

**Toluene, anhydrous a.r.**

Revision: 03.12.2025

Product code: AC11.00532

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Toluene, anhydrous a.r.

Substance name: toluene  
REACH Registration Number: 01-2119471310-51-XXXX  
CAS No: 108-88-3  
Index No: 601-021-00-3  
EC No: 203-625-9

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

Reagents and laboratory chemicals  
Only for laboratory and analysis purposes.

**Uses advised against**

Do not use for private purposes (household).

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

Company name: AnalytiChem Services, Unipessoal, Lda  
Street: Rua de Júlio Dinis 676 7º  
Place: N-4050-320 Porto  
Telephone: +351 226002917  
E-mail: info@analytichem.com  
Contact person: SDS service department  
E-mail: SDS@analytichem.com  
Internet: www.analytichem.com  
Responsible Department: SDS service department

**Supplier or manufacturer details**

Company name: AnalytiChem Belgium NV  
Street: Industriezone "De Arend" 2  
Place: B-8210 Zedelgem  
Telephone: +32 50 28 83 20  
E-mail: info.be@analytichem.com  
Contact person: SDS service department  
E-mail: SDS@analytichem.com  
Responsible Department: AnalytiChem:  
EU-Belgium: AnalytiChem Belgium, Industriezone "De Arend" 2, 8210 Zedelgem, Belgium, +32 50 28 83 20  
EU-Germany: AnalytiChem Germany, Stempelstrasse 6, 47167 Duisburg, Germany, +49 203 51 94 – 200  
EU-Netherlands: AnalytiChem Netherlands, Communicatieweg 7, 3641 SG Mijdrecht, The Netherlands, +31 297 286848  
UK: AnalytiChem UK, Unit 7 Launton Business Center, Murdock Road, Bicester, OX26 4XB, England, +44 1869 355 500  
USA: AnalytiChem USA, 227 China Road, Winslow, Maine, 04901, United States, +1 800-244-8378  
Canada: AnalytiChem Canada, 21800 Clark Graham Avenue, Baie d'Urfe, H9X 4B6, Canada, +1 514-457-0701  
Australia: ORE Research & Exploration Pty Ltd, 37A Hosie Street, Bayswater North, 3153, Australia, +61 3 9729 0333

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**1.4. Emergency telephone number:** +44 20 3807 3798 (CHEMTREC)

**Further Information**

No data available

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No 1272/2008**

Flam. Liq. 2; H225  
Repr. 2; H361d  
Skin Irrit. 2; H315  
STOT SE 3; H336  
STOT RE 2; H373  
Asp. Tox. 1; H304  
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

**2.2. Label elements****Regulation (EC) No 1272/2008****Signal word:** Danger**Pictograms:****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 (central nervous system) through prolonged or repeated exposure if inhaled.  
H412 Harmful to aquatic life with long lasting effects.

**Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P260 Do not breathe mist/vapours/spray.  
P280 Wear protective gloves/protective clothing and eye protection/face protection.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
P331 Do NOT induce vomiting.  
P403+P235 Store in a well-ventilated place. Keep cool.

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients****3.1. Substances****Sum formula:** C<sub>7</sub>H<sub>8</sub>

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Molecular weight: 92.14 g/mol

**Relevant ingredients**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
108-88-3	toluene			100 %
	203-625-9	601-021-00-3	01-2119471310-51-XXXX	
	Flam. Liq. 2, Repr. 2, Skin Irrit. 2, STOT SE 3, STOT RE 2, Asp. Tox. 1, Aquatic Chronic 3; H225 H361d H315 H336 H373 H304 H412			

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

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
108-88-3	203-625-9	toluene	100 %
	inhalation: LC50 = 28,1 mg/l (vapours); dermal: LD50 = > 5000 mg/kg; oral: LD50 = 5580 mg/kg		

**Further Information**

No data available

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

Remove contaminated, saturated clothing immediately.

**After inhalation**

Provide fresh air.

Call a physician immediately.

**After contact with skin**

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

Call a physician immediately.

**After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

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

Protect uninjured eye.

**After ingestion**

Observe risk of aspiration if vomiting occurs.

Call a physician immediately.

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

Dizziness, Spasms

Vomiting, Gastrointestinal complaints

Causes eye irritation., Headache

Dizziness, Unconsciousness, Respiratory complaints

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

No data available

**SECTION 5: Firefighting measures**

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**5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

no restriction

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

Combustible liquids

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Hazardous combustion products

In case of fire may be liberated:

Carbon dioxide

Carbon monoxide

Beware of reignition.

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

**Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Move undamaged containers from immediate hazard area if it can be done safely.

Use water spray jet to protect personnel and to cool endangered containers.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Vapours can form explosive mixtures with air. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**For non-emergency personnel**

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

To follow: Emergency procedures

Do not breathe mist/vapours/spray.

**For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

Explosion risk.

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

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Collect in closed and suitable containers for disposal.

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**Other information**

Provide adequate ventilation.

Do not breathe mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

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**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

Read label before use.

