

Safety Data Sheet

1. IDENTIFICATION

Product Name:	Toluene
Other Names:	Methylbenzene, Toluol
Recommended Use:	Solvent for resin, lacquers, wax, printing ink, adhesives, plastics and polishes agent. Raw material for used in the chemical industry such as paints, rubbers, plastic, cosmetics, pharmaceuticals, and dehydrate agents.
Supplier:	Global Chemie ASCC Limited
Street Address:	88/123 Moo 2 Bangpoo Industrial Estate (North), Phraek Sa Mai, Mueang Samutprakan, Samutprakan 10280
Telephone:	+66 2324 6888
Fax:	+66 2324 6898-99
Emergency phone:	+66 2324 6888 ext.320

2. HAZARDS IDENTIFICATION

Hazardous Nature

This product is classified as hazardous under GHS criteria

Hazardous Classification

Flammable liquids: Category 2

Reproductive toxicity: Category 2

Aspiration hazard: Category 1

Skin Irritation: Category 2

Specific target organ toxicity following single exposure: Category 3

Specific target organ toxicity following repeated exposure: Category 2

Hazardous Statement

Highly Flammable liquid and vapour

GHS Pictograms



Hazard Statements

H225: Highly flammable liquid and vapour.

H361d: Suspected of damaging the unborn child.

H304: May be fatal if swallowed and enters airways.

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

H315: Causes skin Irritation.

H336: May cause drowsiness or dizziness.

Precautionary Statements

P201: Obtain special instruction before use.

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

P210: Keep away from heat/sparks/open flames/hot surface and Non-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 measure against static discharge.

P261: Do not breathe dust/fume/gas/mist/vapours/spray.

P264: Wash thoroughly after handling.

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

P280: Wear protective glove/eye protection/face protection.

P281: Use personal protective equipment as required.

Response Statements

If on skin

P302+P352: Wash with plenty of soap and water.

P303+P361+P353: Remove/Take off immediately all contaminated clothing rinse skin with water or shower.

P332+P313: Irritation occurs: Get medical advice/attention.

P362: Take off contaminated clothing and wash before reuse.

If inhaled

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

If swallowed

P301+P310: Immediately call a poison center or doctor/physician.

P331: Do not induce vomiting.

Storage Statements

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

P235: Keep cool.

P405: Store locked up.

Disposal Statements

P501: Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Signal Word Danger

3. COMPOSITION: Information on Ingredients

Chemical Ingredient	CAS No.	UN No.	Proportion (%v/v)
Toluene	108-88-3	1294	>99.5

Molecular Formula: $C_6H_5CH_3$

Molecular Weight: 92.13 g/mol

4. FIRST AID MEASURES

For advice, contact Ramathibodi Poison Center (Phone: 1367) or a doctor.

Ingestion

Do not induce vomiting; Do not eat milk and castor oil, transport to nearest medical facility for additional treatment.

Eye Contact

Immediately flush eyes with large amounts of water for at least 10 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.

Skin Contact

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.

Inhalation

Remove to fresh air. If the victim has difficulty breathing or tightness of the chest, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

First Aid facilities

Provide eye baths and safety showers.

Medical Attention

Treat according to symptoms. Avoid gastric lavage: risk of aspiration of product to the lungs with the potential to cause chemical pneumonitis.

5. FIRE FIGHTING MEASURES

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress, providing firefighters with this Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

Suitable extinguishing media

Water spray or fog, Dry chemical powder, Alcohol-resistant foam and Carbon dioxide.

Hazards from combustion products

May produce toxic fumes of carbon monoxide, carbon dioxide if burning.

Precautions for fire fighters and special protective equipment

Wear full protective clothing and self-contained breathing apparatus.

Special protective action for fire-fighters

Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES**Emergency Procedures**

Prevent fluid from escaping to drains and waterways. Contain leaking packaging in a containment drum. Prevent vapours from building up in confined areas. Ensure that drain valves are always closed. Clean up and report spills immediately.

Methods and materials for containment**Protective Measures**

- Observe all relevant local and international regulations.
- Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see chapter 8 this Material Safety Data Sheet. Shut off leaks, if possible, without personal risks. Remove all possible sources of ignition in the surrounding area. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

Clean-Up Methods

- | | | |
|---------------------------------|---|--|
| ♦ Small spillage
(< 200 LT) | : | Transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. |
| ♦ large spillage
(> 200 LT) | : | 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 residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. |

Other Information
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Vapours may form explosive mixtures with air. Vapours may travel to source of ignition and flash back.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin, eyes, and clothing. Do not breathe vapours. Extinguish any naked flame. Remove ignition sources. Avoid sparks. Do not smoke. The vapour is heavier than air spreads along the ground and distant ignition is possible. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Do not use compressed air for filling, discharging, or handling operations. Handle and open container with care in well-ventilated area. Do not empty into drains.

Conditions for safe storage
Must be stored in a diked (bunded) well-ventilated area, away from sunlight, ignition sources and other sources of heat. Bulk storage tanks should be diked (bunded). Keep away from aerosols, flammables, oxidizing agents, corrosives.

Storage Temperature: Ambient.

Incompatible materials
Nitrate agents; strong oxidizing agents, strong acids and strong alkalis.

Recommended Materials
For containers, or container linings use mild steel, stainless steel.

Product Transfer
Keep containers closed when not in use. Do not use compressed air for filling, discharging, or handling operations. If positive displacement pumps are used, these must be fitted with a non-integral pressure relief valve. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

Additional Advice
Containers even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

8. EXPOSURE CONTROLS: PERSONAL PROTECTION

National Exposure Standards
Occupational Exposure Limits

TLV-TWA	=	100 ppm (375 mg/m3)
TLV-STEL	=	150 ppm (560 mg/m3)

Engineering Controls: Ventilation
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective threshold limit value.

