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

### 1.1. Product identifier

Product form : Substance  
 Trade name/designation : Toluene  
 Chemical name : Toluene  
 EC No : 203-625-9  
 CAS No. : 108-88-3  
 REACH registration No : 01-2119471310-51-0049  
 Synonymes : methylbenzene; toluol; phenylmethane  
 Product group : Trade product

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

#### 1.2.1. Relevant identified uses

Main use category : Industrial uses, Professional use, Consumer use  
 Use of the substance/mixture : Solvent  
 Further information: see exposure scenarios attached to this safety data sheet

#### 1.2.2. Uses advised against

No data available

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

#### Supplier

NIS a.d. Novi Sad  
 Narodnog Fronta 12  
 21000 Novi Sad - Serbia  
 T + 381 (0) 21 481 1111  
[Dragana.Cvetkov@nis.eu](mailto:Dragana.Cvetkov@nis.eu) (Responsible person SDS/REACH)

#### Only Representative

REACH Law Ltd.  
 Vänrikinkuja 3 JK 21  
 02600 Espoo - Finland  
 T +358(0) 9 412 3055 - F +358 (0) 9 412 3049  
[sds@reachlaw.fi](mailto:sds@reachlaw.fi)

#### Manufacturer

NIS a.d. Novi Sad  
 Narodnog Fronta 12  
 21000 Novi Sad - Serbia  
 T + 381 (0) 21 481 1111  
[Dragana.Cvetkov@nis.eu](mailto:Dragana.Cvetkov@nis.eu) (Responsible person SDS/REACH)

### 1.4. Emergency telephone number

Emergency number : + 381 (0) 21 481 1111 (08-16h) + 381 (0)11 360 8440 (24 h) + 381 (0)11 266 1122 (24 h) + 381 (0)11 266 2755 (24 h)


Country	Official advisory body	Address	Emergency number
Ireland	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	+353 1 809 21 66 (public, 8am - 10pm, 7/7) +353 01 809 2566 (Professionals, 24/7)
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours, healthcare professionals only)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Flam. Liq. 2 H225

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Skin Irrit. 2 H315  
 Repr. 2 H361d  
 STOT SE 3 H336  
 STOT RE 2 H373  
 Asp. Tox. 1 H304

Full text of hazard classes and H-statements : see section 16

## 2.2. Label elements

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

Hazard pictograms :



Signal word :

Danger

Hazard statements :

H225 - Highly flammable liquid and vapour.  
 H304 - May be fatal if swallowed and enters airways.  
 H315 - Causes skin irritation.  
 H336 - May cause drowsiness or dizziness.  
 H361d - Suspected of damaging the unborn child.  
 H373 - May cause damage to organs through prolonged or repeated exposure.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P260 - Do not breathe dust/fume/gas/mist/vapours/spray.  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
 P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor/.  
 P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P331 - Do NOT induce vomiting.

## 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

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Substance name : Toluene  
 CAS No. : 108-88-3  
 EC No : 203-625-9

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Toluene	(CAS No.) 108-88-3 (EC No) 203-625-9 (EC Index) 601-021-00-3	99,9 - 100	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304

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Full text of H-statements: see section 16

### **3.2. Mixture**

Not applicable

## **SECTION 4: First aid measures**

### **4.1. Description of first aid measures**

- 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. In case of doubt or persistent symptoms, consult always a physician.
- Inhalation : Keep at rest. Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.
- Skin contact : Wash with plenty of water/. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. If symptoms persist, call a physician.
- Eyes contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical advice/attention.
- In case of ingestion : Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person or a person with cramps. Call a physician immediately.

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

- Inhalation : Harmful: danger of serious damage to health by prolonged exposure through inhalation. Vapours may cause drowsiness and dizziness. Cough,. The following symptoms may occur: . sore throat,. Unconsciousness . Headache,. Nausea,.
- Skin contact : Irritating to skin. The following symptoms may occur: Repeated exposure may cause skin dryness or cracking. erythema (redness),.
- Eyes contact : Contact with eyes may cause irritation. The following symptoms may occur: erythema (redness),. Pain.
- Ingestion : Harmful: may cause lung damage if swallowed.
- Chronic symptoms : Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure (Inhalation).

