



# SAFETY DATA SHEET

## TOLUENE

### 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product name: TOLUENE

Recommended use: Chemical for industrial

Manufacturer/Supplier: **MODERN CHEMICAL CO.,LTD.**  
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### 2. HAZARDS IDENTIFICATION

#### Label elements

Pictogram



Signal word

Danger

#### Hazard statement(s)

- 1.) Highly flammable liquid and vapour.
- 2.) Causes skin irritation.
- 3.) May be fatal if swallowed and enters airways.
- 4.) May cause drowsiness or dizziness.
- 5.) Toxic to aquatic life with long lasting effects.
- 6.) May damage the unborn child. Suspected of damaging fertility.

#### Precautionary statement(s)

- 1.) Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- 2.) Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.



- 3.) Avoid release to the environment.
- 4.) IF SWALLOWED: call a doctor/physician. Do NOT induce vomiting.
- 5.) IF IN EYES: Rinse cautiously with water for 15 minutes.
- 6.) IF ON SKIN Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonym:** Methylbenzene, Monomethyl -benzene

Ingredients	% (w/w)	CAS NO.
TOLUENE	100	108-88-3

### 4. FIRST AID MEASURES

**General advice:**

Show this safety data sheet to the doctor in attendance.

**Inhalation:**

Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/ apparatus.

**Skin contact:**

Remove contaminated clothing and wash affected skin with soap and water. Obtain medical attention. If signs of poisoning appear, treat as for inhalation. Wash contaminated clothing before reuse. Contaminated combustible material, e.g. clothing ignites more readily and burns fiercely.

**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.** Keep patient warm, In case of shortness of breath, give oxygen. Apply respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus. Obtain medical attention. Never give anything by mouth to an unconscious person.

### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:**

Use water spray, alcohol – resistant foam, dry chemical or carbon dioxide.



### **Unsuitable Extinguishing Media:**

Do not use a solid water stream as it may scatter and spread fire.

### **Specific hazards arising from Chemicals:**

Vapors may form explosive mixture with air. Flash back possible over considerable distance.

### **Special protective equipment for fire-fighters:**

Wear self contained breathing apparatus for fighting if necessary.

## **6. ACCIDENTAL RELEASE MEASURES**

### **Personal precautions:**

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Remove all sources of ignition. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

### **Environmental precautions:**

Contain or absorb leaking liquid with sand or earth, consult an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil or vegetation, advise police.

### **Methods and Material for Containment and Clean Up:**

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silicagel). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose promptly.

## **7. HANDLING AND STORAGE**

### **Precautions for Safe Handling & Product Transfer:**

Keep container tightly closed. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not empty into drains.

### **Conditions for Safe Storage & Unsuitable Materials:**

Keep tightly closed at room temperature in a dry, cool and well ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible material. Store in original container. Electrical equipment should be protected to the appropriate standard.



## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Occupational Exposure Limits:</b>	OEL 50 ppm (191 mg/m <sup>3</sup> ), STEL 574 ppm (150 mg/m <sup>3</sup> ), TWA 25 ppm (94 mg/m <sup>3</sup> )
<b>Appropriate Engineering Controls:</b>	The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.
<b>Individual Protection Measures</b>	
<b>Respiratory protection:</b>	In case of insufficient ventilation, wear suitable respiratory equipment required when vapor/aerosols are generated: Filter A (acc. To DIN 3181) for vapors of organic compounds.
<b>Hand protection:</b>	Handle with gloves. In case full contact wear gloves from viton material, in splash contact wear gloves from nitrile rubber material. The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.
<b>Eye protection:</b>	Goggles giving complete protection to eyes.
<b>Skin and body protections:</b>	Chemical resistant apron / flame retardant antistatic protective clothing, heavy duty work shoes.
<b>Hygiene measures:</b>	Ventilation hoods and fans required when working with organic solvents or in hot melt applications. Keep working clothes separately. Keep away from food, drink and animal feeding stuffs.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Form, Color and Odor :</b> liquid, colorless, Characteristic	<b>Evaporation rate :</b> 240 (n-Bu Acetate = 100)
<b>Melting Point :</b> -126 °C	<b>Specific gravity :</b> 0.869-0.873 g/cm <sup>3</sup> at 15.6 °C
<b>pH :</b> N/A	<b>Solubility in water :</b> Not Soluble
<b>Boiling point :</b> 110.5-110.7 °C	<b>Viscosity :</b> 0.59 mPa.sec
<b>Vapour pressure :</b> 22 mbar at 20 °C	<b>Vapour density :</b> 3.2 g/l
<b>Lower explosive limits:</b> 1.2 % Vol	<b>Upper explosive limits:</b> 7.1 % Vol
<b>Auto-ignition temperature :</b> 535 °C	<b>Flash point:</b> 4°C
<b>Odour threshold:</b> 1.74 ppm	<b>Flammability (solid, gas):</b> no data available
<b>Decomposition temperature:</b> N/A	<b>Solubility in other solvents:</b> Soluble in hydrocarbons and acetone
<b>n-octanol/water partition coefficient (log P<sub>ow</sub>):</b> 2.65	



