

SAFETY DATA SHEET

Toluene – Item no. 60-057

according to 1907/2006/EC, Article 31



Date: 28/02/2014

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

- 1.1 Product identifier

- Trade name Toluol

- Article number: 1000451600001

- CAS Number:

108-88-3

- EC number:

2036259

- Index number:

601-021-00-3

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

No further relevant information available.

- Application of the substance / the preparation

Solvents

Industrial / commercial use

- 1.3 Company / undertaking identification

Manufacturer, importer, other undertaking

UCY business services & trading GmbH

Contact information:

Street address: Am Villepohl 4

Postcode and post office: DE-53347 Alfter

Telephone number: +49 228 2428 732

Facsimile: +49 228 2428 731

E-mail address: sales@ucy-energy.com

- 1.4. Emergency telephone

Telephone number, name and address

+49 163 8141789

UCY business services & trading GmbH

Am Villepohl 4, DE-53347 Alfter

In case of intoxication (consultation in German and English)

Poisoning emergency number (Berlin)

Tel. +49 (0) 30 30686 790

Emergency telephone number (consultation in German and English)

Poisoning emergency number (Berlin)

Tel. +49 (0) 30 19240

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SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture

- Classification according to Regulation (EC) No 1272/2008

Flam. Liq. 2 H225 Highly flammable liquid and vapour.

Repr. 2 H361d Suspected of damaging the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

- Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xn; Harmful

R48/20-63-65: Harmful: danger of serious damage to health by prolonged exposure through inhalation. Possible risk of harm to the unborn child. Harmful: may cause lung damage if swallowed.

Xi; Irritant

R38: Irritating to skin.

F; Highly flammable

R11: Highly flammable.

R67: Vapours may cause drowsiness and dizziness.

Repr. Cat. 3

- Information concerning particular hazards for human and environment:

Human health hazards: Aspiration into lungs may cause chemical pneumonitis which can be fatal. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Safety hazards: Combustible. Electronic charges may be generated during handling. May form flammable/explosive vapour-air mixture.

Environmental hazards: Not classified as dangerous under EC-criteria

- 2.2 Label elements

- Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

- Hazard pictograms



GHS02 GHS07 GHS08

- Signal word Danger

- Hazard statements

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H361d Suspected of damaging the unborn child.

H336 May cause drowsiness or dizziness.

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

H304 May be fatal if swallowed and enters airways.

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- Precautionary statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P243 Take precautionary measures against static discharge.
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 or doctor/physician.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P331 Do NOT induce vomiting.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P403+P235 Store in a well-ventilated place. Keep cool.

- Additional information: Void

- 2.3 Other hazards

- Results of PBT and vPvB assessment

- PBT: Not applicable.

- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.1 Substances Toluol C₆H₅CH₃

- CAS No. Designation:

108-88-3 toluene

- Identification no(s):

- EC number: 2036259

- Index number: 601-021-00-3

SECTION 4: First aid measures

- 4.1 Description of first aid measures

- General advice:

Instantly remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Take affected persons into the open air.

Personal protection for the First Aider.

- After inhalation

Provide fresh-air circulation. If symptoms continue, consult a doctor. In case of respiratory failure or breathing irregularities, commence resuscitation or oxygen inhalation and immediately consult a doctor. In case of unconsciousness, place und transport the patient in a recovery position.

- After skin contact

Instantly wash with water and soap and rinse thoroughly. If skin irritation persists, seek medical advice.

- After eye contact Rinse immediately opened eye for several minutes under running water. Then consult doctor.

- After swallowing

Do not induce vomiting; instantly call for medical help.

If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

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- 4.2 Most important symptoms and effects, both acute and delayed

Irritant effect to skin, eyes and respiratory organs; headaches; nausea; dizziness feeling; imbalances; anesthesia; unconsciousness.

- Information for doctor

Causes central nervous system depression. Dermatitis may result from prolonged or repeated exposure. Potential for chemical pneumonitis. Consider: gastric lavage with protected airway, administration of activated charcoal.

- 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media

- Suitable extinguishing agents

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

- For safety reasons unsuitable extinguishing agents

Water with a full water jet.

- 5.2 Special hazards arising from the substance or mixture

Can form explosive gas-air mixtures. In case of incomplete combustion carbon monoxide can arise. Fumes are heavier than air and distributed over ground. Inflammation is possible from a far distance.

Avoid contact with combustible substances

hazard determining flue gases: carbon monoxide, soot.

organic decomposition products

- 5.3 Advice for firefighters

- Protective equipment: Wear full protective suit with self-contained breathing apparatus.

- Additional information

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Endangered containers in the surrounding area should be cooled with a water-hose.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment and keep unprotected persons away.

