filter type A. High vapour/gas concentration: self-contained breathing apparatus (EN 136 + EN 137).

#### b) Hand protection:

Protective gloves against chemicals (EN 374).

Materials	Measured breakthrough time	Thickness	Protection index	Remark
polyethylene	> 480 minutes	0.1 mm	Class 6	
butyl rubber	> 10 minutes	0.7 mm	Class 1	
nitrile rubber				Excellent resistance

#### c) Eye protection:

Combined eye and respiratory protection.

#### d) Skin protection:

Head/neck protection. Corrosion-proof clothing (EN 14605).

### 8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

## SECTION 9: Physical and chemical properties

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

Physical form	Liquid
Odour	Medicinal odour
Odour threshold	5 ppm - 30 ppm 14.5 mg/m <sup>3</sup> - 90 mg/m <sup>3</sup>
Colour	Colourless to light yellow
Particle size	Not applicable (liquid)
Explosion limits	1.5 - 12.4 vol %
Flammability	Highly flammable liquid and vapour.
Log Kow	Not applicable (mixture)
Dynamic viscosity	12 mPa.s ; 25 °C
Kinematic viscosity	13.187 mm <sup>2</sup> /s ; 25 °C ; Calculated
Melting point	< -90 °C
Boiling point	> 66 °C

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Relative vapour density	> 2
Vapour pressure	> 150 hPa ; 20 °C
Solubility	Water ; soluble
Relative density	0.910
Absolute density	910 kg/m <sup>3</sup>
Decomposition temperature	No data available in the literature
Auto-ignition temperature	230 °C
Flash point	< -18 °C
pH	12 ; Calculated

## 9.2. Other information

Minimum ignition energy	0.054 mJ
Evaporation rate	8 ; Butyl acetate
Explosive properties	May form explosive peroxides.
Oxidising properties	Not classified

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

May be ignited by sparks. May build up electrostatic charges: risk of ignition. Basic reaction.

### 10.2. Chemical stability

Unstable on exposure to air.

### 10.3. Possibility of hazardous reactions

Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts with (some) bases. Reacts on exposure to air: peroxidation resulting in increased fire or explosion risk. May form explosive peroxides.

### 10.4. Conditions to avoid

#### Precautionary measures

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks.

### 10.5. Incompatible materials

Oxidizing agents, (strong) bases.

### 10.6. Hazardous decomposition products

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide).

## SECTION 11: Toxicological information

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

#### 11.1.1 Test results

#### Acute toxicity

##### demo SDS mixture

No (test)data on the mixture available

Judgement is based on the relevant ingredients  
tetrahydrofuran

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		1650 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/kg bw	24 h	Rat (male / female)	Experimental value	
Inhalation	LC50	US EPA	> 14.7 mg/l air	6 h	Rat (male / female)	Experimental value	

Classification of this substance according to Annex VI is debatable as it does not correspond to the conclusion from the test

##### tetraethylenepentamine

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral			category 4			Annex VI	
Dermal			category 4			Annex VI	
Inhalation	LC50		> 9.9 mg/l air	8 h	Rat (male)	Literature study	

#### Conclusion

Not classified for acute toxicity

#### Corrosion/irritation

##### demo SDS mixture

No (test)data on the mixture available

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# demo SDS mixture

Classification is based on the relevant ingredients

## tetrahydrofuran

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage			24; 48; 72 hrs; 14 days	Rabbit	Experimental value	Single treatment without rinsing
Eye	Irritating; category 2					Annex VI	
Skin	Not irritating		72 h	24; 72 hours	Rabbit	Experimental value	
Inhalation	Irritating; STOT SE cat.3					Annex VI	

Classification of this substance according to Annex VI is debatable as it does not correspond to the conclusion from the test

## tetraethylenepentamine

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage	Other			Rabbit	Experimental value	
Skin	Corrosive	Other	4 h		Rabbit	Experimental value	

### **Conclusion**

Causes severe skin burns and eye damage.

May cause respiratory irritation.

### **Respiratory or skin sensitisation**

#### demo SDS mixture

No (test)data on the mixture available

Classification is based on the relevant ingredients

## tetrahydrofuran

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Equivalent to OECD 429			Mouse (female)	Experimental value	

## tetraethylenepentamine

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing				Guinea pig	Experimental value	

### **Conclusion**

May cause an allergic skin reaction.

