

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

**Product Name** : **Toluene**  
**Product Uses** : Industrial solvent

**Supplier** : **S P K Chemical Co.,Ltd.**  
42 Soi Charoemprakit Rama 9 Soi 19,  
NongBon, Pravat, Bangkok 10250

**Telephone** : +66 2 747 0580-1  
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## 2 HAZARDS IDENTIFICATION

**GHS Classification** : FLAMMABLE LIQUIDS, Category 2  
SKIN CORROSION/IRRITATION, Category 2  
TOXIC TO REPRODUCTION, Category 2  
Specific target organ toxicity-single exposure, Category 3  
Narcotic effects.  
Specific target organ toxicity-repeated exposure, Category 2  
Auditory system.  
ASPIRATION HAZARD, Category 1  
AQUATIC TOXICITY (ACUTE), Category 2

**GHS label elements**  
**Symbol(s)**



**Signal word** : **Danger**

**GHS Hazard Statements**

Physical Hazards : H225 Highly flammable liquid and vapor.  
Health Hazards : H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H336 May cause drowsiness or dizziness.  
H361 Suspected to damaging fertility or the unborn child.  
H373 May cause damage to organs or organ system.  
Environmental Hazards : H401 Toxic to aquatic life.

**GHS Precautionary Statements**

Prevention : P210 Keep away from heat/sparks/open flames/hot surfaces.  
No smoking.  
P233 Keep container tightly closed.  
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.
	P280 Wear protective gloves/protective clothing/eye protection/Protection/face protection.
	P264 Wash hands thoroughly after handling.
	P201 Obtain special instructions before use.
	P202 Do not handle until all safety precautions have been read and understood.
	P281 Use personal protective equipment as required.
	P261 Avoid breathing dust/fume/mist/vapors/spray.
	P271 Use only outdoors or in a well-ventilated area.
	P260 Do not breathe dust/fume/mist/vapors/spray.
	P273 Avoid release to the environment.
Response	: P303+P361+P353 IF ON SKIN (or hair) : Remove/take off Immediately all contaminated clothing. Rinse skin with water/shower. P370+P378 In case of fire : Use appropriate media for extinction. P302+P352 IF ON SKIN : Wash with plenty of soap and water. P332+P313 : If skin irritation occurs : Get medical advice/attention. P362 Take off contaminated clothing and wash before reuse. P308+P313 If exposed or concerned, get medical advice/attention. P304+P340 If INHALED : Remove to fresh air and keep at rest in a position comfortable for breathing. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P314 Get medical advice/attention if you fell unwell. P301+P310 : IF SWALLOWED : Immediately call a doctor/physician. P331 Do NOT induce vomiting.
Storage	: P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up. P233 Keep Container tightly closed.
Disposal	: P501 : Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and nation regulations.

### 3 COMPOSITION/INFORMATION ON INGREDIENTS

<b>Chemical Identity</b>	: Benzene, methyl
<b>Synonyms</b>	: Methyl benzol , Phenyl methane , Toluol
<b>CAS No.</b>	: 108-88-3
<b>EINECS No.</b>	: 203-625-9
<b>Hazard Class (category)</b>	: Flam. Liq (2) Repr. (2) Asp.Tox (1) STOT RE. (2) Skin Irrit. (2) STOT SE. (3)
<b>Hazard statement</b>	: H225 , H361d , H304 , H373 , H315 , H336
<b>Conc.</b>	: 100%

#### 4 FIRST AID MEASURES

<b>General Information</b>	: Keep victim clam. Obtain medical treatment immediately.
<b>Inhalation</b>	: Do NOT DELAY. Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
<b>Skin Contact</b>	: Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to nearest medical facility for additional treatment.
<b>Eye Contact</b>	: Immediately flush eye with large amounts of water for at least 15 minutes While holding eyelids open. Transport to the nearest medical facility for additional treatment.
<b>Ingestion</b>	: If swallowed, do not induce vomiting. Transport to the nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101°F (38.3 °C), shortness of breath, chest congestion or continued coughing or wheezing. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Give nothing by mouth. Do not induce vomiting.
<b>Notes to physician</b>	
<b>Most important symptoms / effects, acute, and delayed</b>	: Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. The onset of respiratory symptoms may be delayed for several hours after exposure. Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death. Auditory system effects may include temporary hearing loss and/or ringing in the ears.
<b>Immediate medical attention ,special treatment</b>	: Potential for chemical pneumonitis. Potential for cardiac sensitization, particularly in abuse situations. Hypoxia or negative inotropes may enhance these effects. Consider: oxygen therapy. Call a doctor or poison control center for guidance.

