



## SAFETY DATA SHEET

### TOLUENE

#### 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME	TOLUENE
PRODUCT NO.	TOLUGEN
SYNONYMS, TRADE NAMES	METHYLBENZENE, TOLUOL, METHYLBENZOL, PHENYLMETHANE
SUPPLIER	BENTLEY CHEMICALS 17 ROWLAND WAY HOO FARM KIDDERMINSTER WORCS DY11 7RA TEL 01562 515121 FAX 015462 515847

#### 2 COMPOSITION/INFORMATION ON INGREDIENTS

EU INDEX NO.	601-021-00-3
EEC (EINECS) NO.	203-625-9
CAS-NO.	108-88-3

#### 3 HAZARDS IDENTIFICATION

Highly flammable. Harmful by inhalation.

CLASSIFICATION F;R11 Xn;R20

#### 4 FIRST-AID MEASURES

##### GENERAL INFORMATION

NOTE! Keep affected person away from heat, sparks and flames! Consult a physician for specific advice.

##### INHALATION

Move the exposed person to fresh air at once. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. If breathing stops, provide artificial respiration. Keep the affected person warm and at rest. Get prompt medical attention.

##### INGESTION

NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Promptly get affected person to drink large volumes of water to dilute the swallowed chemical. Get medical attention immediately! Provide rest, warmth and fresh air. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

##### SKIN CONTACT

Remove affected person from source of contamination. Remove contaminated clothing. Wash the skin immediately with soap and water. Get medical attention if irritation persists after washing.

##### EYE CONTACT

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

#### 5 FIRE-FIGHTING MEASURES

##### EXTINGUISHING MEDIA

Fire can be extinguished using: Water spray, fog or mist. Foam. Dry chemicals, sand, dolomite etc. Carbon dioxide (CO<sub>2</sub>).

##### SPECIAL FIRE FIGHTING PROCEDURES

Avoid breathing fire vapours. Keep run-off water out of sewers and water sources. Dike for water control. Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

**TOLUENE****UNUSUAL FIRE & EXPLOSION HAZARDS**

May explode in a fire. May travel considerable distance to source of ignition and flash back. Vapour explosion and poison hazard indoors, outdoors and in sewers.

**6 ACCIDENTAL RELEASE MEASURES****PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet.

**ENVIRONMENTAL PRECAUTIONS**

Do not discharge into drains, water courses or onto the ground.

**SPILL CLEAN UP METHODS**

Ventilate well, stop flow of gas or liquid if possible. Remove ignition sources. Do not allow chemical to enter confined spaces such as sewers due to explosion risk. Sewers designed to preclude formation of explosive concentrations of vapour may be per Clean-up personnel should use respiratory and/or liquid contact protection. Large Spillages Absorb in vermiculite, dry sand or earth and place into containers. Small Spillages Let evaporate. Keep out of confined spaces because of explosion risk.

**7 HANDLING AND STORAGE****USAGE PRECAUTIONS**

Keep away from heat, sparks and open flame. Avoid spilling, skin and eye contact. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level. Use explosion proof electric equipment.

**STORAGE PRECAUTIONS**

Flammable/combustible - Keep away from oxidisers, heat and flames. Store in tightly closed original container in a cool, dry well-ventilated place. Keep in original container. Ground container and transfer equipment to eliminate static electric sparks.

**STORAGE CLASS**

Flammable liquid storage.

**8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
TOLUENE	OES	50 ppm(Sk)	191 mg/m3(Sk)	150 ppm(Sk)	574 mg/m3(Sk)

**INGREDIENT COMMENTS**

OES = Occupational Exposure Standard.

**PROTECTIVE EQUIPMENT****ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation. Explosion-proof general and local exhaust ventilation.

**RESPIRATORY EQUIPMENT**

No specific recommendation made, but respiratory protection must be used if the general level exceeds the Recommended Occupational Exposure Limit

**HAND PROTECTION**

Use protective gloves made of: Polyvinyl alcohol (PVA). P.T.F.E (Teflon). Viton rubber (fluor rubber).

**EYE PROTECTION**

Use approved safety goggles or face shield. Contact lenses should not be worn when working with this chemical!