Personal Protective Equipment
Respiratory Protection:
Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Eye Protection: Chemical splash goggles (chemical monogoggles).

Skin/ Body Protection: Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.

Hand Protection: Butyl rubber gloves, Nature rubber gloves, Neoprene rubber gloves, Nitrile rubber gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of Measurement	Typical Value
Appearance	-	Colorless Liquid

Property	Unit of Measurement	Typical Value
Odour	-	Specific odour
pH	-	No data available
Boiling point	°C	110.6
Melting point	°C	-95
Flash point	°C	4
Autoignition Temperature	°C	535
Decomposition Temperature	°C	No data available
Lower/Upper Flammability Limits	%V	1.2-7.1
Density @ 20°C	g/cm ³	0.865-0.871
Specific Gravity @ 20°C	-	0.866-0.872
Viscosity @ 20°C	cSt.s	No data available
Vapor pressure	kPa	2.93
Vapor density	kPa (Air = 1)	3.2 @ 20°C
Evaporation Rate	(n-Butyl acetate = 1)	2
Water Solubility	g/m ³	515
Solubility in other solvents Partition coefficient	(n-octanol/water)	No data available
Coefficient of Thermal Expansion	per Deg °C	No data available

The values listed are indicative of this product’s physical and chemical properties. For a full product specification, please consult the Product Data Sheet.

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions.

Conditions to avoid

Heat, flame, spark and other ignition sources.

Hazardous decomposition products

Thermal decomposition is highly dependent on conditions. Carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation. May form explosive peroxides.

Hazardous reactions

None known.

Hazardous Polymerisation

No data available

Materials to Avoid

Nitrate agents; strong oxidizing agents, strong acids and strong alkalis.

Chemical Reactivity

Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

- ◆ LD₅₀ Acute oral toxicity : 636 mg/kg, (rat)
- ◆ LC₅₀ Acute Inhalation Toxicity : 14,100 ul/kg, (rabbit)
- ◆ LC₅₀ Acute Inhalation Toxicity : 49 g/m³/4 hours, (rat)

Eye Contact

Irritating to eyes.

Skin Contact

Irritating to skin. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Inhalation

Inhalation of vapours or mists may cause irritation to the respiratory system.

Carcinogenicity

No data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Toxicity

- ◆ Fish : Low toxicity : LC₅₀ 70 mg/l
- ◆ Aquatic Invertebrates : Low toxicity : EC₅₀ 270 mg/l

Persistence/ degradability

Readily biodegradable.

Mobility

Dissolves in water. If product enters soil, it will highly mobile and may contaminate groundwater.

Bio-accumulation

Not expected to bioaccumulate significantly.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Material Disposal

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 classifications and disposal methods in compliance with applicable regulations.

Container Disposal

Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Refer to Section 7 before handling the product or containers. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send to drum recoverer or metal reclaimer.

Local Legislation

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

14. TRANSPORT INFORMATION

Road and Rail Transport		Marine Transport		Air Transport	
UN. Number	1294	UN. Number	1294	UN. Number	1294
Class/Item	3	Class/Item	3	Class/Item	3
Hazard Symbol	Flammable Liquid	Hazard Symbol	Flammable Liquid	Hazard Symbol	Flammable Liquid

Proper Shipping Name	Toluene	Proper Shipping Name	Toluene	Proper Shipping Name	Toluene
Packing Group	II	Packing Group	II	Packing Group	II
		Marine Pollutant	No		

Dangerous Goods Segregation

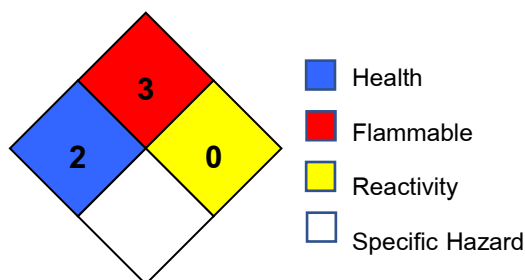
This product is classed as Dangerous Goods Class 3, packing group II. Please consult the Australian Dangerous Goods Code for Transport by Road and Rail for information.

15. REGULATORY INFORMATION

EC Label Name:	Toluene
EC Classification:	Highly Flammable, Harmful
EINECS (EC):	203-625-9
EC Annex I Number:	601-021-00-3
MITI (Japan):	3-2

16. OTHER INFORMATION

National Fire Protection Association (USA) :



SDS Distribution :

The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty of guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Prepared By :

Quality Control Department / Global Chemie ASCC Limited

Abbreviations:

AICS: Australian Inventory of Chemical Substances
CAS Number: Chemical Abstracts Number
IARC: International Agency for Research on Cancer
N/A: not available
NOHSC: National Occupational Health and Safety Council
GHS: Global Harmonized System

References:

- Supplier Material Safety Data Sheets
- <http://chem.sis.nlm.nih.gov/chemidplus> (October 18)
- <http://hsis.ascc.gov.au/SearchHS.aspx> (October 18)
- Ecotoxicology data: http://cfpub.epa.gov/ecotox/quick_query.htm (October 18)
- Sax's Dangerous Properties of Industrial Materials*, Richard J. Lewis Snr., pub. Canada (2000)

The information sourced for the preparation of this document was correct and complete at the time of writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities

surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product. No warranty and guarantee are expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product for further information, please contact Global Chemie ASCC Limited.