### **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 : Water spray, Alcohol resistant foam, Carbon dioxide, Dry extinguishing powder.
- Unsuitable extinguishing media : Strong water jet.

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

- Specific hazards : Highly flammable liquid and vapour. Vapours are heavier than air and may spread along floors. Vapours can form explosive mixtures with air. Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. Container may explode if heated. Hazardous decomposition products Carbon oxides. Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

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

- Firefighting instructions : Special protective equipment for firefighters. . In case of fire: Wear self-contained breathing apparatus. Use water spray or fog for cooling exposed containers. Evacuate personnel to a safe area.

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## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

For non-emergency personnel : Evacuate personnel to a safe area. Provide adequate ventilation. Use personal protective equipment as required. Reference to other sections: 8 . Avoid contact with skin, eyes and clothing. Do not breathe vapour/aerosol. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc. Ensure equipment is adequately earthed.

#### 6.1.2. For emergency responders

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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

Methods for cleaning up : Stop leak if safe to do so. Dam up. Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite or powdered limestone. Collect in closed and suitable containers for disposal. Dispose of contaminated materials in accordance with current regulations.

### 6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Disposal: see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Prevent unauthorised persons entering the zone. Provide adequate information, instruction and training for operators. Provide adequate ventilation. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Avoid contact with skin, eyes and clothing. Do not breathe vapour/aerosol. Take precautionary measures against static discharge. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc. Ensure equipment is adequately earthed. Take any precaution to avoid mixing with incompatible materials. See also section 10. Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time). After use replace the closing cap immediately. Do not allow to enter into surface water or drains.

Hygiene measures : Keep good industrial hygiene. When using do not eat, drink or smoke. Wash hands and face before breaks and immediately after handling of the product. Keep away from food, drink and animal feedingstuffs. Keep work clothes separately. Take off contaminated clothing.

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

Technical measures : Storage of flammable liquids. Keep container tightly closed in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not store near or with any of the incompatible materials listed in section 10.


Packaging materials : Keep/Store only in original container.

### 7.3. Specific end use(s)


see attached exposure scenario.

## SECTION 8: Exposure controls/personal protection


### 8.1. Control parameters

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Toluene (108-88-3)		
EU	IOELV TWA (mg/m <sup>3</sup> )	192 mg/m <sup>3</sup>
EU	IOELV TWA (ppm)	50 ppm
EU	IOELV STEL (mg/m <sup>3</sup> )	384 mg/m <sup>3</sup>
EU	IOELV STEL (ppm)	100 ppm
Austria	MAK (mg/m <sup>3</sup> )	190 mg/m <sup>3</sup>
Austria	MAK (ppm)	50 ppm
Austria	MAK Short time value (mg/m <sup>3</sup> )	380 mg/m <sup>3</sup>
Austria	MAK Short time value (ppm)	100 ppm
Belgium	Limit value (mg/m <sup>3</sup> )	77 mg/m <sup>3</sup>
Belgium	Limit value (ppm)	20 ppm
Belgium	Short time value (mg/m <sup>3</sup> )	384 mg/m <sup>3</sup>
Belgium	Short time value	100 ppm
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	192,0 mg/m <sup>3</sup>
Bulgaria	OEL TWA (ppm)	50 ppm
Bulgaria	OEL STEL (mg/m <sup>3</sup> )	384,0 mg/m <sup>3</sup>
Bulgaria	OEL STEL (ppm)	100 ppm
Croatia	GVI (granična vrijednost izloženosti) (mg/m <sup>3</sup> )	192 mg/m <sup>3</sup>
Croatia	GVI (granična vrijednost izloženosti) (ppm)	50 ppm
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m <sup>3</sup> )	384 mg/m <sup>3</sup>
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	100 ppm
Cyprus	OEL TWA (mg/m <sup>3</sup> )	192 mg/m <sup>3</sup>
Cyprus	OEL TWA (ppm)	50 ppm
Cyprus	OEL STEL (mg/m <sup>3</sup> )	384 mg/m <sup>3</sup>
Cyprus	OEL STEL (ppm)	100 ppm
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	200 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	94 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (ppm)	25 ppm
Estonia	OEL TWA (mg/m <sup>3</sup> )	192 mg/m <sup>3</sup>
Estonia	OEL TWA (ppm)	50 ppm
Estonia	OEL STEL (mg/m <sup>3</sup> )	384 mg/m <sup>3</sup>
Estonia	OEL STEL (ppm)	100 ppm
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	81 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (ppm)	25 ppm
Finland	HTP-arvo (15 min)	380 mg/m <sup>3</sup>
Finland	HTP-arvo (15 min) (ppm)	100 ppm
France	VME (mg/m <sup>3</sup> )	76,8 mg/m <sup>3</sup> (restrictive limit)
France	VME (ppm)	20 ppm (restrictive limit)
France	VLE (mg/m <sup>3</sup> )	384 mg/m <sup>3</sup> (restrictive limit)
France	VLE (ppm)	100 ppm (restrictive limit)
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	190 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)


