SAFETY DATA SHEET (SDS)
TOLUENE

1. Identification

SDS Record Number	:	PCS95005	
Date of SDS	:	1 October 2025	
Identity of the substance	:	Toluene	
Product Description	:	Aromatic hydrocarbon.	
Other names/synonyms	:	Methyl benzene, Methyl benzol, Phenyl methane, Toluol	
Name of the supplier	:	PCS Pte. Ltd.	
Recommended uses	:	Solvent, diluent, chemical feedstock, or fuel.	
Contact detail of the supplier	:	100 Ayer Merbau Road, Singapore 628277 +65 68672102	
24-Hour Emergency contact	:	Asia Pacific	+65 3158 1074 (Singapore)
		China	400 120 6011
		Europe, Israel & America	+44 (0) 1235 239 670 (UK)
		Middle East & Africa	+44 (0) 1235 239 671 (UK)

2. Hazards Identification

GHS Classification:

Flammable Liquid:	Category 2
Acute Toxicity:	
Inhalation:	Category 4
Skin Corrosion/Irritation:	Category 2
Serious Eye Damage/Irritation:	Category 2
Reproductive Toxicity:	Category 1A
STOT (Single Exposure):	Category 1 (Central Nervous System)
	Category 3 (Respiratory Tract Irritation, Narcotic Effects)
STOT (Repeated Exposure):	Category 1 (Central Nervous System, Kidneys)
Aspiration hazard:	Category 1

GHS label elements including precautionary statements
Pictograms:

Signal Word: Danger

Hazard Statements

- Highly flammable liquid and vapour
- Harmful if inhaled
- Causes skin irritation and eye irritation
- May damage fertility or the unborn child
- Causes damage to Central Nervous System
- May cause respiratory irritation
- May cause drowsiness or dizziness
- Causes damage to Central Nervous System, kidney through prolonged or repeated exposure
- May be fatal if swallowed and enters airways

Precautionary Statements

Prevention

- Keep container tightly closed.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Wear protective gloves/ eye protection/face protection.
- Ground/Bond container and receiving equipment
- Use explosion-proof electrical/ventilating/lighting equipment.
- Take action to prevent static discharges.
- Use only non-sparking tools.
- Wash thoroughly after handling.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Do not eat, drink or smoke when using this product.
- Avoid breathing dust/fume/gas/mist/vapours/spray.
- Use only outdoors or in a well-ventilated area.

Response

- IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/ shower.
- In case of fire: Use appropriate media to extinguish.
- Call a POISON CENTER/doctor/physician if you feel unwell.
- IF INHALED: Remove victim to fresh air and keep comfortable for breathing.
- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation occurs: Get medical advice/attention.
- Take off contaminated clothing and wash before re-use.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists/exposed or concerned: Get medical advice/attention.
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

Storage

- Store in awell-ventilated place. Keep cool.
- Store locked up.

Disposal

- Dispose of the contents/container in accordance to the local mandatory rules and regulations.

3. Composition/Information On Ingredients

Chemical identification : Toluene
Common name(s) / synonym(s) : Methyl benzene, Methyl benzol,Phenyl methane, Toluol
CAS number / EC number : 108-88-3 / 203-625-9

Chemical Identification	Concentration
Toluene	> 98 %

4. First-Aid Measures

Eye Contact:
If this chemical contacts the eyes, remove contact lenses immediately if present and easy to perform, then irrigate (wash) immediately with large amounts of water, occasionally lifting the lower and upper lids. Seek medical attention immediately.

Skin Contact:
If this chemical contacts the skin, remove all contaminated clothing and flush affected skin with water immediately. Gently wash the contaminated skin with soap and water. If irritation or redness persists after washing, seek medical attention immediately.

Inhalation:
If a person inhales large amounts of this chemical, move the exposed person to fresh air immediately and provide respiratory support. If breathing has stopped, perform artificial resuscitation. Keep the affected person warm and at rest. Seek medical attention immediately.

Ingestion:
If this chemical has been swallowed, DO NOT induce vomiting. Seek medical attention immediately. If person is convulsing or unconscious, do not give anything by mouth. Ensure airway is open and lay person on his/her side with head lower than body.

5. Fire-Fighting Measures

Recommended Fire Extinguishing Agents:
Small fires:
- Dry chemical, CO2, water spray or regular foam.

Large fires:
- Water spray, fog or regular foam.
- Do not use straight streams.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Always stay away from tanks engulfed in fire.
- Use water spray to cool fire exposed surfaces and to protect personnel.
- Shut off fuel to fire if possible to do so without hazard.
- If a leak or spill has not ignited, use water spray to disperse the vapours.
- Either allow fire to burn out under controlled conditions or extinguish with foam or dry chemical.
- Try to cover liquid spills with foam.
- Avoid spraying water directly into storage containers due to danger of boilover.

