

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the product

Product code: T5031

Product name: Toluene

CAS No.: 108-88-3

1.2 Recommended use and restriction on use

General use : for experimental, research and industrial use

Restriction on use : Never drink, Not used except for experimental, research and industrial applications.

1.3 Manufacturer / Supplier / Distributor information

Importer/distributors identification

Company : ASIA CHEMIE (THAILAND) CO., LTD.

Address : 44/27 Moo.4 T.Huaykapi A.Muangchonburi, Chonburi, Thailand. 20130

Telephone number : +66 3838 7988

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E-mail : asiachemie@gmail.com, natchakot@asiachemie.com, natchakot@gmail.com

2. Hazards identification

2.1 GHS Classification

Flammable liquids: Category2

Skin corrosion/irritation: Category2

Reproductive toxicity: Category2

Specific target organ toxicity (Single exposure): Category3 (Narcotic effects)

Specific target organ toxicity (Repeated exposure): Category2

Aspiration hazard: Category1

2.2 GHS label elements

Hazard symbols



Signal words : Danger

Hazard statements

H225 Highly flammable liquid and vapour

H304 May be fatal if swallowed and enters airways

H315 Causes skin irritation

H336 May cause drowsiness and dizziness.

H361 Suspected of damaging fertility or the unborn child

H373 May cause damage to organs through prolonged or repeated exposure

Precautionary statements

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.

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. Flammable liquids.

P243 Take precautionary measures against static discharge.

P260 Do not breathe gas/mist/vapours/spray.

P261 Avoid breathing gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

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

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

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

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

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

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.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P314 Get medical advice/attention if you feel unwell.

P321 Specific treatment
P331 Do NOT induce vomiting.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P370+P378 In case of fire: Use Suitable extinguishing media for extinction.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulation

2.3 Other hazards which do not result in classification: (NFPA Classification)

NFPA grade (0 ~ 4 level)

- Health: 2, Flammability: 3, Reactivity: 0

3. Composition/information on ingredients

Chemical Name	Synonyms	CAS No.	Concentration (%)
Toluene	-	108-88-3	100

4. First aid measures

4.1 Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.

4.2 Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms (flare, irritate) occur.
- Wash thoroughly after handling.

4.3 Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

4.4 Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.
- If swallowed, large amounts of water to drink and do not induce vomiting.

4.5 Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

4.6 Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. Fire-fighting measures

5.1 Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

5.2 Specific hazards arising from the chemical

- Causes serious skin damage
- Highly flammable liquid and vapour
- May cause damage to organs

5.3 Special protective actions for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Do not access if the tank on fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.

- Vapor or gas is burned at distant ignition sources can be spread quickly.
- Due to the extremely low flash point, irrigating fire extinguishing may be less effective when put out a fire.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Remove all sources of ignition.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Keep unauthorized people away isolate hazard area and deny entry.

6.2 Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

6.3 Methods and materials for containment and cleaning up

- Large spill: Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Do not use plastic containers.

7. Handling and storage

7.1 Precautions for safe handling

- Comply with all applicable laws and regulations for handling
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.
- Avoid contact with heat, sparks, flame or other ignition sources.
- Contaminated work clothing should not be allowed out of the workplace.

7.2 Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.
- Collected them in sealed containers.

8. Exposure controls/personal protection

8.1 Exposure limits

ACGIH TLV

- [Toluene]: TWA 20 ppm (75 mg/m³)

OSHA PEL

- [Toluene]: 200 ppm, C 300 ppm

8.2 Engineering controls

Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

8.3 Individual protection measures, such as personal protective equipment

Respiratory protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health: Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any

self-contained breathing apparatus with a full facepiece.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Hand protection

- Wear appropriate chemical resistant glove.

Skin protection

- Wear appropriate chemical resistant protective clothing.

