

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1 Product identifier**
- Product Name: Toluene
- Product Description: V4054a-TOLUENE- Toluene
- Trade name: TOLUENE
- Product Code: TOL
- CAS No.: 108-88-3
EC No.: 203-625-9
- Synonyms: Methyl benzene, 1-Methylbenzene, Benzene, methyl-
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
- Identified use(s): Industrial use only.
- 1.3 Details of the supplier of the Safety Data Sheet**
- Company Identification: Vitol SA
Boulevard du Pont d'Arve 28
P.O. Box 384
1211 Geneva 4
Switzerland
- Telephone: +31 10 498 7200
Fax: +31 10 452 9545
E-Mail (competent person): xreach@vitol.com
- 1.4 Emergency telephone number**
- Emergency Phone No. (24 h): +44 (0) 1235 239 670 (24 hours, 7 days)


2. HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**
- According to Regulation (EC) No. 1272/2008 (CLP)
- Flam. Liq. 2; H225
Asp. Tox. 1; H304
Skin Irrit. 2; H315
STOT SE 3; H336
Repr. 2; H361d
STOT RE 2; H373
- According to Directive 67/548/EEC & Directive 1999/45/EC
- F; R11
Repr. Cat. 3; R63
Xn; R48/20 - R65
Xi; R38
R67
- 2.2.1 Label elements**
- Hazard pictogram(s): According to Regulation (EC) No. 1272/2008 (CLP)



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Signal word(s):	Danger
Hazard statement(s):	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: Inhalation - Central nervous system.
Precautionary statement(s):	P210: Keep away from heat, sparks, open flame, hot surfaces - 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 CENTRE or doctor/physician. P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P331: Do NOT induce vomiting.
2.2.2 Label elements	<u>According to Directive 67/548/EEC & Directive 1999/45/EC</u>
Hazard pictogram(s):	
Hazard Symbol:	Highly flammable. Harmful.
Risk Phrases:	R11: Highly flammable. R38: Irritating to skin. R48/20: Harmful: danger of serious damage to health by prolonged exposure through inhalation. R63: Possible risk of harm to the unborn child. R65: Harmful: may cause lung damage if swallowed. R67: Vapours may cause drowsiness and dizziness.
Safety Phrases:	S2: Keep out of the reach of children. S36/37: Wear suitable protective clothing and gloves. S46: If swallowed, seek medical advice immediately and show this container or label. S62: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
2.3 Other hazards	Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. May cause eye irritation. May cause irritation to the respiratory system.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

EC Classification No. 1272/2008

Hazardous ingredient(s)	%W/W	CAS No.	EC No.	Hazard symbol(s) and hazard statement(s)
Toluene	> 99.0	108-88-3	203-625-9	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Repr. 2; H361d STOT RE 2; H373

EC Classification No. 67/548/EC

Hazardous ingredient(s)	%W/W	CAS No.	EC No.	Risk Phrases and Safety Phrases
Toluene	> 99.0	108-88-3	203-625-9	F; R11 Repr. Cat. 3; R63 Xn; R48/20 - R65 Xi; R38 R67

4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation:	Obtain immediate medical attention. Remove patient from exposure, keep warm and at rest.
Skin Contact:	Remove contaminated clothing immediately and drench affected skin with plenty of water, then wash with soap and water. If symptoms develop, obtain medical attention. Contaminated clothing should be thoroughly cleaned.
Eye Contact:	If substance has got into the eyes, immediately wash out with plenty of water for at least 15 minutes. Obtain medical attention.
Ingestion:	Do not induce vomiting. Provided the patient is conscious, wash out mouth with water and give 200-300 ml (half a pint) of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Aspiration hazard. Irritating to skin.

4.3 Indication of the immediate medical attention and special treatment needed

Have available eyewash bottle with clean water. If breathing is laboured, oxygen should be administered by qualified personnel. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media:	Foam, CO ₂ or dry powder.
Unsuitable Extinguishing Media:	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces.

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May give off toxic fumes in a fire. Carbon monoxide, Carbon dioxide.

5.3 Advice for fire-fighters

A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions. Keep fire exposed containers cool by spraying with water.