Hazardous Combustion Products:

- Fumes, smoke and carbon monoxide.
- Flammable and volatile liquid: may release invisible vapours that form flammable mixtures at or above the flash point. Toxic gases will form upon combustion.
- Vapor or liquid may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

Special Protective Equipment and Precautions for Fire Fighters:

- A self-contained breathing apparatus (SCBA) is recommended for indoor fires and significant outdoor fires. For small outdoor fires which may easily be extinguished with a portable fire extinguisher, SCBA is optional.
- Wear respiratory and eye protection.

Caution: This chemical has a very low flash point: Use of water spray when fighting fire may be inefficient.

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6. Accidental Release Measures

Call Emergency Response

- Contact Telephone Number on Shipping Paper First. If Shipping Paper is not available or no answer, refer to appropriate telephone number in Section 1.
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorised personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.
- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapour; but may not prevent ignition in closed spaces.

Land Spill:

- Eliminate source of ignition.
- Prevent additional discharge of material, if possible to do so without hazard.
- Prevent spills from entering sewers, watercourses or low areas.
- Contain spilled liquid with sand or earth.
- Do not use combustible materials such as sawdust.
- Recover by pumping (use an explosion proof motor or hand pump), or by using a suitable absorbent.

Water Spill:

- Eliminate sources of ignition.
- Warn occupants and shipping in downwind areas of fire and explosion hazard and request all to stay clear.
- Remove from surface by skimming or with suitable absorbents.
- If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in unconfined waters.

Evacuation (Large Spill):

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Evacuation (Fire):

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.
- Evacuate danger area in large spill
- Consult an expert in large spill. Remove all ignition sources.
- Ensure adequate ventilation.
- Collect leaking liquid in sealable containers.
- Absorb remaining liquid in sand or inert absorbent and remove to safe place.

7. Handling And Storage

Precautions for Safe Handling:

- Handle and open containers with care. Otherwise, keep containers closed.
- Do not handle or store near an open flame, heat, or other sources of ignition.
- Protect material from direct sunlight.
- Use proper earthing (grounding) procedures. Material will accumulate static charges, which may cause an electric spark (ignition source).
- Do not reuse empty containers without commercial cleaning or reconditioning, as they may contain product residue.
- Do not pressurise, cut, heat, or weld containers.

Storage:

- Store in a cool, well-ventilated place away from incompatible materials.
- Storage must be fireproof and separated from strong oxidants.

8. Exposure Controls / Personal Protection

Control Parameters/ Exposure Limits

Toluene (CAS: 108-88-3)

Permissible Exposure Level (Long Term) in Singapore: 50ppm (188mg/m^3)

TLV: 20 ppm (75mg/m^3) as TWA; (ACGIH).

PEL: 200 ppm as TWA (OSHA Z-2)

Appropriate Engineering Controls

- The use of local exhaust ventilation is recommended to control emissions near the source.
- Laboratory samples should be handled in a fume hood.
- Provide mechanical ventilation of confined spaces.
- Use explosion-proof ventilation equipment.

Personal Protective Equipment (PPE)
Personal Protection:

Skin Protection: Wear long sleeves, and chemical resistant gloves to prevent skin contact. Wash skin immediately if contaminated. Recommended Protective Clothing (NIOSH): 8 hr: PVA, Teflon, Viton, PE/EVAL, Barricade, CPF3, Responder, Trellchem, Tychem

Eye Protection: Wear appropriate eye protection to prevent eye contact.

Respiratory Protection: Where concentrations in air may exceed the occupational exposure limits and where engineering, work practices or other means of exposure reduction are not adequate, wear approved respirators to prevent overexposure by inhalation.

Respirator Recommendations (NIOSH)

Up to 500 PPM:

(APF = 10) Any chemical cartridge respirator with organic vapor cartridge(s)*
(APF = 25) Any powered, air-purifying respirator with organic vapor cartridge(s)*
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister
(APF = 10) Any supplied-air respirator*
(APF = 50) Any self-contained breathing apparatus with a full facepiece

Emergency or planned entry into unknown concentrations or IDLH conditions:

(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:

(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

9. Physical And Chemical Properties

Property	Value, Description
Appearance (physical state, colour etc)	Clear, colourless liquid
Odour	Aromatic odour
Odour threshold	Not available
pH	Not applicable
Melting point	-94.9 °C
Initial boiling point and boiling range	110 to 111 °C
Flash point	4.4 °C
Evaporation rate	2.24 (Butyl Acetate = 1)
Upper/lower flammability or explosive limits	Lower : 1.2 vol% to Upper: 7.1 vol%
Vapour pressure	6.266 kPa at 20 °C Approximate
Relative vapour density	3.2 (Air = 1)
Relative density	0.87 at 15.5 °C
Solubility(ies)	0.05% at 25 °C
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	552 °C Approximate
Decomposition temperature	Not available
Kinematic Viscosity	0.69 cST at 25 °C Approximate
Molecular Weight	92.14 g/mol

10. Stability And Reactivity

Reactivity/Chemical Stability: This product is stable under ambient conditions.