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<b>Toluene (108-88-3)</b>		
Germany	TRGS 903 (BGW)	600 µg/l (Medium: whole blood - Time: end of shift - Parameter: Toluene) 1,5 mg/l (Medium: urine - Time: end of several shifts - Parameter: o-Cresol (after hydrolysis))
Gibraltar	OEL TWA (mg/m³)	192 mg/m³
Gibraltar	OEL TWA (ppm)	50 ppm
Gibraltar	OEL STEL (mg/m³)	384 mg/m³
Gibraltar	OEL STEL (ppm)	100 ppm
Greece	OEL TWA (mg/m³)	192 mg/m³
Greece	OEL TWA (ppm)	50 ppm
Greece	OEL STEL (mg/m³)	384 mg/m³
Greece	OEL STEL (ppm)	100 ppm
Hungary	AK-érték	190 mg/m³
Hungary	CK-érték	380 mg/m³
Ireland	OEL (8 hours ref) (mg/m³)	192 mg/m³
Ireland	OEL (8 hours ref) (ppm)	50 ppm
Ireland	OEL (15 min ref) (mg/m³)	384 mg/m³
Ireland	OEL (15 min ref) (ppm)	100 ppm
Italy	OEL TWA (mg/m³)	192 mg/m³
Italy	OEL TWA (ppm)	50 ppm
Latvia	OEL TWA (mg/m³)	50 mg/m³
Latvia	OEL TWA (ppm)	14 ppm
Lithuania	IPRV (mg/m³)	192 mg/m³
Lithuania	IPRV (ppm)	50 ppm
Lithuania	TPRV (mg/m³)	384 mg/m³
Lithuania	TPRV (ppm)	100 ppm
Luxembourg	OEL TWA (mg/m³)	192 mg/m³
Luxembourg	OEL TWA (ppm)	50 ppm
Luxembourg	OEL STEL (mg/m³)	384 mg/m³
Luxembourg	OEL STEL (ppm)	100 ppm
Malta	OEL TWA (mg/m³)	192 mg/m³
Malta	OEL TWA (ppm)	50 ppm
Malta	OEL STEL (mg/m³)	384 mg/m³
Malta	OEL STEL (ppm)	100 ppm
Netherlands	Grenswaarde TGG 8H (mg/m³)	150 mg/m³
Netherlands	Grenswaarde TGG 15MIN (mg/m³)	384 mg/m³
Poland	NDS (mg/m³)	100 mg/m³
Poland	NDSch (mg/m³)	200 mg/m³
Portugal	OEL TWA (mg/m³)	192 mg/m³ (indicative limit value)
Portugal	OEL TWA (ppm)	50 ppm (indicative limit value)
Portugal	OEL STEL (mg/m³)	384 mg/m³ (indicative limit value)
Portugal	OEL STEL (ppm)	100 ppm (indicative limit value)
Romania	OEL TWA (mg/m³)	192 mg/m³
Romania	OEL TWA (ppm)	50 ppm
Romania	OEL STEL (mg/m³)	384 mg/m³

