

# MATERIAL SAFETY DATA SHEET



## Toluene

### Section 1 - Chemical Product and Company Identification

<b>MSDS Name:</b>	Toluene
<b>Synonyms:</b>	Toluol ; Methylbenzene
Company Identification: (INDIA)	Veritas House, 70 Mint Road, Fort, Mumbai - 400 001. INDIA
For information in the INDIA, call:	Tel: +91 - 22 - 2275 5555 / 6184 0000, Fax: +91 - 22 - 2275 5556 / 6184 0001

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
108-88-3	Toluene	99%	203-625-9

<b>Hazard Symbols:</b>	XN F
	
<b>Risk Phrases:</b>	11 38 48/20 63 65 67

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

*Highly flammable. Irritating to skin. 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. Vapours may cause drowsiness and dizziness.*

#### Potential Health Effects

<b>Eye:</b>	May result in corneal injury. Vapors may cause eye irritation. May cause conjunctivitis. Causes redness and pain.
<b>Skin:</b>	Causes skin irritation. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. May be absorbed through the skin. Causes symptoms similar to those of inhalation. Causes redness and pain.
<b>Ingestion:</b>	Harmful if swallowed. Aspiration hazard. May cause irritation of the digestive tract. May cause effects similar to those for inhalation exposure. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May cause nausea and vomiting. May cause unconsciousness. May cause lung damage.
<b>Inhalation:</b>	Harmful if inhaled. Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. High vapor concentrations may cause drowsiness. Inhalation of vapor may cause respiratory tract irritation. May cause heart disturbances, possibly leading to cardiac arrest and death. May cause narcotic effects in high concentration.
<b>Chronic:</b>	Prolonged or repeated skin contact may cause dermatitis. May cause cardiac sensitization and severe heart abnormalities. May cause liver and kidney damage. Repeated exposure may cause central nervous system damage. Possible risk of harm to the unborn child.

## Section 4 - First Aid Measures

<b>Eyes:</b>	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
<b>Skin:</b>	Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.
<b>Ingestion:</b>	Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Possible aspiration hazard. Get medical aid.
<b>Inhalation:</b>	Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
<b>Notes to Physician:</b>	Causes cardiac sensitization to endogenous catecholamines which may lead to cardiac arrhythmias. Do NOT use adrenergic agents such as epinephrine or pseudoepinephrine.

## Section 5 - Fire Fighting Measures

<b>General Information:</b>	Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Flammable liquid and vapor.
<b>Extinguishing Media:</b>	Use dry chemical, carbon dioxide, or alcohol-resistant foam.

## Section 6 - Accidental Release Measures

<b>General Information:</b>	Use proper personal protective equipment as indicated in Section 8.
<b>Spills/Leaks:</b>	Avoid runoff into storm sewers and ditches which lead to waterways. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

## Section 7 - Handling and Storage

<b>Handling:</b>	Wash thoroughly after handling. Use with adequate ventilation. Use spark-proof tools and explosion proof equipment. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Take precautionary measures against static discharges. Do not get on skin or in eyes. Do not ingest or inhale.
<b>Storage:</b>	Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

## Section 8 - Exposure Controls, Personal Protection

<b>Engineering Controls:</b>	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
<b>Exposure Limits</b>	CAS# 108-88-3: United Kingdom, WEL - TWA: 50 ppm TWA; 191 mg/m3 TWA United Kingdom, WEL - STEL: 150 ppm STEL; 574 mg/m3 STEL United States OSHA: 200 ppm TWA; 300 ppm Ceiling Belgium - TWA: 50 ppm VLE; 191 mg/m3 VLE

	France-VME:100 ppm VME;375 mg/m3 VME France-VLE:150ppm VLE;550 mg/m3 VLE
	Germany: 50 ppm TWA; 190 mg/m3 TWA Germany: skin notation
	Japan: 50 ppm OEL; 188 mg/m3 OEL
	Malaysia: 50 ppm TWA; 188 mg/m3 TWA
	Netherlands: 40 ppm MAC; 150 mg/m3 MAC
	Russia: 50 mg/m3 TWA (vapour)
	Spain: 50 ppm VLA-ED; 191 mg/m3 VLA-ED

#### Personal Protective Equipment

<b>Eyes:</b>	Wear chemical splash goggles.
<b>Skin:</b>	Wear appropriate protective gloves to prevent skin exposure.
<b>Clothing:</b>	Wear appropriate protective clothing to prevent skin exposure.
<b>Respirators:</b>	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## Section 9 - Physical and Chemical Properties