**OTHER PROTECTION**

Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

**HYGIENE MEASURES**

DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly with soap & water if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

**9 PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE	Liquid
COLOUR	Colourless

**TOLUENE**

ODOUR	Sweetish Benzene. Pungent		
SOLUBILITY	Insoluble in water Soluble in Organic solvents		
MOL. WEIGHT	92.15	BOILING POINT (°C)	110 760 mm Hg
MELTING POINT (°C)	-95	RELATIVE DENSITY	0.86
VAPOUR DENSITY (air=1)	3.14	VAPOUR PRESSURE	22.0
EVAPORATION RATE	2.24	ODOUR THRESHOLD, LOWER	5.00
FLASH POINT (°C)	~ 4 CC (Closed cup).	AUTO IGNITION TEMPERATURE (°C)	535
FLAMMABILITY LIMIT - LOWER(%)	1.27	FLAMMABILITY LIMIT - UPPER(%)	7.10

**10 STABILITY AND REACTIVITY****STABILITY**

Stable under normal temperature conditions.

**CONDITIONS TO AVOID**

Avoid heat, flames and other sources of ignition. Avoid contact with oxidisers or reducing agents.

**HAZARDOUS DECOMPOSITION PRODUCTS**

Fire creates: Toxic gases/vapours/fumes of: Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

**11 TOXICOLOGICAL INFORMATION**

TOXIC DOSE 1 - LD 50 5000 mg/kg (oral rat)

**GENERAL INFORMATION**

Prolonged and repeated contact with solvents over a long period may lead to permanent health problems.

**INHALATION**

Harmful by inhalation. Exposure to organic solvent vapours in excess of the stated occupational exposure limit may result in adverse effects such as irritation of the mucous membrane and the respiratory system and adverse effects on kidney, liver and central nervous system.

Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

**INGESTION**

Swallowing concentrated chemical may cause severe internal injury. Unconsciousness, possibly death.

**SKIN CONTACT**

Toxic through skin absorption (percutaneous). Prolonged or repeated skin contact with the product may cause removal of natural fats from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. Absorption of organic solvents through the skin can cause some of the same acute and chronic effects as inhalation.

**EYE CONTACT**

Vapour may cause eye irritation. Splashes in the eyes may cause chemical burns.

**HEALTH WARNINGS**

Irritant of eyes and mucous membranes. CNS depressant. Anaesthetic in high concentrations.

**ROUTE OF ENTRY**

Inhalation. Ingestion. Skin and/or eye contact. Skin absorption.

**TARGET ORGANS**

Respiratory system, lungs. Blood. Central nervous system. Eyes. Gastro-intestinal tract. Kidneys. Liver.

**MEDICAL SYMPTOMS**

High concentrations of vapours may irritate respiratory system and lead to headache, fatigue, nausea and vomiting.

**MEDICAL CONSIDERATIONS**

Skin disorders and allergies. Convulsive disorders, CNS problems.

**12 ECOLOGICAL INFORMATION****ECOTOXICITY**

Not regarded as dangerous for the environment.

**13 DISPOSAL CONSIDERATIONS****DISPOSAL METHODS**

Dispose of waste and residues in accordance with local authority requirements.

**14 TRANSPORT INFORMATION**

**TOLUENE**

UK ROAD CLASS	3		
PROPER SHIPPING NAME	TOLUENE		
14 TRANSPORT INFORMATION		UN NO. ROAD	1294
UK ROAD PACK GR.	II	ADR CLASS NO.	3
ADR CLASS	Class 3: Flammable liquids.	ADR PACK GROUP	3(b)
HAZARD No. (ADR)	33	ADR LABEL NO.	3
HAZCHEM CODE	3YE	CEPIC TEC(R) NO.	30G30
RID CLASS NO.	3	RID PACK GROUP	3(b)
UN NO. SEA	1294	IMDG CLASS	3
IMDG PAGE NO.	3230	IMDG PACK GR.	II
EMS	3-07	MFAG	See Guide
MARINE POLLUTANT	No.	UN NO. AIR	1294
ICAO CLASS	3	AIR PACK GR.	II

**15 REGULATORY INFORMATION**

## LABELLING



Harmful



Highly Flammable

## RISK PHRASES

R11	Highly flammable.
R20	Harmful by inhalation.

## SAFETY PHRASES

S2	Keep out of the reach of children
S16	Keep away from sources of ignition - No smoking.
S25	Avoid contact with eyes.
S29	Do not empty into drains.
S33	Take precautionary measures against static discharges.

## STATUTORY INSTRUMENTS

Chemicals (Hazard Information and Packaging) Regulations. Control of Substances Hazardous to Health.

## APPROVED CODE OF PRACTICE

Classification and Labelling of Substances and Preparations Dangerous for Supply.

## GUIDANCE NOTES

Occupational Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(G)37. CHIP for everyone HSG(108).

**16 OTHER INFORMATION**

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