Flash Point (°C): 4.4

Flammable Limits (Lower) (%v/v): 1.2 (IUCLID)

Flammable Limits (Upper) (%v/v): 7.1(IUCLID)

Auto Ignition Temperature (°C): 480

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Eliminate sources of ignition. Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. Ensure adequate ventilation. Use non-sparking hand tools and explosion proof electrical equipment. Take precautionary measures against static discharges.

Avoid inhalation of vapours. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves. (See Section: 8). Contaminated clothing should be thoroughly cleaned.

6.2 Environmental precautions

Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.

6.3 Methods and material for containment and cleaning up

Adsorb spillages onto sand, earth or any suitable adsorbent material. Sweep up carefully with non-sparking tools. Transfer to a container for disposal. Wash spill area with soapy water. Contaminated adsorbent must be removed in sealed, plastic lined drums and disposed of via an authorised waste disposal contractor.

6.4 Reference to other sections

Personal Protection: See Section: 8.

Other advice

Caution - spillages may be slippery.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Eliminate sources of ignition. Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded. Use non-sparking hand tools and explosion proof electrical equipment. Take precautionary measures against static discharges.

Avoid inhalation of vapours. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves. (See Section: 8).

Do not eat, drink or smoke at the work place. Wash hands and exposed skin after use. Contaminated clothing should be thoroughly cleaned.

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- 7.2 Conditions for safe storage, including any incompatibilities** Keep away from heat and sources of ignition. Keep from direct sunlight. Keep away from frost. Keep only in the original container in a cool, well-ventilated place. Keep/store away from: Oxidising agents.
- 7.3 Specific end use(s)** Industrial use only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note:
Toluene	108-88-3	50	191	100	384	Sk (EH40)
		50	192	100	384	2006/15/EC

Sk - Can be absorbed through skin.

France: 50 ppm, 192 mg/m³ (VME) ; 100 ppm, 384 mg/m³ (VLCT, ou VLE)

Spain : 50 ppm, 192 mg/m³ (VLA-ED) ; 100 ppm, 384 mg/m³ (VLA-EC) – vía dérmica, VLB, VLI

Germany: 1.0 mg/l (BGW)

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded.

8.2.2 Personal Protection

Eye/face protection



Goggles giving complete protection to eyes. (EN 166)

Skin protection



Protective gloves. (EN 374)

Respiratory protection



In case of insufficient ventilation, wear suitable respiratory equipment. (BS EN 14387:2004+A1)

Other:

Apron or other light protective clothing, boots and plastic or rubber gloves.

8.2.3 Environmental Exposure Controls

Avoid release to the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Liquid.
Colour:	Colourless.
Odour:	Benzene-like.
Melting Point (°C) / Freezing Point (°C):	-95
Boiling Point (°C):	110.6

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Flash Point (°C):	4.4
Flammable Limits (Lower) (%v/v):	1.2 (IUCLID)
Flammable Limits (Upper) (%v/v):	7.1 (IUCLID)
Vapour Pressure (Pascal):	3088.9 (@ 21.1 °C)
Specific Gravity: (g/cm ³)	0.866 (@ 20 °C)
Solubility (Water):	573-587 mg/l (@ 25 °C)
Partition Coefficient: (n-Octanol/water)	2.73 (@ 25 °C)
Auto Ignition Temperature (°C):	480
Dynamic viscosity:	0.56 mPa/s (@ 25 °C)
Explosive Properties:	Vapour may create explosive atmosphere.
Oxidising Properties:	Not oxidising.
9.2 Other information	
Conductivity:	5 pS/m
Molecular Weight:	92.14