Handle and open container with care.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Do not breathe dust/fume/gas/mist/vapours/spray.

Provide adequate ventilation.

Use extractor hood (laboratory).

Avoid: aerosol or mist formation

**Advice on protection against fire and explosion**

Take precautionary measures against static discharges.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).

**Advice on general occupational hygiene**

Keep away from: Food and feedingstuffs

When using do not eat, drink, smoke, sniff.

Provide eye shower and label its location conspicuously

**Further information on handling**

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary.

Take off immediately all contaminated clothing and wash it before reuse.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed.

Protect against: Radiant heat.

Keep away from sources of ignition - No smoking.

**Hints on joint storage**

National regulations

**Further information on storage conditions**

Store in a dry place.

Store in a well-ventilated place.

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

Reagents and laboratory chemicals

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters**

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## Exposure limits (EH40)

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
108-88-3	Toluene	50	191		TWA (8 h)	WEL
		100	384		STEL (15 min)	WEL

## DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
108-88-3	toluene			
Worker DNEL, long-term		inhalation	systemic	192 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	systemic	384 mg/m <sup>3</sup>
Worker DNEL, long-term		inhalation	local	192 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	local	384 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	384 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	56,5 mg/m <sup>3</sup>
Consumer DNEL, acute		inhalation	systemic	226 mg/m <sup>3</sup>
Consumer DNEL, long-term		inhalation	local	56,5 mg/m <sup>3</sup>
Consumer DNEL, acute		inhalation	local	226 mg/m <sup>3</sup>
Consumer DNEL, long-term		dermal	systemic	226 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	8,13 mg/kg bw/day

## PNEC values

CAS No	Substance	Value
108-88-3	toluene	
Freshwater		0,68 mg/l
Freshwater (intermittent releases)		0,68 mg/l
Marine water		0,68 mg/l
Freshwater sediment		16,39 mg/kg
Marine sediment		16,39 mg/kg
Micro-organisms in sewage treatment plants (STP)		13,61 mg/l
Soil		2,89 mg/kg

## Additional advice on limit values

Observe in addition any national regulations!

## 8.2. Exposure controls

## Appropriate engineering controls

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

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

## Individual protection measures, such as personal protective equipment

## Eye/face protection

goggles

Face protection umbrella

## Hand protection

Tested protective gloves must be worn

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The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

**Skin protection**

Wear suitable protective clothing.

When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn.

Take off immediately all contaminated clothing and wash it before reuse.

**Respiratory protection**

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Thermal hazards**

No data available

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

Explosion risk.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state:	Liquid
Colour:	clear
Odour:	like: Benzene
Odour threshold:	No data available
Melting point/freezing point:	-93 °C
Boiling point or initial boiling point and boiling range:	110-111 °C
Flammability:	No data available
Lower explosion limits:	1.2 vol. %
Upper explosion limits:	7.1 vol. %
Flash point:	4.4 °C
Decomposition temperature:	No data available
pH-Value (at 20 °C):	not determined
Viscosity / kinematic:	No data available
Water solubility: (at 25 °C)	0.58 g/l
Solubility in other solvents	
No data available	
Dissolution rate:	No data available
Partition coefficient n-octanol/water:	No data available
Dispersion stability:	No data available
Vapour pressure: (at 21.1 °C)	30.88 hPa
Vapour pressure:	No data available
Density (at 25 °C):	0.865 g/cm³
Relative density:	No data available
Bulk density:	No data available
Relative vapour density:	3.18
Particle characteristics:	No data available

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**9.2. Other information****Information with regard to physical hazard classes**

## Explosive properties

Vapours can form explosive mixtures with air.

## Sustained combustibility:

No data available

## Self-ignition temperature

Solid:

No data available

Gas:

No data available

## Oxidizing properties

No data available

**Other safety characteristics**

## Evaporation rate:

No data available

## Solvent separation test:

No data available

## Solvent content:

100%

## Solid content:

0%

## Sublimation point:

No data available

## Softening point:

No data available

## Pour point:

No data available

## No data available:

## Viscosity / dynamic:

0.56 mPa·s

(at 25 °C)

## Flow time:

No data available

**Further Information**

No data available

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Vapours can form explosive mixtures with air.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Explosion hazard with: Nitric acid silver Perchlorates, Oleum

Violent reaction with:

Strong acid

Oxidising agent, strong

SULPHUR

**10.4. Conditions to avoid**

Radiant heat.

**10.5. Incompatible materials**

No data available

**10.6. Hazardous decomposition products**

In case of fire may be liberated:

SECTION 5: Firefighting measures

**Further information**

No data available

**SECTION 11: Toxicological information****11.1. Information on hazard classes**



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**Acute toxicity**

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
108-88-3	toluene				
	oral	LD50 5580 mg/kg	Rat	Toxicology 4, 5-15 (1975)	EU Method B.1
	dermal	LD50 > 5000 mg/kg	Rabbit	American Industrial Hygiene Association	Study investigated mortality in groups o
	inhalation (4 h) vapour	LC50 28,1 mg/l	Rat	Study report (1980)	OECD Guideline 403

**Irritation and corrosivity**

Skin corrosion/irritation: Causes skin irritation.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

**Sensitising effects**

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

**Carcinogenic/mutagenic/toxic effects for reproduction**

Suspected of damaging the unborn child. (toluene)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

**STOT-single exposure**

May cause drowsiness or dizziness. (toluene)

**STOT-repeated exposure**

May cause damage to organs through prolonged or repeated exposure. (toluene)

**Aspiration hazard**

May be fatal if swallowed and enters airways.

