

Safety Data Sheet

according to Regulation (EC) No 1907/2006

14470-49 Toluene, ACS

Revision date: 01.03.2018

Product code: 1447049

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

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Product group: Zulieferprodukt
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**

Water analysis

1.3. Details of the supplier of the safety data sheet

Company name: HACH LANGE GmbH
Street: Willstätterstr. 11
Place: D-40549 Düsseldorf
Telephone: +49 (0)211 5288-383
e-mail: SDS@hach.com
Internet: www.de.hach.com
Responsible Department: HACH LANGE Ltd.
5, Pacific Way
Salford Manchester M50 1DL - United Kingdom
Tel. +44 (0) 161 872 1487 * Fax +44 (0) 161 848 7324
e-Mail: info-uk@hach.com

HACH LANGE Ltd.
Unit 1, Chestnut Road Western Industrial Estate
IRL-Dublin 12
Tel. +353 (0)1 4602522
e-Mail: info-ie@hach.com

1.4. Emergency telephone number:

Poison Control Center Mainz: Tel: +49 (0) 6131 19240 - 24 hour emergency service -

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

Hazard categories:
Flammable liquid: Flam. Liq. 2
Reproductive toxicity: Repr. 2
Aspiration hazard: Asp. Tox. 1
Specific target organ toxicity - repeated exposure: STOT RE 2
Skin corrosion/irritation: Skin Irrit. 2
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Highly flammable liquid and vapour.
Suspected of damaging the unborn child.
May be fatal if swallowed and enters airways.
May cause damage to organs through prolonged or repeated exposure.
Causes skin irritation.
May cause drowsiness or dizziness.

2.2. Label elements

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Regulation (EC) No. 1272/2008

Hazard components for labelling

toluene

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 through prolonged or repeated exposure.

Precautionary statements

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P261 Avoid breathing Vapour.
 P281 Use personal protective equipment as required.
 P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
 P331 Do NOT induce vomiting.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Additional advice on labelling

The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.1. Substances

Molecular weight: 92,14

Hazardous components

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

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

- Take off all contaminated clothing immediately.
 Show this safety data sheet to the doctor in attendance.

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After inhalation

Move to fresh air. If breathing has stopped, apply artificial respiration. Consult a physician.

After contact with skin

Wash off immediately with plenty of water for at least 15 minutes. Take off all contaminated clothing immediately. If skin irritation persists, call a physician.

After contact with eyes

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

After ingestion

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Clean mouth with water and drink afterwards plenty of water. Consult a physician.

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

See also section 2.2, 11

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Foam, Dry powder, Carbon dioxide (CO₂)

5.2. Special hazards arising from the substance or mixture

Fire may liberate hazardous vapours. As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Explosive properties!

5.3. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Additional information

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Only qualified personnel equipped with suitable protective equipment may intervene. Immediately evacuate personnel to safe areas.

Do not breathe vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

Explosive properties!

6.3. Methods and material for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4. Reference to other sections

13. Disposal considerations

SECTION 7: Handling and storage

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7.1. Precautions for safe handling**Advice on safe handling**

- Use only in well-ventilated areas.
- Avoid contact with skin and eyes.
- Do not breathe vapours/dust.
- Wash thoroughly after handling.

Advice on protection against fire and explosion

Highly flammable

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

- Keep away from sources of ignition - No smoking.
- Keep tightly closed in a dry, cool and well-ventilated place.

Hints on joint storage

Do not store together with Acids, Oxidizing agents

7.3. Specific end use(s)

See also section 1.2

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

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

8.2. Exposure controls**Appropriate engineering controls**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Protective and hygiene measures

- Wash hands before breaks and after work.
- General industrial hygiene practice.
- Ensure that eye flushing systems and safety showers are located close to the working place.
- Use only in area provided with appropriate exhaust ventilation.

Eye/face protection

Safety glasses with side-shields

Hand protection

Use barrier skin cream.

Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Glove material : Fluorinated rubber

Layer thickness: 0,7 mm

Break through time: 480 min

Skin protection

- Remove and wash contaminated clothing before re-use.
- Flame retardant antistatic protective clothing

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Respiratory protection

Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.

Ensure adequate ventilation, especially in confined areas.

In case of insufficient ventilation, wear suitable respiratory equipment.

In the case of vapour formation use a respirator with an approved filter.

Recommended Filter type: (gas filter type A)

Environmental exposure controls

Do not flush into surface water or sanitary sewer system.

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

Physical state:	liquid
Colour:	colourless
Odour:	characteristic

Test method

pH-Value (at 20 °C): not applicable

Changes in the physical state

Melting point: -93 °C

Initial boiling point and boiling range: 110-111 °C

Sublimation point: no data available

Softening point: no data available

Pour point: no data available

Ignition temperature: 535 °C

Flash point: 4 °C

Flammability

Solid: no data available

Gas: no data available

Explosive properties

no data available

Lower explosion limits: 1,2 vol. %

Upper explosion limits: 7 vol. %

Ignition temperature: no data available DIN 51794

Auto-ignition temperature

Solid: 535 °C

Decomposition temperature: no data available

Oxidizing properties

no data available

Vapour pressure:
(at 20 °C) 29 hPa

Vapour pressure: no data available

Density (at 20 °C): 0,87 g/cm³

Bulk density: no data available

Water solubility:
(at 20 °C) 0,52 g/L

Solubility in other solvents

no data available

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Partition coefficient:	no data available
Viscosity / dynamic: (at 20 °C)	0,6 mPa·s
Viscosity / kinematic: (at 20 °C)	0,7 mm²/s
Flow time:	no data available
Vapour density:	no data available
Evaporation rate:	no data available
Solvent separation test:	no data available
Solvent content:	no data available

9.2. Other information

Solid content:	no data available
no data available	

SECTION 10: Stability and reactivity

10.1. Reactivity

no data available

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Finely dispersed particles form explosive mixtures with air.