<b>Physical State:</b>	Clear liquid
<b>Color:</b>	APHA: 10 max
<b>Odor:</b>	sweetish odor - characteristic odor
<b>pH:</b>	Not available
<b>Vapor Pressure:</b>	29mbar @20 deg C
<b>Viscosity:</b>	0.6 mPa.s @20 deg C
<b>Boiling Point:</b>	111 deg C @760mmHg ( 231.80°F)
<b>Freezing/Melting Point:</b>	-95 deg C ( -139.00°F)
<b>Autoignition Temperature:</b>	535 deg C ( 995.00 deg F)
<b>Flash Point:</b>	4 deg C ( 39.20 deg F)
<b>Explosion Limits: Lower:</b>	1.2 Vol %
<b>Explosion Limits: Upper:</b>	7 Vol %
<b>Decomposition Temperature:</b>	Not available
<b>Solubility in water:</b>	0.5 g/l (20°C)
<b>Specific Gravity/Density:</b>	0.866
<b>Molecular Formula:</b>	C7H8
<b>Molecular Weight:</b>	92.14

## Section 10 - Stability and Reactivity

<b>Chemical Stability:</b>	Stable under normal temperatures and pressures.
<b>Conditions to Avoid:</b>	Incompatible materials, ignition sources, excess heat.
<b>Incompatibilities with Other Materials</b>	Strong oxidizing agents, bromine trifluoride, nitric acid, silver perchlorate, dinitrogen tetroxide, tetranitromethane.
<b>Hazardous Decomposition Products</b>	Carbon monoxide, carbon dioxide.
<b>Hazardous Polymerization</b>	Will not occur.

## Section 11 - Toxicological Information

<b>RTECS#:</b>	CAS# 108-88-3: XS5250000
<b>LD50/LC50:</b>	<p>RTECS:</p> <p><b>CAS# 108-88-3:</b> Draize test, rabbit, eye: 870 ug Mild;            Draize test, rabbit, eye: 2 mg/24H Severe;            Draize test, rabbit, skin: 435 mg Mild;            Draize test, rabbit, skin: 500 mg Moderate;            Draize test, rabbit, skin: 20 mg/24H Moderate;            Inhalation, mouse: LC50 = 400 ppm/24H;            Inhalation, mouse: LC50 = 30000 mg/m3/2H;            Inhalation, mouse: LC50 = 19900 mg/m3/7H;            Inhalation, mouse: LC50 = 10000 mg/m3;            Inhalation, rat: LC50 = 49 gm/m3/4H;            Oral, rat: LD50 = 636 mg/kg;            Skin, rabbit: LD50 = 14100 uL/kg;            Other:</p>
<b>Carcinogenicity:</b>	Toluene - IARC: Group 3 (not classifiable)
<b>Other:</b>	See actual entry in RTECS for complete information. Mutagenicity: Ames-test: negative. Possible teratogen.

## Section 12 - Ecological Information

<b>Ecotoxicity:</b>	<p>Fish: Fathead Minnow: LC50: 36.2 mg/L; 96H; .            Daphnia: EC50: 11.5 mg/L; 48H; .            Fish: Bluegill/Sunfish: LC50: 24 mg/L; 96H; .            Fish: Goldfish: LC50: 58 mg/L; 48H; .</p>
<b>Other:</b>	In water, substance volatilizes and biodegrades. log Pow: 2.65BCF: 90

## Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

## Section 14 - Transport Information

	IATA	IMO	RID/ADR
<b>Shipping Name:</b>	TOLUENE	TOLUENE	TOLUENE
<b>Hazard Class:</b>	3	3	3
<b>UN Number:</b>	1294	1294	1294
<b>Packing Group:</b>	II	II	II

USA RQ: CAS# 108-88-3: 1000 lb final RQ; 454 kg final RQ

## Section 15 - Regulatory Information

<b>European/International Regulations</b>
European Labeling in Accordance with EC Directives
Hazard Symbols: XN F
<b>Risk Phrases:</b>
➤ R 11 Highly flammable.

➤ R 38 Irritating to skin.
➤ R 48/20 Harmful : danger of serious damage to health by prolonged exposure through inhalation.
➤ R 63 Possible risk of harm to the unborn child.
➤ R 65 Harmful: may cause lung damage if swallowed.
➤ R 67 Vapours may cause drowsiness and dizziness.
<b>Safety Phrases:</b>
➤ S 36/37 Wear suitable protective clothing and gloves.
➤ S 46 If swallowed, seek medical advice immediately and show this container or label.
➤ S 62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
<b>WGK (Water Danger/Protection)</b>
➤ CAS# 108-88-3: 2
<b>Canada</b>
➤ CAS# 108-88-3 is listed on Canada's DSL List
<b>US Federal</b>
➤ TSCA
➤ CAS# 108-88-3 is listed on the TSCA Inventory.

## Section 16 - Other Information

<b>MSDS Creation Date:</b>	July 26, 2015
<b>Revision #1 Date</b>	

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