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<b>Toluene (108-88-3)</b>		
Romania	OEL STEL (ppm)	100 ppm
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	192 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (ppm)	50 ppm
Slovakia	NPHV (Hraničná) (mg/m <sup>3</sup> )	384 mg/m <sup>3</sup>
Slovenia	OEL TWA (mg/m <sup>3</sup> )	192 mg/m <sup>3</sup>
Slovenia	OEL TWA (ppm)	50 ppm
Slovenia	OEL STEL (mg/m <sup>3</sup> )	384 mg/m <sup>3</sup>
Slovenia	OEL STEL (ppm)	100 ppm
Spain	VLA-ED (mg/m <sup>3</sup> )	192 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> )	384 mg/m <sup>3</sup>
Spain	VLA-EC (ppm)	100 ppm
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	192 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (ppm)	50 ppm
Sweden	kortidsvärde (KTV) (mg/m <sup>3</sup> )	384 mg/m <sup>3</sup>
Sweden	kortidsvärde (KTV) (ppm)	100 ppm
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	191 mg/m <sup>3</sup>
United Kingdom	WEL TWA (ppm)	50 ppm
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	384 mg/m <sup>3</sup>
United Kingdom	WEL STEL (ppm)	100 ppm
Norway	Grenseverdier (AN) (mg/m <sup>3</sup> )	94 mg/m <sup>3</sup>
Norway	Grenseverdier (AN) (ppm)	25 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m <sup>3</sup> )	94 mg/m <sup>3</sup>
Norway	Grenseverdier (Korttidsverdi) (ppm)	25 ppm
Switzerland	VME (mg/m <sup>3</sup> )	190 mg/m <sup>3</sup>
Switzerland	VME (ppm)	50 ppm
Switzerland	VLE (mg/m <sup>3</sup> )	760 mg/m <sup>3</sup>
Switzerland	VLE (ppm)	200 ppm
Australia	TWA (mg/m <sup>3</sup> )	191 mg/m <sup>3</sup>
Australia	TWA (ppm)	50 ppm
Australia	STEL (mg/m <sup>3</sup> )	574 mg/m <sup>3</sup>
Australia	STEL (ppm)	150 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	188 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	50 ppm
USA - ACGIH	ACGIH TWA (ppm)	20 ppm
USA - IDLH	US IDLH (ppm)	500 ppm
USA - NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	375 mg/m <sup>3</sup>
USA - NIOSH	NIOSH REL (TWA) (ppm)	100 ppm
USA - NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	560 mg/m <sup>3</sup>
USA - NIOSH	NIOSH REL (STEL) (ppm)	150 ppm
USA - OSHA	OSHA PEL (TWA) (ppm)	200 ppm
USA - OSHA	OSHA PEL (Ceiling) (ppm)	300 ppm



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<b>Toluene (108-88-3)</b>	
DNEL/DMEL (workers)	
Acute - systemic effects, inhalation	384 mg/m <sup>3</sup>
Acute - local effects, inhalation	384 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	384 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	192 mg/m <sup>3</sup>
Long-term - local effects, inhalation	192 mg/m <sup>3</sup>
DNEL/DMEL (general population)	
Acute - systemic effects, inhalation	226 mg/kg bodyweight/day
Acute - local effects, inhalation	226 mg/m <sup>3</sup>
Long-term - systemic effects, oral	8,13 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	56,5 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	226 mg/kg bodyweight/day
PNEC (water)	
PNEC aqua (freshwater)	0,68 mg/l
PNEC aqua (marine water)	0,68
PNEC aqua (intermittent, freshwater)	0,68 mg/l
PNEC aqua (intermittent, marine water)	0,68 mg/l
PNEC (sediment)	
PNEC sediment (freshwater)	16,39 mg/kg dwt
PNEC sediment (marine water)	16,39 mg/kg dwt

Additional information : Recommended monitoring procedures :. Personal monitoring. Concentration measurement in air