#### 5 FIRE FIGHTING MEASURES

<b>Specific Hazards</b>	: The vapor is heavier than air, spreads along the ground and distant ignition is possible. Will float and can be reignited on surface water. Carbon monoxide may be evolved if incomplete combustion occurs.
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- Extinguishing Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- Protective Equipment for Fire fighters** : Wear full protective clothing and self-contained breathing apparatus.
- Other advice** : Keep adjacent containers cool by spraying with water.

## 6 ACCIDENTAL RELEASE MEASURES

- Personal Precautions, Protective Equipment and Emergency Procedures** : Isolate hazard area and deny entry to unnecessary or unprotected personnel. Stay upwind and keep out of low areas.
- Environmental Precaution** : Shut off leaks, if possible without personal risks.  
Remove all possible sources of ignition in the surrounding area.  
Use appropriate containment(of product and fire fighting water) to avoid environmental contamination.  
Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.  
Attempt to disperse the vapor or to direct its flow to a safe location for example by using fog sprays.  
Take precautionary measures against static discharge.  
Ensure electrical continuity by bonding and grounding all equipment.  
Ventilate contaminated area thoroughly.
- Methods and material for containment and clean up** : For large liquid spills(>1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal.  
Do not flush away residues with water.  
Retain as contaminated waste.  
Allow residue to evaporate or soak up with an appropriate absorbent material and dispose of safely.  
Remove contaminated soil and dispose of safely.  
For small liquid spills (<1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal.  
Allow residues to evaporate or soak up with an appropriate material and dispose of safely.  
Remove contaminated soil and dispose of safely.
- Additional Advice** : Notify authorities if any exposure to the general public or the environmental occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained.  
The vapor is heavier than air, spreads along the ground and distant ignition is possible. Vapor may form an explosive mixture with air.  
See Chapter 13 for information on disposal.

## 7 HANDLING AND STORAGE

- General Precaution** : Avoid breathing vapors or contact with material. Only use in well ventilated areas. Wash thoroughly after handling.  
On guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Use the information in

	<p>this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.</p>
<b>Precautions for safe Handling</b>	<p>: Avoid inhaling vapor and/or mists. Avoid contact with skin, eyes, and clothing. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Electrostatic charges may be generated during pumping. Electrostatic discharge may fire cause fire. Ensure electrically continuity by bonding and grounding (earthling) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<math>\leq 1</math> m/sec until fill pipe submerged to twice its diameter, then <math>\leq 7</math> m/sec). Avoid splash filling. DO NOT use compressed air for filling, discharging, or handling operations. Handling Temperature: Ambient.</p>
<b>Conditions for safe Storage</b>	<p>: Bulk storage tanks should be disked. Vapors from tanks should not be released to atmosphere. Breathing losses during storage be controlled by a suitable vapor treatment system. Must be stored in a disked well ventilated area, away from sunlight, ignition sources and other sources of heat. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not harmful or toxic to man or to the environment. The vapor is heavier than air. Beware of accumulation in pits and confined spaces. Storage Temperature : Ambient.</p>
<b>Product Transfer</b>	<p>: Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthling) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<math>\leq 1</math> m/sec until fill pipe submerged to twice its diameter, than <math>\leq 7</math> m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Keep containers closed when not in use. Do not use compressed air for filling, discharging or handling.</p>
<b>Recommended Materials</b>	<p>: For containers, or container linings use mild steel, stainless steel.</p>
<b>Unsuitable Materials</b>	<p>: Natural, butyl, neoprene or nitrite rubbers.</p>
<b>Container Advice</b>	<p>: Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.</p>
<b>Other Advice</b>	<p>: Ensure that all local regulations regarding handling and storage facilities are followed.</p>

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Limits

Material	Source	Type	ppm
Toluene	ACGIH	TWA	20 ppm

<b>Hazard Designation</b>	: Not classifiable as a human carcinogen
<b>Individual protection Measures</b>	: Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