Extinguish naked flames. Remove flammable sources. No smoking. Avoid sparks. Avoid contact with skin, eyes and clothing. Avoid inhalation of fumes. Air contaminated rooms thoroughly. Protect against electrostatic sparks.

- 6.2 Environmental precautions:

Prevent material from reaching sewage system, holes and cellars.

Inform respective authorities in case product reaches water or sewage system.

- 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

- 6.4 Reference to other sections

Risk of explosion. Inform the emergency services if liquid enters surface water drains. Vapour may form explosive mixture with air.

See section 13 for information on disposal.

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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep containers tightly sealed.
Ensure good ventilation/exhaustion at the workplace. Avoid repeated or long-term skin contact.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
Protect against direct sunlight, other sources of heat and ignition.
Keep containers tightly closed. Store in cool, dry conditions.
- **Requirements to be met by storerooms and containers:**
Observe official regulations on storage and handling of water hazardous substances
Store in cool location.
- **Information about storage in one common storage facility:**
According to guidelines of the VbF, flammable liquids should not be stored together.
Store away from oxidizing agents.
- **Further information about storage conditions:**
Attention should be paid to the guidelines of the VbF and the related technical regulations of the TRbF
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:**
Room ventilation i.e. vacuum suction. Measures to be taken against electro-static sparks.

- 8.1 Control parameters

- **Components with critical values that require monitoring at the workplace:**

108-88-3 toluene (50-100%)

WEL Short-term value: 384 mg/m³, 100 ppm
Long-term value: 191 mg/m³, 50 ppm
Sk

- DNELs

Oral	DNEL (population)	8.13 mg/kg bw/day (Long-term - systemic effects)
Dermal	DNEL (population)	226 mg/cm ² (Long-term - systemic effects)

Inhalative	DNEL (worker)	384 mg/kg bw/day (Long-term - systemic effects)
	DNEL (population)	56.5 mg/m ³ (Long-term - systemic effects)
		226 mg/m ³ (Acute - systemic and local effects)
	DNEL (worker)	192 mg/m ³ (Long-term - systemic and local effects)
		384 mg/m ³ (Acute - systemic and local effects)

- PNECs

PNEC 0.68 mg/l (water)
16.39 mg/kg dw (sediment)
2.89 mg/kg dw (STP (sewage treatment plant))
13.61 mg/l (Kläranlage)

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- **Additional information:** The lists that were valid during the compilation were used as basis.

- 8.2 Exposure controls

- Personal protective equipment

- General protective and hygienic measures

Keep away from food, beverages and fodder.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes and skin.

Gases, fumes and aerosols should not be inhaled.

- Breathing equipment:

Use breathing protection in case of insufficient ventilation.

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

filter A

- Protection of hands:

Protective gloves.

Check the permeability prior to each renewed use of the glove.

- Material of gloves

Fluorocarbon rubber (Viton)

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- Penetration time of glove material

Note information regarding permeation rate, penetration times and the degradation supplied by the manufacturer of gloves just as workplace-specific conditions.

Change gloves if notice sign of disenchantment.

- As protection from splashes gloves made of the following materials are suitable: Nitrile rubber, NBR

- Eye protection: Tightly sealed safety glasses.

- Body protection:

Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties

- General Information

- Appearance:

Form:	Fluid
Colour:	Colourless

- Smell: Aromatic

- pH-value: not applicable

- Change in condition

Melting point/Melting range:	-95 °C
Boiling point/Boiling range:	110-111 °C

- Flash point: 4 °C

- Ignition temperature: 535 °C

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- <i>Danger of explosion:</i>	<i>Product is not explosive. However, formation of explosive air/steam mixtures is possible.</i>
- <i>Critical values for explosion:</i>	
<i>Lower:</i>	<i>1.2 Vol %</i>
<i>Upper:</i>	<i>7 Vol %</i>
- <i>Vapour pressure at 20 °C:</i>	<i>40 hPa</i>
- <i>Density at 15 °C</i>	<i>0.871 g/cm³ (ASTM D 1298 50 ml/)</i>
- <i>Solubility in / Miscibility with</i>	
<i>Water at 15 °C:</i>	<i>0.5 g/l</i>
- <i>Partition coefficient (n-octanol/water):</i>	<i>2.65 log POW</i>
- <i>Viscosity:</i>	
<i>dynamic at 20 °C:</i>	<i>0.6 mPas</i>
<i>kinematic at 20 °C:</i>	<i>0.7 mm² s (DIN 53211/4 ,1 (Ether = 1)</i>
- <i>9.2 Other information</i>	<i>No further relevant information available.</i>