## **8.2. Exposure controls**


Engineering control measures	: Closed system. Use with local exhaust ventilation. Take precautionary measures against static discharges. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Organisational measures to prevent /limit releases, dispersion and exposure. See also section 7.
Personal protection equipment	: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hand protection	: PVA (Polyvinyl alcohol) (EN 374). Breakthrough time (maximum wearing time) :>360min. 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
Eye protection	: Safety glasses (EN 166)
Body protection	: Wear chemical resistant apron
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Full face mask (EN 136) (EN 136). Half-face mask (DIN EN 140) (EN 140). Filter type: A (EN 141). Use self-contained respiratory apparatus for rescue and maintenance work in storage vessels
Thermal hazard protection	: Not required for normal conditions of use.
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**

Physical state : liquid



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Colour	: clear.
Odour	: characteristic.
Odour threshold	: No data available
pH	: Not applicable
Relative evaporation rate (butylacetate=1)	: No data available
Melting point/freezing point	: -95 °C
Freezing point	: No data available
Initial boiling point and boiling range	: 110,6 °C
Flash point	: 5 °C Closed cup
Auto-ignition temperature	: 480 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable, liquid
Vapour pressure	: 36 mmHg (20°C)
Vapour density	: 3,4 (Air=1)
Relative density	: 0,846 - 0,873 g/cm <sup>3</sup> (15°C)
Solubility	: Water: 573-587 mg/l (20°C)
Partition coefficient n-octanol/water	: 2,73
Kinematic viscosity	: No data available
Dynamic viscosity	: 0,56 mPa.s (25°C)
Explosive properties	: Not applicable. The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising 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.
Explosive limits	: 1,2 vol % 7 vol %

## **9.2. Other information**

VOC content	: 100 %
Additional information	: Literary reference : CRC Handbook of Chemistry

## **SECTION 10: Stability and reactivity**

### **10.1. Reactivity**

Highly flammable liquid and vapour. Reference to other sections: 10.5.

### **10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

### **10.3. Possibility of hazardous reactions**

Vapours can form explosive mixtures with air.

### **10.4. Conditions to avoid**

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. See also section 7. Handling and storage.

### **10.5. Incompatible materials**

Oxidising substances. Strong acids. See also section 7. Handling and storage.


### **10.6. Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. Reference to other sections: 5.2.

## **SECTION 11: Toxicological information**

### **11.1. Information on toxicological effects**

Acute toxicity	: Not classified (Based on available data, the classification criteria are not met)
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Toluene (108-88-3)	
LD50/oral/rat	> 5000 mg/kg
LD50/dermal/rabbit	> 5000 mg/kg
LC50/inhalation/4h/rat	> 20 mg/l

Skin corrosion/irritation	: Causes skin irritation. Test Method EU B.4 pH: Not applicable
Serious eye damage/eye irritation	: Not classified (Based on available data, the classification criteria are not met) pH: Not applicable
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	: Not classified (Based on available data, the classification criteria are not met) NOAEC, Inhalation, Rat: 4522 mg/m <sup>3</sup>
Reproductive toxicity	: Suspected of damaging the unborn child. NOAEC, Inhalation, Rat: 2261 mg/m <sup>3</sup>
STOT-single exposure	: May cause drowsiness or dizziness.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure. Inhalation of high vapour concentrations can cause CNS-depression and narcosis OECD Test Guideline 453 Test Method EU B.29
Aspiration hazard	: May be fatal if swallowed and enters airways.
Other information	: Symptoms related to the physical, chemical and toxicological characteristics : Reference to other sections: 4.2.

## SECTION 12: Ecological information

### 12.1. Toxicity

Environmental properties	: Ecological injuries are not known or expected under normal use.
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Toluene (108-88-3)	
LC50 fish 1	5,5 mg/l (96h)
LC50 other aquatic organisms 1	3,78 mg/l after 2 days
ErC50 (algae)	134 mg/l
NOEC chronic fish	1,4 mg/l
NOEC chronic algae	10 mg/l
NOEC (additional information)	NOEC Invertebrates 7 days 0.74 mg/l

### 12.2. Persistence and degradability


Toluene (108-88-3)	
Persistence and degradability	Readily biodegradable.