Others

- Not available

9. Physical and chemical properties

A. Appearance	
- Appearance	Liquid
- Color	Clear
B. Odor	benzene like
C. Odor threshold	2.14 ppm
D. pH	Not available
E. Melting point/Freezing point	-95 °C
F. Initial Boiling Point/Boiling Ranges	111 °C
G. Flash point	4 °C
H. Evaporation rate	Not available
I. Flammability (solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	7.1 / 1.1 %
K. Vapour pressure	28.4 mmHg (25°C)
L. Solubility	0.0526 g/100 ml (25 °C)
M. Vapour density	3.1 (air=1)
N. Specific gravity (Relative density)	0.86
O. Partition coefficient of n-octanol/water	2.73
P. Autoignition temperature	480 °C
Q. Decomposition temperature	Not available
R. Viscosity	0.56 cP (25°C)
S. Molecular weight	92.14
T. Molecular formula	C ₇ H ₈

10. Stability and reactivity**10.1 Chemical Stability**

- This material is stable under recommended storage and handling conditions.

10.2 Possibility of hazardous reactions

- Cylinders exposed to fire may vent and release flammable gas.

10.3 Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid: Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with heat, sparks, flame or other ignition sources.

10.4 Incompatible materials

- Not available

10.5 Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. Toxicological information

11.1 Information on the likely routes of exposure

Respiratory tracts

- May be fatal if swallowed and enters airways

Oral

- Not available

Eye · Skin

- Causes skin irritation

11.2 Delayed and immediate effects and also chronic effects from short and long term exposure

Acute toxicity

* Oral

- [Toluene]: LD50 5580 mg/kg Rat (EU Method B.1)

* Dermal

- [Toluene]: rabbit LD50=12,124 mg/kg (HSDB)

* Inhalation

- [Toluene]: LC50 >20 mg/l Rat (OECD TG 403) (ECHA)

Skin corrosion/irritation

- Causes skin irritation

Serious eye damage/irritation

- Not available

Respiratory sensitization

- Not available

Skin sensitization

- Not available

Carcinogenicity

* IARC

- [Toluene]: Group 3

* OSHA

- Not available

* ACGIH

- [Toluene]: A4

* NTP

- Not available

* EU CLP

- Not available

Germ cell mutagenicity

- Not available

Reproductive toxicity

- Suspected of damaging fertility or the unborn child

STOT-single exposure

- May cause drowsiness and dizziness.

STOT-repeated exposure

- May cause damage to organs through prolonged or repeated exposure

Aspiration hazard

- May be fatal if swallowed and enters airways

12. Ecological information

12.1 Ecotoxicity

Fish

- [Toluene]: LC50 5.5 mg/l 96 hr (ECHA)

Crustaceans

- [Toluene]: EC50 3.78 mg/l 48hr (ECHA)

Algae

- Not available

12.2 Persistence and degradability

Persistence

- [Toluene]: log Kow 2.73 (HSDB)

Degradability

- Not available

12.3 Bioaccumulative potential

Bioaccumulative potential

- Not available

Biodegradation

- [Toluene]: Readily biodegradable (ECHA)

12.4 Mobility in soil

- Not available

12.5 Other adverse effects

- Not available

13. Disposal considerations**13.1 Disposal methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

13.2 Special precautions for disposal

- The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. Transport information**14.1 UN No. (IMDG CODE/IATA DGR)**

- 1294

14.2 Proper shipping name

- TOLUENE

14.3 Hazard Class

- 3

14.4 IMDG CODE/IATA DGR Packing group

- II

14.5 Marine pollutant

- Not applicable

14.6 Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE: F-E (Non-water-reactive flammable liquids)
- EmS SPILLAGE SCHEDULE: S-D (Flammable liquids)

15. Regulatory information**15.1 National and/or international regulatory information****POPs Management Law**

- Not applicable

Information of EU Classification*** Classification**

- [Toluene]: H225, H361d, H304, H373, H315, H336

U.S. Federal regulations*** OSHA PROCESS SAFETY (29CFR1910.119)**

- Not applicable

*** CERCLA Section 103 (40CFR302.4)**

- [Toluene]: 453.599 kg 1000 lb

*** EPCRA Section 302 (40CFR355.30)**

- Not applicable

*** EPCRA Section 304 (40CFR355.40)**

- Not applicable

*** EPCRA Section 313 (40CFR372.65)**

- [Toluene]: Applicable

Rotterdam Convention listed ingredients

- Not applicable

Stockholm Convention listed ingredients

- Not applicable

Montreal Protocol listed ingredients

- Not applicable

16. Other information

Reason for the revision: General update.

Date: 09/8/2014

Revision 5

Date: 28/01/2024

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