10. STABILITY AND REACTIVITY

10.1 Reactivity	Reacts with - Strong oxidising agents.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	No information available.
10.4 Conditions to avoid	Keep away from heat, sources of ignition and direct sunlight.
10.5 Incompatible materials	Oxidizing agents.
10.6 Hazardous Decomposition Product(s)	May give off toxic fumes in a fire. Carbon monoxide, Carbon dioxide.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	
Acute toxicity:	
Ingestion:	LD ₅₀ (oral/rat): >5000 mg/kg
Inhalation:	LC ₅₀ (inhalation/rat): 28.1 mg/l/4h
Skin Contact:	LD ₅₀ (dermal/rabbit): > 5000mg/kg
Eye Contact:	No information available.
Skin corrosion/irritation:	Irritating to skin.
Serious eye damage/irritation:	May cause eye irritation.
Respiratory or skin sensitization:	Negative.
Mutagenicity:	There is no evidence of mutagenic potential.
Carcinogenicity:	No evidence of carcinogenicity. NOAEC: 4522 mg/m ³
Reproductive toxicity:	Suspected of damaging the unborn child. NOAEC: 2261 mg/m ³
STOT - single exposure:	May cause drowsiness and dizziness.
STOT-repeated exposure:	May cause damage to organs: Central nervous system.
Aspiration hazard:	Risk of aspiration. Aspiration of liquid may cause pulmonary oedema.
Other information:	No information available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity	LC ₅₀ (fish): 5.5 mg/l/96 h EC ₅₀ (Daphnia magna): 3.78 mg/l/48h log _{Kow} of 2.73 WGK: 2.
12.2 Persistence and degradability	Readily biodegradable. The product is unlikely to persist in the environment.
12.3 Bioaccumulative potential	Bioconcentration factor (BCF) : 90 (Measured)
12.4 Mobility in soil	The product has low mobility in soil.
12.5 Results of PBT and VPVB assessment	half-life > 60 days - Fresh water half-life > 60 days - Soil

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12.6 Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods Do not empty into drains; dispose of this material and its container in a safe way. To be disposed of as hazardous waste.

Contaminated adsorbent must be removed in sealed, plastic lined drums and disposed of via an authorised waste disposal contractor. Disposal should be in accordance with local, state or national legislation.

14. TRANSPORT INFORMATION

14.1 UN number 1294

14.2 Proper Shipping Name TOLUENE

14.3 Transport hazard class(es) 3

14.4 Packing Group II

14.5 Environmental hazards Not classified as a Marine Pollutant.

14.6 Special precautions for user Flammable. Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Pollution Category: B
Ship Type: IBC02

15. REGULATORY INFORMATION

According to Regulation (EC) No. 1272/2008 (CLP)

Hazard pictogram(s):



Signal word(s):

Danger

Hazard statement(s):

H225: Highly flammable liquid and vapour.
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H373: May cause damage to organs through prolonged or repeated exposure: Inhalation - Central nervous system.

Precautionary statement(s):

P210: Keep away from heat, sparks, open flame, hot surfaces - 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 CENTRE or doctor/physician.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P331: Do NOT induce vomiting.

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According to Directive 67/548/EEC & Directive 1999/45/EC

Hazard pictogram(s):



Hazard Symbol:

Highly flammable. Harmful.

Risk Phrases:

R11: Highly flammable.
 R38: Irritating to skin.
 R48/20: Harmful: danger of serious damage to health by prolonged exposure through inhalation.
 R63: Possible risk of harm to the unborn child.
 R65: Harmful: may cause lung damage if swallowed.
 R67: Vapours may cause drowsiness and dizziness.

Safety Phrases:

S2: Keep out of the reach of children.
 S36/37: Wear suitable protective clothing and gloves.
 S46: If swallowed, seek medical advice immediately and show this container or label.
 S62: If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

16. OTHER INFORMATION

Full text of Hazard statements and Risk phrases for pure substances listed in section 3.

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The following sections contain revisions or new statements: 1-16.

Abbreviations:

CAS = Chemical Abstracts Service;
 CNS = Central Nervous System;
 EINECS = European Inventory of Existing Commercial Chemical Substances;
 EC50 = Effective Concentration 50%;
 IARC = International Agency for Research on Cancer;
 IC50 = Inhibitory Concentration 50%;
 LC50 = Lethal Concentration 50%;
 LD50 = Lethal Dose 50%;
 LTEL = Long Term Exposure Limit;
 STEL = Short Term Exposure Limit;
 TWA = Time Weighted Average;

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References:

IUCLID Chemical Data Sheets, IUCLID Export Files, OECD-IUCLID Export Files, EUSES Export Files,

European risk assessment report, Toluene CAS No. 108-88-3, EINECS No. 203-625-9

<http://webrigoletto.uba.de/rigoletto>

Disclaimer:

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