Not classified as sensitizing for inhalation

### **Specific target organ toxicity**

#### demo SDS mixture

No (test)data on the mixture available

Judgement is based on the relevant ingredients

## tetrahydrofuran

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (drinking water)	NOAEL	Equivalent to OECD 407	111.3 mg/kg bw/day		No effect	4 week(s)	Rat (female)	Experimental value
Inhalation (vapours)	NOAEC	Subchronic toxicity test	1800 ppm	General	No effect	14 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

### **Conclusion**

Not classified for subchronic toxicity

### **Mutagenicity (in vitro)**

#### demo SDS mixture

No (test)data on the mixture available

Judgement is based on the relevant ingredients

## tetrahydrofuran

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster ovary (CHO)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	

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## Mutagenicity (in vivo)

### demo SDS mixture

No (test) data on the mixture available

Judgement is based on the relevant ingredients

### tetrahydrofuran

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Inhalation (vapours))	Equivalent to OECD 474	14 weeks (6h / day, 5 days / week)	Mouse (male / female)	Blood	Experimental value

### tetraethylenepentamine

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative			Mouse (male / female)		Literature study

### Conclusion

Not classified for mutagenic or genotoxic toxicity

## Carcinogenicity

### demo SDS mixture

No (test) data on the mixture available

Classification is based on the relevant ingredients

### tetrahydrofuran

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (vapours)	NOAEC	Carcinogenic toxicity study	1800 ppm	105 weeks (6h / day, 5 days / week)	Rat (male / female)	No carcinogenic effect		Experimental value

### Conclusion

Suspected of causing cancer.

## Reproductive toxicity

### demo SDS mixture

No (test) data on the mixture available

Judgement is based on the relevant ingredients

### tetrahydrofuran

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation (vapours))	NOAEL	Equivalent to OECD 414	1800 ppm	14 days (6h / day)	Rat	No effect		Experimental value
Maternal toxicity (Inhalation (vapours))	NOAEL	Equivalent to OECD 414	1800 ppm	14 days (6h / day)	Rat	No effect		Experimental value
Effects on fertility (Oral (drinking water))	NOAEL (P/F1)	OECD 416	9000 ppm	70 days (continuous) - 98 days (continuous)	Rat (male / female)	No effect		Experimental value

### Conclusion

Not classified for reprotoxic or developmental toxicity

## Toxicity other effects

### demo SDS mixture

No (test) data on the mixture available

## Chronic effects from short and long-term exposure

### demo SDS mixture

Skin rash/inflammation. Headache. Enlargement/affection of the liver. Affection of the renal tissue. Visual disturbances. Auditory disturbances.

## 11.2. Information on other hazards

No evidence of endocrine disrupting properties

## SECTION 12: Ecological information

### 12.1. Toxicity

#### demo SDS mixture

No (test) data on the mixture available

Classification is based on the relevant ingredients



# demo SDS mixture

## tetrahydrofuran

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	Equivalent to OECD 203	2160 mg/l	96 h	Pimephales promelas	Flow-through system	Fresh water	Experimental value; Lethal
Acute toxicity crustacea	LC50	Equivalent to OECD 202	3485 ppm	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Nominal concentration
Toxicity algae and other aquatic plants	Toxicity threshold		3700 mg/l	8 day(s)	Scenedesmus quadricauda	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity fish	NOEC		216 mg/l	33 day(s)	Pimephales promelas	Flow-through system	Fresh water	Experimental value
Long-term toxicity aquatic crustacea								Data waiving
Toxicity aquatic micro-organisms	IC50	Equivalent to OECD 209	460 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value; Respiration
	ECO		580 mg/l	168 h	Pseudomonas putida			Literature study

## tetraethylenepentamine

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	EU Method C.1	420 mg/l	96 h	Poecilia reticulata	Semi-static system	Fresh water	Experimental value; GLP
Acute toxicity crustacea	EC50	EU Method C.2	24.1 mg/l	48 h	Daphnia magna	Static system		Experimental value; GLP
Toxicity algae and other aquatic plants	NOEC	OECD 201	0.5 mg/l	72 h	Selenastrum capricornutum			Experimental value; Growth rate
	ErC50	OECD 201	6.8 mg/l	72 h	Selenastrum capricornutum			Experimental value
Toxicity aquatic micro-organisms	EC50	OECD 209	1600 mg/l	1 h	Activated sludge			Experimental value; GLP
	EC10		186 mg/l	17 h	Pseudomonas putida			Experimental value; GLP

## Conclusion

Harmful to aquatic life with long lasting effects.