10.4. Conditions to avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible materials

Strong acids and oxidizing agents
Aluminium
Paraffin

10.6. Hazardous decomposition products

Heating can release hazardous gases. Risk of ignition.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

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

LD50/oral/rat = 636 mg/kg (GESTIS)

LC50/inhalation/4h/rat = 49 mg/m³ (GESTIS)

LD50/dermal/rabbit = 12200 mg/kg (GESTIS)

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
108-88-3	toluene				
	dermal	LD50 mg/kg	12200	Rabbit	GESTIS
	inhalation (4 h) vapour	LC50	49 mg/l	Rat	GESTIS

Irritation and corrosivity

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Causes skin irritation.

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

May cause skin irritation.

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.

Avoid exposure to women during early pregnancy.

IARC: (International Agency for Research on Cancer): 3

Experiments have shown reproductive toxicity effects in male and female laboratory animals.

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. (toluene)

Additional information on tests

RTECS: XS5250000

SECTION 12: Ecological information
12.1. Toxicity

Toxic effects on fish and plankton

Toxicity to daphnia

LC50 Oncorhynchus mykiss (rainbow trout): 7,63 mg/l / 96h (Sigma Aldrich)

NOEC Pimephales promelas (fathead minnow): 5,44 mg/l / 7d (Sigma Aldrich)

EC50 Daphnia magna (Water flea): 8,00 mg/l / 24h (Sigma Aldrich)

Immobilization EC50 Daphnia magna (Water flea): 6mg/l / 48h (Sigma Aldrich)

EC50 Chlorella vulgaris (Fresh water algae): 245 mg/l / 24h (Sigma Aldrich)

EC50 Pseudokirchneriella subcapitata (green algae): 10,00 mg/l / 24h (Sigma Aldrich)

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
108-88-3	toluene					
	Acute fish toxicity	LC50 13 mg/l	96 h	Carassius auratus	IUCLID	
	Acute algae toxicity	ErC50 12,5 mg/l	72 h		GESTIS	

12.2. Persistence and degradability

Readily biodegradable.

12.3. Bioaccumulative potential

Leuciscus idus (Golden orfe) 0,05 mg/l / 3d

Bioconcentration factor (BCF): 90

Partition coefficient n-octanol/water

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

12.4. Mobility in soil

no data available

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12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

Toxic to aquatic organisms.

Further information

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Advice on disposal**

In accordance with local and national regulations.

Waste disposal number of waste from residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

Waste disposal number of used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

Contaminated packaging

Dispose of as unused product.

The hazard and precautionary statements displayed on the label also apply to any residues left in the container.

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

<u>14.1. UN number:</u>	UN 1294
<u>14.2. UN proper shipping name:</u>	TOLUENE
<u>14.3. Transport hazard class(es):</u>	3
<u>14.4. Packing group:</u>	II
Hazard label:	3



Classification code:	F1
Limited quantity:	1 L
Transport category:	2
Hazard No:	33
Tunnel restriction code:	D/E

Other applicable information (land transport)

Excepted Quantities: E2

Inland waterways transport (ADN)**Other applicable information (inland waterways transport)**

Not tested

Marine transport (IMDG)

<u>14.1. UN number:</u>	UN 1294
<u>14.2. UN proper shipping name:</u>	TOLUENE
<u>14.3. Transport hazard class(es):</u>	3

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14.4. Packing group: II
Hazard label: 3




Marine pollutant: --
Special Provisions: -
Limited quantity: 1 L
EmS: F-E, S-D

Other applicable information (marine transport)

Excepted Quantities: E2

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 1294
14.2. UN proper shipping name: TOLUENE
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3



Limited quantity Passenger: 1 L
IATA-packing instructions - Passenger: 353
IATA-max. quantity - Passenger: 5 L
IATA-packing instructions - Cargo: 364
IATA-max. quantity - Cargo: 60 L

Other applicable information (air transport)

Excepted Quantities: E2

Passenger-LQ: Y341

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

no data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

Other applicable information

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit, Hazard Class: 9, UN Number 3316, Package group II, EMS Code: F-A, S-P
These transport data apply to the entire pack

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 48: toluene

National regulatory information

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Employment restrictions: Observe restrictions to employment for juvenils 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.

Water contaminating class (D): 2 - clearly water contaminating

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

Revision: 01.03.2018

Safety datasheet sections which have been updated: 2, 8, 11, 15

Revision: 29.10.2014

Safety datasheet sections which have been updated: 2-16

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 through prolonged or repeated exposure.

Further Information

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

Identified uses

No	Short title	LCS	SU	PC	PROC	ERC	AC	TF	Specification
1	Laborchemikalie	-	-	21	-	1	-	-	3

LCS: Life cycle stages

PC: Product categories

ERC: Environmental release categories

TF: Technical functions

SU: Sectors of use

PROC: Process categories

AC: Article categories