- Respiratory Protection** : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards made from the following materials : rubber gloves, Nature rubber gloves, Neoprene rubber gloves, Nitrite rubber gloves.
- Eye Protection** : Chemical splash goggles
- Body Protection** : Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Colorless Liquid.
- Odour** : Aromatic
- Odour threshold** : 1.74 ppm
- pH** : Not applicable
- Boiling point** : Typical 110-111°C
- Melting / freezing point** : Typical -95°C
- Flash point** : Typical 4°C
- Density** : Typical 871 kg/m<sup>3</sup> at 15°C
- Water solubility** : 0.515 kg/m<sup>3</sup>
- Vapour density (air=1)** : 3.1

## 10 STABILITY AND REACTIVITY

- Chemical stability** : Stable under normal conditions of use.  
Reacts violently with strong oxidizing agents.
- Conditions to Avoid** : Avoid heat, sparks, open flames and other ignition sources.  
Prevent vapor accumulation.
- Incompatible materials** : Strong oxidizing agents.
- Hazardous Decomposition products** : Thermal decomposition is highly dependent on conditions.
- Sensitivity to static Discharge** : Yes

## 11 TOXICOLOGICAL INFORMATION

- Acute Toxicity**
- Acute Oral Toxicity** : Low toxicity: LD50>5000 mg/kg, Rat
- Acute Dermal Toxicity** : Low toxicity: LD50>5000 mg/kg, Rabbit
- Acute Inhalation Toxicity** : Expected to be low toxicity if inhaled.  
High concentration may cause central nervous system depression resulting in headache, dizziness and nausea.
- Skin corrosion/irritation** : Cause skin irritation.
- Serious eye damage/irritations** : slightly irritation to the eye.
- Respiratory Irritation** : Cause respiratory irritation (vapors)

<b>Respiratory or skin Sensitization</b>	: Not expected to be skin sensitizer.
<b>Aspiration hazard</b>	: Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.
<b>Reproductive and Developmental Toxicity</b>	: Suspected of damaging fertility or the unborn child. Does not impair fertility.

## 12 ECOLOGICAL INFORMATION

<b>Acute Toxicity</b>	
<b>Fish</b>	: Toxic: LL/ EL/ IL50 1-10 mg/l
<b>Aquatic Invertebrates</b>	: Toxic: LL/ EL/ IL50 1-10 mg/l
<b>Mobility</b>	: Floats on water. If product enters soil, one or more constituents will be mobile and may contaminate groundwater.
<b>Persistence/ degradability</b>	: Readily biodegradable. Oxidizes rapidly by photo-chemical reactions in air.
<b>Bio accumulative potential</b>	: Does not bio accumulate significantly.

## 13 DISPOSAL CONSIDERATION

<b>Material Disposal</b>	: Recover or recycle if possible. It is responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulation. Do not dispose into the environmental, in drains or in water courses. Waste product should not be allowed to contaminate soil or water.
<b>Container Disposal</b>	: Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not, puncture, cut, or weld uncleaned drums. Send to drum recovery or metal reclaimer.
<b>Local Legislation</b>	: Disposal should be in accordance with applicable regional, national, and local laws and regulations.

## 14 TRANSPORT INFORMATION

### Land (as per ADR classification) Regulated

Class	: 3
Packing Group	: II
Hazard Identification no.	: 33
UN No.	: 1294
Danger label (primary risk)	: 3
Proper shipping name	: Toluene
Environmental Hazardous	: No

### IMDG

Identification number	: UN 1294
Proper shipping name	: TOLUENE

Class/ Division : 3  
Packing group : II  
Marine pollutant : No

**IATA (Country variation may apply)**

UN No. : 1294  
Proper shipping name : Toluene  
Class/ Division : 3  
Packing group : III

**Sea (Annex II of MARPOL 73/78 and the IBC code)**

Pollution category : Y  
Ship Type : 3  
Product Name : Toluene  
Special Precaution : Refer to Chapter7 , Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

**15 REGULATORY INFORMATION**

The regulatory information is not intended to be comprehensive. Other regulations may apply to material.

**Chemical Inventory Status**

AICS : Listed.  
DSL : Listed.  
INV (CN) : Listed.  
ENCS (JP) : Listed. (3)-21  
TSCA : Listed.  
EINECS : Listed. 203-625-9  
KECI (KR) : Listed. 97-1-298  
KECI (KR) : Listed. KE-33936  
PICCS (PH) : Listed.

**16 Other information**

**MSDS Effective date** : **1-Jan-19**

**Uses and Restrictions** : Raw material for use in the chemical industry.  
Use only in industrial processes.

**MSDS Distribution** : The information in this document should be made available to all who may handle the product.

**Disclaimer** : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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