## 12.2. Persistence and degradability

### tetrahydrofuran

#### Biodegradation water

Method	Value	Duration	Value determination
Equivalent to OECD 301D	39 %; Oxygen consumption	28 day(s)	Experimental value

#### Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
	5.7 day(s)		Literature study

### tetraethylenepentamine

#### Biodegradation water

Method	Value	Duration	Value determination
OECD 301A	< 10 %; GLP	28 day(s)	Experimental value

#### Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	24.334 minutes	1.5E6 /cm <sup>3</sup>	Calculated value

## Conclusion

### Water

Contains non readily biodegradable component(s)

## 12.3. Bioaccumulative potential

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#### Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

### tetrahydrofuran

#### Log Kow

Method	Remark	Value	Temperature	Value determination
Equivalent to OECD 107		0.45	25 °C	Experimental value

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## tetraethylenepentamine

### BCF other aquatic organisms

Parameter	Method	Value	Duration	Species	Value determination
BCF	BCFBAF v3.01	3.162 l/kg; Fresh weight			Estimated value

### Log Kow

Method	Remark	Value	Temperature	Value determination
KOWWIN		-3.16		Estimated value

### Conclusion

Does not contain bioaccumulative component(s)

## 12.4. Mobility in soil

### tetrahydrofuran

#### (log) Koc

Parameter	Method	Value	Value determination
log Koc		1.26 - 1.37	Experimental value

### tetraethylenepentamine

#### (log) Koc

Parameter	Method	Value	Value determination
log Koc		3.04	Calculated value

### Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Fugacity Model Level III	7.45E-16 %		0.155 %	81.8 %	18 %	Calculated value

### Conclusion

Contains component(s) with potential for mobility in the soil

Contains component(s) that adsorb(s) into the soil

## 12.5. Results of PBT and vPvB assessment

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

## 12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

## 12.7. Other adverse effects

### demo SDS mixture

#### Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

#### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

#### Groundwater

Groundwater pollutant

### tetrahydrofuran

#### Groundwater

Groundwater pollutant

## SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 13.1. Waste treatment methods

#### 13.1.1 Provisions relating to waste

##### European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997. The waste code must be assigned by the user, preferably in consultation with the (environmental) authorities concerned.

#### 13.1.2 Disposal methods

Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment. Dispose of at authorized waste collection point.

#### 13.1.3 Packaging/Container

##### European Union

Waste material code packaging (Directive 2008/98/EC).

15 01 10\* (packaging containing residues of or contaminated by dangerous substances).

## SECTION 14: Transport information

### Road (ADR)

Reason for revision: 2020-878

Publication date: 2010-06-08

Date of revision: 2021-01-18

Reference number: DEMO

Revision number: 0500

Product number: 45177

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# demo SDS mixture

14.1. UN number	
UN number	2924
14.2. UN proper shipping name	
Proper shipping name	flammable liquid, corrosive, n.o.s. (tetrahydrofuran; tetraethylenepentamine)
14.3. Transport hazard class(es)	
Hazard identification number	338
Class	3
Classification code	FC
14.4. Packing group	
Packing group	II
Labels	3+8
14.5. Environmental hazards	
Environmentally hazardous substance mark	no
14.6. Special precautions for user	
Special provisions	274
Limited quantities	Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

## Rail (RID)

14.1. UN number	
UN number	2924
14.2. UN proper shipping name	
Proper shipping name	flammable liquid, corrosive, n.o.s. (tetrahydrofuran; tetraethylenepentamine)
14.3. Transport hazard class(es)	
Hazard identification number	338
Class	3
Classification code	FC
14.4. Packing group	
Packing group	II
Labels	3+8
14.5. Environmental hazards	
Environmentally hazardous substance mark	no
14.6. Special precautions for user	
Special provisions	274
Limited quantities	Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

## Inland waterways (ADN)

14.1. UN number	
UN number	2924
14.2. UN proper shipping name	
Proper shipping name	flammable liquid, corrosive, n.o.s. (tetrahydrofuran; tetraethylenepentamine)
14.3. Transport hazard class(es)	
Class	3
Classification code	FC
14.4. Packing group	
Packing group	II
Labels	3+8
14.5. Environmental hazards	
Environmentally hazardous substance mark	no
14.6. Special precautions for user	
Special provisions	274
Limited quantities	Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

## Sea (IMDG/IMSBC)

14.1. UN number	
UN number	2924
14.2. UN proper shipping name	
Proper shipping name	flammable liquid, corrosive, n.o.s. (tetrahydrofuran; tetraethylenepentamine)
14.3. Transport hazard class(es)	
Class	3
14.4. Packing group	
Packing group	II
Labels	3+8
14.5. Environmental hazards	
Marine pollutant	-
Environmentally hazardous substance mark	no

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Reference number: DEMO

Product number: 45177

Revision number: 0500

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# demo SDS mixture

## 14.6. Special precautions for user

Special provisions	274
Limited quantities	Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

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

Annex II of MARPOL 73/78	Not applicable, based on available data
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## Air (ICAO-TI/IATA-DGR)

### 14.1. UN number

UN number	2924
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### 14.2. UN proper shipping name