### 12.3. Bioaccumulative potential

Toluene (108-88-3)	
Partition coefficient n-octanol/water	2,73

### 12.4. Mobility in soil

Toluene (108-88-3)	
Ecology - soil	No data available.

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#### 12.5. Results of PBT and vPvB assessment

<b>Toluene (108-88-3)</b>
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. Other adverse effects

No data available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste disposal recommendations	: Handle with care. Safe handling: see section 7. Handling and storage. Collect and dispose of waste product at an authorised disposal facility. Refer to manufacturer/supplier for information on recovery/recycling. Dispose of contaminated materials in accordance with current regulations.
Additional information	: Never use pressure to empty container. Do not burn, or use a cutting torch on, the empty drum. Empty pressure vessels should be returned to the supplier. Refer to manufacturer/supplier for information on recovery/recycling. Dispose of contaminated materials in accordance with current regulations.
List of proposed waste codes/waste designations in accordance with EWC (2001/573/EC, 75/442/EEC, 91/689/EEC)	: Classified as hazardous waste according to European Union regulations Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities The following Waste Codes are only suggestions: 20 01 13*

### SECTION 14: Transport information

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

#### 14.1. UN number

UN number	: 1294
UN-No	: 1294
UN-No	: 1294
UN-No. (ADN)	: 1294
UN-No. (RID)	: 1294


#### 14.2. UN proper shipping name

Proper Shipping Name	: TOLUENE
Proper Shipping Name (IMDG)	: TOLUENE
Proper Shipping Name (IATA)	: Toluene
Proper Shipping Name (ADN)	: TOLUENE
Proper Shipping Name (RID)	: TOLUENE
Transport document description (ADR)	: UN 1294 TOLUENE, 3, II, (D/E)
Transport document description (IMDG)	: UN 1294 TOLUENE, 3, II
Transport document description (IATA)	: UN 1294 Toluene, 3, II
Transport document description (ADN)	: UN 1294 TOLUENE, 3, II
Transport document description (RID)	: UN 1294 TOLUENE, 3, II

#### 14.3. Transport hazard class(es)

##### ADR

Transport hazard class(es) (ADR)	: 3
Danger labels (ADR)	: 3

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#### IMDG

Transport hazard class(es) (IMDG) : 3  
 Danger labels (IMDG) : 3



#### IATA

Transport hazard class(es) (IATA) : 3  
 Hazard labels (IATA) : 3



#### ADN

Transport hazard class(es) (ADN) : 3  
 Danger labels (ADN) : 3



#### RID

Transport hazard class(es) (RID) : 3  
 Danger labels (RID) : 3




#### 14.4. Packing group

Packing group (ADR) : II  
 Packing group (IMDG) : II  
 Packing group (IATA) : II  
 Packing group (ADN) : II  
 Packing group (RID) : II

#### 14.5. Environmental hazards

Dangerous for the environment : No

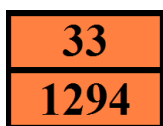
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Marine pollutant : No  
Other information : ADN : N3

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

##### **- Overland transport**

Classification code (ADR) : F1  
Limited quantities (ADR) : 1I  
Excepted quantities (ADR) : E2  
Packing instructions (ADR) : P001, IBC02, R001  
Mixed packing provisions (ADR) : MP19  
Portable tank and bulk container instructions (ADR) : T4  
Portable tank and bulk container special provisions (ADR) : TP1  
Tank code (ADR) : LGBF  
Vehicle for tank carriage : FL  
Transport category (ADR) : 2  
Special provisions for carriage - Operation (ADR) : S2, S20  
Hazard identification number (Kemler No.) : 33  
Orange plates :




tunnel restriction code : D/E  
EAC code : 3YE

##### **- Transport by sea**

Limited quantities (IMDG) : 1 L  
Excepted quantities (IMDG) : E2  
Packing instructions (IMDG) : P001  
IBC packing instructions (IMDG) : IBC02  
Tank instructions (IMDG) : T4  
Tank special provisions (IMDG) : TP1  
EmS-No. (Fire) : F-E  
EmS-No. (Spillage) : S-D  
Stowage category (IMDG) : B  
Flash point (IMDG) : 7 °C c.c.  
Properties and observations (IMDG) : Colourless liquid with a benzene-like odour. Flashpoint: 7°C c.c. Explosive limits: 1.27% to 7% Immiscible with water.