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
Can be distilled without decomposing at normal pressure
- **10.3 Possibility of hazardous reactions** *Reacts with oxygen*
- **10.4 Conditions to avoid** *No further relevant information available.*
- **10.5 Incompatible materials:**
Reactions with strong oxidising agents.
Strong acids
- **10.6 Hazardous decomposition products:**
Thermal decomposition can produce a variety of compounds, the precise nature of which will depend on the decomposition conditions.
Formation of carbon monoxide and carbon dioxide in case of fire.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

- LD/LC50 values that are relevant for classification:		
<i>Oral</i>	<i>LD50</i>	<i>5580 mg/kg (rat)</i>
<i>Dermal</i>	<i>LD50</i>	<i>12124 mg/kg (rab)</i>
<i>Inhalative</i>	<i>LC 50 / 4 h</i>	<i>28.1 mg/l (rat)</i>

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- **Primary irritant effect:**
 - **on the skin:** Irritant for skin and mucous membranes.
 - **on the eye:** Slight irritant
- **Sensitization:** No sensitizing effect known.
- **Subacute to chronic toxicity:**
 - **STOT-single exposure:** May cause drowsiness or dizziness.
 - **STOT-repeated exposure:** May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard:**
May be fatal if swallowed and enters airways. Based on physical and chemical properties of the product.
- **Additional toxicological information:**
Repeated or quite a while skin contact may cause skin inflammation (dermatitis) and harms to liver and central nervous system
Vapours in higher concentration have an irritating effect on the upper respiratory tract. Very high concentrations may cause dizziness, headaches and unconsciousness.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
Repr. 2

SECTION 12: Ecological information

- 12.1 Toxicity

- Aquatic toxicity:

EC 50 / 48 h	1-10 mg/l (Aquatic invertebrates)
EC 50 / 96 h	> 100 mg/l (Algae)
LC 50 / 96 h	1-10 mg/l (fish)

- 12.2 Persistence and degradability

Oxidises rapidly by photo-chemical reactions in air.
The product is readily biodegradable.

- 12.3 Bioaccumulative potential

No significant bioaccumulation.
swims on water

- 12.4 Mobility in soil No further relevant information available.

- Additional ecological information:

- General notes:

Danger to drinking water if even small quantities leak into soil.
Water hazard class 2 (Assessment by list): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.

- 12.5 Results of PBT and vPvB assessment

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods

The following advice is related to new material and not to any processed products. In case of a mixture with other products other disposal methods may become necessary. If in doubt seek advice from product supplier or from local authorities.

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- Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

If possible, send to be recycled, otherwise burn or deposit in a certified facility.

Contaminated water to separate by separator and dispose off in line with administrative regulations.

- Waste disposal key number:

Since 01/01/99 the waste code numbers have not only been product-related but are also essentially application-related. The valid waste code number of the application can be obtained from the European waste catalogue.

- Uncleaned packagings: Disposal must be made according to official regulations.

- Recommendation:

Rented packaging: After optimal emptying, close immediately and return to the supplier without cleaning. Care should be taken that no other materials get into the packaging.

Caution: Leftovers in the containers may cause the risk of explosion.

Uncleaned containers should not be perforated, cut or welded.

SECTION 14: Transport information

- 14.1 UN-Number	
- ADR, IMDG, IATA	1294
- 14.2 UN proper shipping name	
- ADR	1294 Toluene
- IMDG, IATA	TOLUENE
- 14.3 Transport hazard class(es)	
- ADR	
- Class	3 (F1) Flammable liquids.
- Label	3
- IMDG, IATA	
- Class	3 Flammable liquids.
- Label	3
- 14.4 Packing group	
- ADR, IMDG, IATA	II
- 14.5 Environmental hazards:	
- Marine pollutant:	no
- 14.6 Special precautions for user	
- Warning:	Warning: Flammable liquids.
- Kemler Number:	33
- EMS Number:	F-E,S-D
- 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
	Not applicable.
- UN "Model Regulation":	
	UN1294, TOLUENE, 3, II

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SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- **Decree to be applied in case of technical fault:**
Material group 2 (light flammable liquids) mixing-swell to be observed
- **Technical instructions (air):**

Class	Share in %
I	50-100
- **VOC** 100% volatile organic compounds (Council Directive 2010/75/EC).
- **Water hazard class:** Water hazard class 2 (Assessment by list): hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing data specification sheet:** see item 1: Informing department
- **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organization
NOAEL: No Observed Adverse Effect Level
LEV: Local Exhaust Ventilation
RPE: Respiratory Protective Equipment
RCR: Risk Characterisation Ratio ($RCR = PEC/PNEC$)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CLP: Classification, Labelling and Packaging (Regulation (EC) No. 1272/2008)
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
- *** Data compared to the previous version altered.**

Further information:

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