Proper shipping name	flammable liquid, corrosive, n.o.s. (tetrahydrofuran; tetraethylenepentamine)
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### 14.3. Transport hazard class(es)

Class	3
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### 14.4. Packing group

Packing group	II
Labels	3+8

### 14.5. Environmental hazards

Environmentally hazardous substance mark	no
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## 14.6. Special precautions for user

Special provisions	A3
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### Passenger and cargo transport

Limited quantities: maximum net quantity per packaging	0.5 L
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## SECTION 15: Regulatory information

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

#### European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
> 80 %	

#### tetrahydrofuran

Product name	Skin resorption
Tetrahydrofuran	Skin

#### REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· tetrahydrofuran · tetraethylenepentamine	Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	<ol style="list-style-type: none"> <li>Shall not be used in:                             <ul style="list-style-type: none"> <li>— ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,</li> <li>— tricks and jokes,</li> <li>— games for one or more participants, or any article intended to be used as such, even with ornamental aspects,</li> </ul> </li> <li>Articles not complying with paragraph 1 shall not be placed on the market.</li> <li>Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:                             <ul style="list-style-type: none"> <li>— can be used as fuel in decorative oil lamps for supply to the general public, and,</li> <li>— present an aspiration hazard and are labelled with H304,</li> </ul> </li> <li>Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).</li> <li>Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:                             <ol style="list-style-type: none"> <li>lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage";</li> <li>grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: "Just a sip of grill lighter may lead to life threatening lung damage";</li> <li>lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.</li> </ol> </li> <li>No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled H304, intended for supply to the general public.</li> <li>Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled H304 to the</li> </ol>

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		competent authority in the Member State concerned. Member States shall make those data available to the Commission.'
tetrahydrofuran	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 that Regulation or not.	<p>1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:</p> <ul style="list-style-type: none"> <li>— metallic glitter intended mainly for decoration,</li> <li>— artificial snow and frost,</li> <li>— “whoopee” cushions,</li> <li>— silly string aerosols,</li> <li>— imitation excrement,</li> <li>— horns for parties,</li> <li>— decorative flakes and foams,</li> <li>— artificial cobwebs,</li> <li>— stink bombs.</li> </ul> <p>2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: “For professional users only”.</p> <p>3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC.</p> <p>4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.</p>

## National legislation Belgium

### demo SDS mixture

No data available

### tetrahydrofuran

Résorption peau	Tétrahydrofurane; D; La mention “D” signifie que la résorption de l’agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l’exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l’agent dans l’air.
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## National legislation The Netherlands

### demo SDS mixture

Waterbezwaarlijkheid	A (3); Algemene Beoordelingsmethodiek (ABM)
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### tetrahydrofuran

Huidopname (wettelijk)	Tetrahydrofuraan; H
SZW - Lijst van kankerverwekkende stoffen	Als kankerverwekkende stof ingedeeld in categorie 1A of 1B als bedoeld in bijlage I van de Verordening (EG) nr. 1272/2008 van het Europees parlement en de Raad van 16 december 2008; Listed in SZW-list of carcinogenic substances

## National legislation France

### demo SDS mixture

No data available

### tetrahydrofuran

Risque de pénétration percutanée	Tétrahydrofuranne; PP
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## National legislation Germany

### demo SDS mixture

WGK	2; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017
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### tetrahydrofuran

TA-Luft	5.2.5/I
TRGS900 - Risiko der Fruchtschädigung	Tetrahydrofuran; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden
Hautresorptive Stoffe	Tetrahydrofuran; H; Hautresorptiv

### tetraethylenepentamine

TA-Luft	5.2.5/I
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## National legislation United Kingdom

### demo SDS mixture

No data available

### tetrahydrofuran

Skin absorption	Tetrahydrofuran; Sk
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## Other relevant data

### demo SDS mixture

No data available

### tetrahydrofuran

TLV - Carcinogen	Tetrahydrofuran; A3
IARC - classification	2B; Tetrahydrofuran
TLV - Skin absorption	Tetrahydrofuran; Skin; Danger of cutaneous absorption

## 15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

### tetrahydrofuran

A chemical safety assessment has been performed.

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# demo SDS mixture

## SECTION 16: Other information

### Full text of any H- and EUH-statements referred to under heading 3:

H225 Highly flammable liquid and vapour.  
H302 Harmful if swallowed.  
H312 Harmful in contact with skin.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H351 Suspected of causing cancer.  
H411 Toxic to aquatic life with long lasting effects.  
H412 Harmful to aquatic life with long lasting effects.  
EUH019 May form explosive peroxides.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
ATE	Acute Toxicity Estimate
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC50	Effect Concentration 50 %
ERC50	EC50 in terms of reduction of growth rate
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative & Toxic
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	very Persistent & very Bioaccumulative

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.