##### **- Air transport**

PCA Excepted quantities (IATA) : E2  
PCA Limited quantities (IATA) : Y341  
PCA limited quantity max net quantity (IATA) : 1L  
PCA packing instructions (IATA) : 353  
PCA max net quantity (IATA) : 5L  
CAO packing instructions (IATA) : 364  
CAO max net quantity (IATA) : 60L

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ERG code (IATA) : 3L

#### - Inland waterway transport

Classification code (ADN) : F1  
 Limited quantities (ADN) : 1 L  
 Excepted quantities (ADN) : E2  
 Carriage permitted (ADN) : T  
 Equipment required (ADN) : PP, EX, A  
 Ventilation (ADN) : VE01  
 Number of blue cones/lights (ADN) : 1

#### - Rail transport

Classification code (RID) : F1  
 Limited quantities (RID) : 1L  
 Excepted quantities (RID) : E2  
 Packing instructions (RID) : P001, IBC02, R001  
 Mixed packing provisions (RID) : MP19  
 Portable tank and bulk container instructions (RID) : T4  
 Portable tank and bulk container special provisions (RID) : TP1  
 Tank codes for RID tanks (RID) : LGBF  
 Transport category (RID) : 2  
 Colis express (express parcels) (RID) : CE7  
 Hazard identification number (RID) : 33

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

Code: IBC : Pollution category : Y. Product name : TOLUENE. Ship type : 3.

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

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

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


The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

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	Toluene - Toluene
3.a. 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: 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	Toluene - Toluene
3.b. 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: 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	Toluene - Toluene
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.	Toluene - Toluene
48. Toluene	Toluene - Toluene

Toluene is not on the REACH Candidate List

Toluene is not on the REACH Annex XIV List

VOC content : 100 %

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### 15.1.2. National regulations

#### Germany

VwVwS Annex reference : Water hazard class (WGK) 2, hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 194)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

#### Netherlands

Waterbezwaarlijkheid : 1 - Black list substance

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : Toluene is listed

#### Denmark

Class for fire hazard : Class I-1

Store unit : 1 liter

Classification remarks : F <Flam. Liq. 2>; Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product  
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

### 15.2. Chemical safety assessment


For this substance a chemical safety assessment has been carried out

## SECTION 16: Other information

Abbreviations and acronyms:

	DNEL = Derived No Effect Level
	DMEL = Derived Minimal Effect level
	PNEC = Predicted No Effect Concentration
	OEL-STEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
	TWA = time weighted average
	LC50 = Median lethal concentration
	LD50 = Median lethal dose
	LL50 = Median lethal level
	EC50 = Median Effective Concentration
	EL50 = Median effective level



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	ErC50 = EC50 in terms of reduction of growth rate
	ErL50 = EL50 in terms of reduction of growth rate
	NOEL = no-observed-effect level
	NOEC = No observed effect concentration
	NOELR = No observed effect loading rate
	NOAEC = No observed adverse effect concentration
	NOAEL = No observed adverse effect level
	EWC = European waste catalogue
	NA = Not applicable
	N.O.S. = Not Otherwise Specified
	VOC = Volatile organic compounds
	mg/kg BW = mg/kg bodyweight
	QSAR = Quantitative structure-activity relationship (QSAR)
	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
	WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)
	ABM = Algemene beoordelingsmethodiek

Sources of key data used to compile the datasheet : European Chemicals Bureau, CSR.

Full text of H- and EUH-statements:

Asp. Tox. 1	Aspiration hazard, Category 1
Flam. Liq. 2	Flammable liquids, Category 2
Repr. 2	Reproductive toxicity, Hazard Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

The contents and format of this SDS are in accordance with EEC Commission Directive 2015/830/EC, 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

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