Pulmonary oedema

Pneumonia

**Information on likely routes of exposure**

No data available

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available

**Practical experience**

No data available

**11.2. Information on other hazards****Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**Other information**

Dizziness, Spasms

Vomiting, Gastrointestinal complaints

Causes eye irritation., Headache

Dizziness, Unconsciousness, Respiratory complaints

**Further information**

No data available

**SECTION 12: Ecological information**

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**12.1. Toxicity**

Harmful to aquatic life with long lasting effects.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
108-88-3	toluene					
	Acute fish toxicity	LC50 5,5 mg/l	96 h	Oncorhynchus kisutch	Transactions A. Fish. Soc. 110, 430-436.	Fry were exposed to toluene in a flow th
	Acute algae toxicity	ErC50 mg/l > 433	96 h	Pseudokirchneriella subcapitata	REACH Registration Dossier	Method: other
	Acute crustacea toxicity	EC50 11,5 mg/l	48 h	Daphnia magna	REACH Registration Dossier	Method: other
	Fish toxicity	NOEC mg/l 1,39	40 d	Oncorhynchus kisutch	Transactions A. Fish. Soc. 110, 430-436.	Fry were exposed to toluene in a flow th
	Algae toxicity	NOEC mg/l > 400	7 d	Scenedesmus quadricauda	REACH Registration Dossier	Method: other
	Crustacea toxicity	NOEC mg/l 0,74	7 d	Ceriodaphnia dubia	Ecotoxicol. Environ. Saf. 39, 136-146. (	other: US EPA 600/4-91-003

**12.2. Persistence and degradability**

Readily biodegradable (according to OECD criteria).  
(86% / 20d aerob)

**12.3. Bioaccumulative potential****Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
108-88-3	toluene	2,73

**BCF**

CAS No	Chemical name	BCF	Species	Source
108-88-3	toluene	90	Leuciscus idus melanotus	Chemosphere 14 (10).

**12.4. Mobility in soil**

No data available

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

This substance does not meet the PBT/vPvB criteria of UK REACH.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**12.7. Other adverse effects**

Discharge into the environment must be avoided.

**Further information**

Do not allow to enter into surface water or drains.  
Discharge into the environment must be avoided.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

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**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.  
Send to a physico-chemical treatment facility under observation of official regulations.  
Do not allow to enter into surface water or drains.

**Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information****Land transport (ADR/RID)**

<b>14.1. UN number or ID number:</b>	UN 1294
<b>14.2. UN proper shipping name:</b>	TOLUENE
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3
Classification code:	F1
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	33
Tunnel restriction code:	D/E

**Inland waterways transport (ADN)**

<b>14.1. UN number or ID number:</b>	UN 1294
<b>14.2. UN proper shipping name:</b>	TOLUENE
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3
Classification code:	F1
Limited quantity:	1 L
Excepted quantity:	E2

**Marine transport (IMDG)**

<b>14.1. UN number or ID number:</b>	UN 1294
<b>14.2. UN proper shipping name:</b>	TOLUENE
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3
Special Provisions:	-
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-E, S-D

**Air transport (ICAO-TI/IATA-DGR)**

<b>14.1. UN number or ID number:</b>	UN 1294
<b>14.2. UN proper shipping name:</b>	TOLUENE
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3
Limited quantity Passenger:	1 L
Passenger LQ:	Y341
Excepted quantity:	E2
IATA-packing instructions - Passenger:	353
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	364

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IATA-max. quantity - Cargo:

60 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

No dangerous good in sense of this transport regulation.

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

No dangerous good in sense of this transport regulation.

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40, Entry 48, Entry 75

Information according to Directive

P5c FLAMMABLE LIQUIDS

2012/18/EU (SEVESO III):

**Additional information**

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

**National regulatory information**

Water hazard class (D):

3 - highly hazardous to water

**SECTION 16: Other information****Abbreviations and acronyms**

Flam. Liq. 2: Flammable liquids, hazard category 2

Asp. Tox. 1: Aspiration hazard, hazard category 1

Skin Irrit. 2: Skin irritation, hazard category 2

Repr. 2: Reproductive toxicity, hazard category 2

STOT SE 3: Specific target organ toxicity - single exposure, hazard category 3

STOT RE 2: Specific target organ toxicity - repeated exposure, hazard category 2

Aquatic Chronic 3: Hazardous to the aquatic environment, long-term hazard category: Chronic 3

**Relevant H and EUH statements (number and full text)**

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 (central nervous system) through prolonged or repeated exposure if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.