Chemical Safety Data Sheet

Section 1 IDENTIFICATION

GHS Product identifier: Toluene.

Other means of identification: /

Recommended use of the chemical and restrictions on use: This product can be used as an organic solvent. It can also be used in the synthesis of medicines, coatings, resins, dyes, pesticides, etc.

Supplier's details:

Emergency phone number: /

Section 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Flammable liquids Category 2

Skin corrosion/irritation Category 2

Reproductive toxicity Category 2

Specific target organ toxicity, single exposure Category 3 (Narcotic effects)

Specific target organ toxicity, repeated exposure Category 2

Aspiration hazard Category 1

GHS Label elements, including precautionary statements:

Symbol:

Signal word: Danger

Hazard statement(s): Highly flammable liquid and vapor. Causes skin irritation. Suspected of damaging fertility or the unborn child. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure. May be fatal if swallowed and enters airways.

Precautionary statement(s):

Prevention:

Obtain, read and follow all safety instructions before use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/…/equipment. Use only non-sparking tools. Take action to prevent static discharges. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands [and ...] thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Response:

In case of fire: Use spray, foam or dry powder to extinguish. IF SWALLOWED: Get emergency medical help immediately. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Take off contaminated clothing. And wash it before reuse. Rinse skin with water[or shower]. If skin irritation occurs: Get medical help. Specific treatment (see below). IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help if you feel unwell. IF exposed or concerned, get medical advice. Get medical help if you feel unwell.

Storage:
Store in a well-ventilated place. Keep cool. Store locked up. Keep container tightly closed.
Disposal:
Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards which do not result in classification: /

Section 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration%
Toluene	108-88-3	99.97%

Section 4 FIRST AID MEASURES

Description of necessary first aid measures
If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact: Remove contaminated clothing and rinse with plenty of running water.
In case of eye contact: Rinse thoroughly with plenty of running water for at least 15 minutes and consult a physician.
If ingestion: Rinse mouth with water. Do not induce vomit. Consult a physician immediately.
Most important symptoms/effects, acute and delayed: /
Indication of immediate medical attention and special treatment needed, if necessary: /

Section 5 FIREFIGHTING MEASURES

Suitable extinguishing media: Use foam, dry powder or carbon dioxide.
Special hazards arising from the chemical: Liquid and vapour are highly flammable. May explode and burn in high temperature and fire and release toxic fumes.
Special protective actions for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary. Use water spray to cool unopened containers.

Section 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: It is recommended that emergency personnel wear protective masks and fire protective overalls. Do not touch the spill directly.
Environmental precautions: Isolate contaminated areas and restrict access.
Methods and materials for containment and cleaning up: Small amount of leakage: adsorption with sand or other inert materials. Do not allow products to enter restricted areas such as sewers. A large amount of leakage: building a dike or digging a pit to contain. Transfer to a tank truck or special collector with an explosion-proof pump and transport to a waste disposal site for disposal.

Section 7 HANDLING AND STORAGE

Precautions for safe handling: There should be sufficient local exhaust in workplace. Operators should be trained and strictly follow the operating procedures. Operators are advised to wear protective masks, normal protective clothing and rubber gloves. Operators should load and unload lightly during handling to prevent damage to the package. There should be leakage treatment equipment in workplace. There may be harmful residues in empty containers.
Conditions for safe storage, including any incompatibilities: Store in a cool, dry, well-ventilated warehouse. Keep away from fire and heat. Protect from direct sunlight. The package should be sealed and

not exposed to moisture. It should be stored separately from oxidants, flammable materials, etc., and should not be mixed. The storage area should be provided with suitable materials to contain spills.

Section 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Source	Material name	TWA	STEL
China Occupational Exposure Limits for Hazardous Agents in the Workplace	Toluene	50 mg/m^3	100 mg/m^3

Appropriate engineering controls: Close strictly and provide sufficient local exhaust.

Individual protection measures

Eye/face protection: Wear a protective mask.

Skin protection: Wear normal protective clothing.