## 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable under recommended storage conditions.
<b>Reactions:</b>	Heat sensitive. Unsuitable working materials: Various plastic, rubber. Explosible with air in a vaporous/gaseous state.
<b>Possibility of Hazardous Reactions:</b>	no data available
<b>Conditions to avoid:</b>	Heat, flames and sparks.
<b>Materials to avoid:</b>	Halogen compounds, nitric acid, nitrogen oxide, organic nitro compounds, oxidizing agent, uranium hexafluoride, sulfur, fuming sulfuric acid
<b>Hazardous decomposition products:</b>	Carbon monoxides, Carbon dioxides, (Hazardous decomposition products from under fire condition).

## 11. TOXICOLOGICAL INFORMATION

<b>Acute toxicity:</b>	LD50 Oral – rat – 5000 mg/kg. LC50 Inhalation- rat – 28.1 mg/l/4h LD50 Dermal– rabbit– 12124 mg/kg
<b>Sensitization:</b>	After inhalation: Irritation symptoms in the respiratory tract. Headache, drowsiness, dizziness, absorption. After skin contact: Slight irritation. Degreasing effect on the skin, possibly followed by secondary inflammation. Danger of skin absorption. After eyes contact; Slight irritation, mucosal irritations. After swallowing : Nausea, Vomiting.: Risk of aspiration upon vomiting, absorption. After uptake of large quantities; pneumonia, respiratory paralysis. After long term exposure to the chemical: dermatitis. Systemic effects; after absorption of large quantities: CNS disorders, inebriation, spasms, unconsciousness, respiratory arrest, cardiovascular failure, death
<b>Chronic toxicity:</b>	Mutagenicity; Ames cell test is negative. Bacterial mutagenicity; mammal cell test is negative (in vitro)
<b>Fuether toxicological information</b>	The product should be handled with care usual when dealing with chemical



## 12. ECOLOGICAL INFORMATION

### Toxicity

Toxicity to fish: LC50 - *Onchorhynchus mykiss* -5.8 mg/l- 96 h

Toxicity to daphnia and other aquatic invertebrates:

EC50 - *Daphnia magna* -6 mg/l/48h

Toxicity to algae: IC5 - *Pseudokirchneriella subcapitata* - 12 mg/l/72h

Toxicity to Bacterial: IC50 - *Photobacterium phosphoreum* - 20 mg/l/30 min

**Biodegradability Remarks:** According to the results of tests of biodegradability this product is considered as being readily biodegradable.

**Bioaccumulative Potential:** No data available

**Mobility:** No data available

**Affected in any other way:** No data available

## 13. DISPOSAL CONSIDERATIONS

**Material Disposal:** There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

**Container Disposal:** Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

## 14. TRANSPORT INFORMATION

### ADR/ADNR

UN-No: 1294

Class: 3

Packing group: II

Proper shipping group: TOLUENE

### IMGD

UN-No: 1294

Class: 3

Packing group : II



EMS: F-E S-D

Marine pollutant : No

Proper shipping group: TOLUENE

#### IATA

UN-No: 1294

Class: 3

Packing group: II

Proper shipping group: TOLUENE

### 15. REGULATORY INFORMATION

#### GHS-Labeling

##### Hazard statement (s):

H225: Highly flammable liquid and vapor.

H304: May be fatal if swallowed and enters airways.

H361: Suspected of damaging fertility or the unborn child.

H373: May cause damage to organs through prolonged or repeated exposure.

H315: Causes skin irritation.

H336: May cause drowsiness or dizziness

##### Precautionary statement(s)

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P240: Ground/bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilating/lighting equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P260: Do not breathe vapors.

P264: Wash hand thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P281: Use personal protective equipment as required. P362: Take off contaminated clothing and wash before reuse.

P303 + P361 + P353: IF ON SKIN (or hair):Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P302 + P352: IF ON SKIN: WASH with plenty of soap and water.

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P331: Do NOT induce vomiting.



P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P308 + P313: IF exposed or concerned: Get medical advice/attention.

P314: Get medical advice/attention if you feel unwell.

P332 + P313: If skin irritation occurs: Get medical advice/attention.

P370 + P378: In case of fire: Use carbon dioxide, dry chemical or foam for extinction.

P405: Store locked up.

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

P403 + P235: Store in a well-ventilated place. Keep cool

#### **Labelling according to EC Directives:**

##### **R - phrase(s):**

R11: highly Flammable.

R38: Irritating to skin.

R48/20: Harmful : dangerous damage to health by prolonged exposure through inhalation.

R 63: Possible risk of harm to the unborn child.

R65: Harmful: may cause lung damage if swallowed.

R67: Vapours may cause drowsiness and dizziness.

##### **S - phrase(s):**

S36/37: Wear suitable protective clothing and gloves.

S46 : If swallowed, seek medical 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**

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