Possibility of Hazardous Reactions: Hazardous polymerisation will not occur. Reacts violently with strong oxidants causing fire and explosion hazard.

Incompatible Materials: Strong oxidising agents, concentrated nitric or sulphuric acid, halogens, or molten sulphur.

Hazardous Decomposition Products: None

11. Toxicological Information

Potential Health Effects:

Primary Route of Exposure:		
Inhalation	:	✓
Eye	:	✓
Skin	:	✓
Ingestion	:	✓

Inhalation:
High vapour/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anaesthesia, drowsiness, unconsciousness, central nervous system effects, brain damage and possibly death.

Eye Contact:
Irritating, but will not injure eye tissue.

Skin Contact:
Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis). Brief contact with the liquid will not result in significant irritation unless evaporation is prevented. Skin contact may aggravate an existing dermatitis condition.

Ingestion:
Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death.

Reproduction Toxicity:
Warning: May damage fertility or the unborn child, May cause harm to breast-fed children
Inhalation of this chemical at high concentrations or prolonged periods in pregnant women may lead to higher risks of congenital malformations in newborn children.

Chronic:
Warning: Concentrated, prolonged or deliberate inhalation of this product may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals to toluene
(levels greater than approximately 1500 ppm) has been reported to cause adverse foetal developmental effects.

Special Health Precautions: Health studies have shown that many petroleum hydrocarbons pose potential human health risks, which may vary, from person to person. As a precaution, exposure to liquids, vapours, mists or fumes should be minimised.

12. Ecological Information

Acute Toxicity
Fish: Toxic: 1 < LC/EC/IC50 <= 10 mg/l
Aquatic Invertebrates: Harmful: 10 < LC/EC/IC50 <= 100 mg/l
Algae: Low toxicity: LC/EC/IC50 > 100 mg/l

Mobility: Floats on water. If product enters soil, it will be highly mobile and may contaminate groundwater.

Persistence/degradability: Readily biodegradable meeting the 10-day window criterion. Oxidises rapidly by photochemical reactions in air.

Bioaccumulation: Does not bioaccumulate significantly.

Other Adverse Effects: In view of the high rate of loss from solution, the product is unlikely to pose a significant hazard to aquatic life.

13. Disposal Considerations

Waste Disposal Methods:
Recover or recycle if possible. It is the 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 regulations.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. Transport Information

Land (ADR)
UN Number: 1294
UN proper shipping name: TOLUENE
Class: 3
Classification Code: F1Packing Group: II
Labels: 3
Hazard Identification Number: 33

Air (IATA)
UN Number: 1294
UN proper shipping name: TOLUENE
Class: 3
Packing Group: II
Labels: 3

Sea (IMDG)
UN Number: 1294
UN proper shipping name: TOLUENE
Class: 3
Packing Group: II
Labels: 3
Marine pollutant: No

Sea (Annex II of MARPOL 73/78 and the IBC code)
Pollution Category: Y
Ship Type: 3
Product Name: Toluene

15. Regulatory Information

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations:
This product is subjected to the SDS, labelling and PEL and other requirements in the Act/Regulations.

Fire Safety Act and Fire Safety (Petroleum and Flammable Materials) Regulations:
This product is subjected to the requirements of this Regulations.

Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives) Regulations:
This product is subjected to the requirements of this Regulations.

Chemical Inventory Status:

Australia, AIIC:	Yes
China, IECSC:	Yes
Japan, ENCS:	Yes
USA, TSCA:	Yes

16. Other Information

Prepared By: Material Safety Committee
SDS Prepared on: 1/10/2010
Reviewed 1 on 1/10/2013
Revised 2 on 11/2/2015
Revised 3 on 6/11/2015
Revised 4 on 5/11/2020
Revised 5 on 10/10/2025

Revision (2) Notes	
1	Sect. 14: Added information for Transport in Bulk according to MARPOL 73/78 Annex II

Revision (3) Notes	
1	Sect. 3: Added information on Toluene purity

Revision (4) Notes	
1	Sect. 2: Updated to include chronic toxicity to aquatic environment.
2	Sect. 8: Added/updated Control Parameters and Exposure Limits for relevant components in the mixture
3	Sect. 14: Added relevant transport information
4	Sect. 15: Included applicable national regulations (Singapore)

Revision (5) Notes	
1	Sect. 11: Updated to include reproductive toxicity.
2	Sect. 9: Updated chemical properties

CAUTION: The information given above ("**the Information**") relates only to the substance or mixture listed herein. The Information may not be valid when used in combination with any other substance or mixture or in any process. If the substance or mixture is to be used for a purpose other than that stated herein or under conditions other than specified herein, the Information cannot be relied upon as being complete or accurate, and the user is advised to consult the supplier before using the substance or mixture for such other purpose or under such other conditions. The Information is given based on information available at the indicated date of preparation and no representation or warranty is given that it will be correct as of any time after the indicated date of preparation.