Respiratory protection: Air respirators should be worn during emergency rescue or evacuation.

Thermal hazards: /

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid.
Colour	Colorless transparent.
Odour	/
Melting point/freezing point	-95℃.
Boiling point or initial boiling point and boiling range	110℃.
Flammability	HIGHLY FLAMMABLE.
Lower and upper explosion limit/flammability limit	1.3%-7.0%
Flash point	≤18.0℃
Auto-ignition temperature	529-536℃
Decomposition temperature	/
pH	/
Kinematic viscosity	/
Solubility	Immiscible in water
Partition coefficient: n-octanol/water (log value)	/
Vapour pressure	2.93kPa（20℃）
Density and/or relative density	0.87。
Relative vapour density	3.2
Particle characteristics	/

Section 10 STABILITY AND REACTIVITY

Reactivity: /

Chemical stability: This material is stable in normal temperature.

Possibility of hazardous reactions: Reacts violently with strong oxidants. This generates fire and explosion hazard.

Conditions to avoid: Spark, high temperature and static electricity.

Incompatible materials: Flammable materials and oxidizers.

Hazardous decomposition products: Oxycarbides.

Section 11 TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure: Inhaled, swallowed, skin, eyes.

Symptoms related to the physical, chemical and toxicological characteristics: /

Acute health effects: Accidental ingestion of the material may be harmful and cause cough, dizziness and throat irritation. Oral intake cause bellyache, nausea, vomit and other symptoms. This material may produce skin and eyes irritation.

Chronic health effects: The substance defats the skin, which may cause dryness or cracking. The substance may have effects on the central nervous system. Exposure to the substance may increase noise-induced hearing loss. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

Numerical measures of toxicity(such as acute toxicity estimates):

LD50(Oral, rat): 636 mg/kg

LD50(Dermal, rabbit): >2000 mg/kg

LC50(Inhalation, rat): 49 mg/L/4H

Section 12 ECOLOGICAL INFORMATION

Toxicity:

Endpoint	Test Duration (hr)	Species	Value
LC50	96h	Fish	5-35mg/l
EC50	72h	Algae or other aquatic plants	12.5mg/l
EC50	48h	Crustacea	3.78mg/L
NOEC(ECx)	168h	Crustacea	0.74mg/L
EC50	96h	Algae or other aquatic plants	>376.71mg/L

Persistence and degradability: Low (Half-life = 28 days).

Bioaccumulative potential: Low (BCF = 90).

Mobility in soil: Low (KOC = 268).

Other adverse effects: /

Section 13 DISPOSAL CONSIDERATIONS

Disposal methods: Dispose this product by safe burial. Damaged containers are prohibited from being reused and should be buried in the prescribed place.

Section 14 TRANSPORT INFORMATION

UN number: 1294.

UN proper shipping name: TOLUENE.

Transport hazard class(es) : 3.

Packing group, if applicable: II.

Environmental hazards: /

Special precautions for user: /

Section 15 REGULATORY INFORMATION

Regulations: This safety data sheet is in compliance with the following national standards: GB/T 16483-2008, GB 13690-2009, GB 18218-2018, GB 15258-2009, GB 6944-2012, GB 190-2009, GB/T 191-2008, GB 12268-2012, GB/T 15098-2008, GBZ 2.1-2019, GBZ 2.2-2007 as well as the following regulations: Railway Dangerous Goods Transport Administrative Regulation, Dangerous Chemicals Safety

Administrative Regulation.

Section 16 OTHER INFORMATION

References	UN Recommendations on the Transport of Dangerous Goods Model Regulations UN Globally Harmonized System of Classification and Labelling of Chemicals
Form Date	29-May-2023

Note 1: When products contain two or more hazardous substances, Safety Data Sheets should be prepared based on the risk of the mixture.

Note 2: Manufacturer/supplier should ensure the correctness of the information contained in the safety data sheets, and updated in a timely manner.

Note 3: As a result of product features without the existence of certain information or no data available (such as boiling point does not exist for the solid) in the table with "/" logo.