

Toluene Cas No. : 108-88-3

Toluene is an Aromatic chemical produced by Petroleum Refineries/ Petrochemical Plants. Steel plants produce Toluene from the by-product recovery plant where aromatics are recovered from the coke oven gas.

Active Pharmaceuticals Ingredients Manufacturers

Taj Pharmaceuticals Ltd.

Toluene

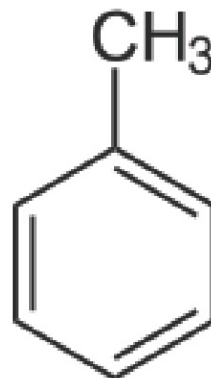
CAS No. : 108-88-3

Systematic (IUPAC) name

Methylbenzene; Toluol; Phenylmethane

CAS No.: 108-88-3

Molecular Weight: 92.14

Chemical Formula: C₆H₅-CH₃Molecular formula C₇H₈ (C₆H₅CH₃)

Toluene



DANGER

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes damage to central nervous system if inhaled. Causes damage to central nervous system, liver and kidneys through prolonged or repeated exposure. May damage fertility of the unborn child. Harmful if inhaled. May be harmful if swallowed. Causes skin irritation. May cause respiratory irritation. May cause drowsiness and dizziness. Toxic to aquatic life.



Keep away from heat, sparks and flame — No smoking. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use only non-sparking tools. Do not breathe vapours. Wear protective gloves and eye/face protection. Use only in a well-ventilated area. Keep container closed when not in use. Store in a cool, well-ventilated place away from heat and ignition sources. Store locked up in a closed container.

IN CASE OF FIRE: Use carbon dioxide, dry chemicals or appropriate foam.

FIRST AID:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. IF ON SKIN: Remove/take off immediately all contaminated clothing. Wash with plenty of soap and water. Get medical advice/attention. IF INHALED: Call a POISON CENTER or doctor/physician.



Appearance

Clear colorless, liquid

Density 0.8669 g/mL, liquid

Melting point - 93 °C

Boiling point 110.6 °C

Solubility in water 0.47 g/l (20-25°C)

Viscosity 0.590 cP at 20°C

Structure Dipole moment 0.36 D

Hazards MSDS External MSDS



Toluene reacts as a normal aromatic hydrocarbon towards electrophilic aromatic substitution. The methyl group makes it around 25 times more reactive than benzene in such reactions. It undergoes smooth sulfonation to give p-toluenesulfonic acid, and chlorination by Cl₂ in the presence of FeCl₃ to give ortho and para isomers of chlorotoluene.

It undergoes nitration to give ortho and para nitrotoluene isomers, but if heated it can give dinitrotoluene and ultimately the explosive trinitrotoluene

With other reagents the methyl side chain in toluene may react, undergoing oxidation. Reaction with potassium permanganate leads to benzoic acid, whereas reaction with chromyl chloride leads to benzaldehyde (Étard reaction).



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Halogenation can be performed under free radical conditions. For example, N-bromosuccinimide (NBS) heated with toluene in the presence of AIBN leads to benzyl bromide.

Catalytic hydrogenation of toluene to methylcyclohexane requires a high pressure of hydrogen to go to completion, because of the stability of the aromatic system. pKa is approximately 45.

Usage:

Toluene is an Aromatic chemical produced by Petroleum Refineries/ Petrochemical Plants. Steel plants produce Toluene from the by-product recovery plant where aromatics are recovered from the coke oven gas.

Toluene is used mainly in production of various downstream petrochemicals, pesticides, explosives (Tri-Nitro Toluene), Adhesives, Saccharins, etc. Besides Toluene finds a major end-use in paint industry as thinner.

Toluene is also used as solvents in various chemical industries.

Toluene is a parent substance in the manufacture of benzene derivatives, caprolactam, saccharine, pharmaceuticals, dyes, perfumes, TNT and detergents. It is used in fuels (anti-knock additive) and as a solvent for paints and coatings, rubber, resins, thinners in nitrocellulose lacquers and adhesives.

It serves as a raw material in the manufacture of phenol (predominantly in Western Europe), benzene, cresol (chiefly Japan) and a wide range of other substances.

Toluene chemical is also known as phenyl-methane or methyl-benzene.

This chemical is transparent like pure water but not soluble in water. This has a smell like paint thinners and redolent of the sweet fragrance alike benzene compound.

Toluene chemicals belong to aromatic hydrocarbon group and are widely used as solvents and industrial feedstock. Further, these can be used as inhalant drugs for their intoxicating properties.

Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles.

Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation.

Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.



Taj Group of Companies

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TAJ PHARMACEUTICALS LIMITED

“Working for human race”



PRODUCT IDENTIFIER (CAS # 108-88-3)		TOLUENE		REFERENCE TO123421
HEALTH	2	WARNING ! Flammable solid. May ignite in moist air. Reacts violently with water. Corrosive material. Causes burns to the skin and eyes. May cause severe burns of mouth and throat. May be fatal if swallowed. May cause lung injury - effects may be delayed. May cause sensitization by skin contact.		
FLAMMABILITY	3	PRECAUTION: Keep away from heat, sparks and flame. Avoid contact with water. Keep away from incompatibles. Use with adequate ventilation. Keep container tightly closed. Handle in accordance with good industrial hygiene and safety practices. Do not swallow. Do not breathe dust. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Wear protective goggles, full face shield, impervious boots, gloves and apron.		
REACTIVITY	0	FIRST AID: If inhaled, remove from contaminated atmosphere. For skin contact, flush with water for at least 15 minutes, while removing contaminated clothing. Launder clothing before reuse. For eye contact, flush with running water for at least 20 minutes. If ingested, do not induce vomiting. Have victim rinse mouth with water, then let victim drink water or milk. Never give anything by mouth if victim is unconscious. For all cases, obtain medical attention immediately.		
REFER TO SAFETY DATA SHEET				
PERSONAL PROTECTIVE EQUIPMENT		GHS HAZARD SYMBOLS		SHIPPING DESCRIPTION
				TOLUENE UN 1294



Ingredient	CAS No	Percent	Hazardous
Toluene	108-88-3	100%	Yes

Note /Government Notification: These chemicals are designated as those that are used in the manufacture of the controlled substances and are important to the manufacture of the substances. For any (Control Substance) products Import and Export *** subjected to your country government laws /control substance ACT.

Information: The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers. Also that the information on the PTCL Safety web site, where this page was hosted, has been copied onto many other sites, often without permission. If you have any doubts about the veracity of the information that you are viewing, or have any queries, please check the URL that your web browser displays for this page. If the URL begins "www.tajapi.com/www/Denatonium Benzoate.htm/" the page is maintained by the Safety Officer in Physical Chemistry at Oxford University. If not, this page is a copy made by some other person and we have no responsibility for it.

The Controlled Substances Act (CSA) was enacted into law by the Congress of the United States as Title II of the Comprehensive Drug Abuse Prevention and Control Act of 1970.[1] The CSA is the federal U.S. drug policy under which the manufacture, importation, possession, use and distribution of certain substances is regulated. The Act also served as the national implementing legislation for the Single Convention on Narcotic Drugs

This document plus the full buyer/ prescribing information, prepared for health professionals can be found at:

<http://www.tajapi.com>

or by contacting the sponsor, Taj Pharmaceuticals Limited., at:
 91 022 30601000.

This leaflet was prepared by
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