

SAFETY DATA SHEETS

According to the UN GHS revision 10

1: Identification

1.1 GHS Product identifier

Product name Chlorobenzene

1.2 Other means of identification

Product number 108-90-7

Other names Chlorobenzene

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.

Uses advised against no data available

1.4 Supplier's details

Company Zhongshan Greenrock Technology Co., Ltd.

Address No. 138, Jinsan Avenue, Sanjiao Town, Zhongshan City, Guangdong Province, China

Telephone +86-2087066781

1.5 Emergency phone number

Emergency phone number +86-2087066781

Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2: Hazard identification

2.1 Emergency Overview

It is highly corrosive and can cause irreversible damage to the skin and eyes. If in contact, rinse immediately with plenty of water and seek medical help as soon as possible.

2.2 GHS Classification

Flammable liquids : Category 3

Acute toxicity, dermal : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2A

Acute toxicity, inhalation : Category 4

Hazardous to the aquatic environment, long-term hazard : Category 2

2.3 GHS label elements, including precautionary statements

Pictogram(s)**Signal word**

Warning

Hazard statement(s)

H226 Flammable liquid and vapor
H312 Harmful in contact with skin
H315 Causes skin irritation
H319 Causes serious eye irritation
H332 Harmful if inhaled
H411 Toxic to aquatic life with long lasting effects

Precautionary statement(s)**Prevention**

P210 Keep away from heat, hot surface, sparks, open flames and other ignition sources. 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.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash hands [and ...] thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264+P265 Wash hands [and ...] thoroughly after handling. Do not touch eyes.

Response

P317 Get emergency medical help.
P321 Specific treatment (see ... on this label).
P391 Collect spillage.
P302+P352 IF ON SKIN, wash with plenty of water/...
P303+P361+P353 IF ON SKIN (or hair), Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].
P304+P340 IF INHALED, Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES, Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P332+P317 If skin irritation occurs, Get medical help.
P337+P317 If eye irritation persists, Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P370+P378 In case of fire, Use ... to extinguish.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.

Disposal

P501 Dispose of contents/container to ...

2.4 Physical and chemical

Acidic or alkaline substances that react with metals to produce flammable hydrogen. May cause violent exothermic reactions when in contact with other substances. At high concentrations, they have strong oxidizing or reducing properties.

2.5 Health hazards

Skin contact: May cause severe burns, tissue necrosis, and scarring. Eye contact: May cause corneal damage, vision loss, or even blindness. Inhalation of vapor or mist may cause respiratory burns and pulmonary edema.

2.6 Environmental hazards

Leakage into the environment can change the pH value of soil and water, causing serious ecological damage. It is highly toxic to aquatic organisms and can cause the death of aquatic organisms and the collapse of the ecosystem.

2.7 Other hazards which do not result in classification

no data available

3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Chlorobenzene	Chlorobenzene	108-90-7	270-127-6	99%

4: First-aid measures

4.1 General advice

Stop contact immediately and remove contaminated clothing; rinse the exposed area with plenty of running water and seek medical attention immediately with the material's SDS. If the corrosive substance is acidic (such as sulfuric acid), neutralize it with a weak alkaline solution (such as 5% sodium bicarbonate) after rinsing. For alkaline corrosive substances (such as sodium hydroxide), neutralize them with a weak acidic solution (such as 1% acetic acid).

4.2 If inhaled

Move to fresh air and keep the airway open. If corrosive vapors (such as hydrochloric acid mist) are inhaled, immediately administer nebulized inhalation (normal saline + dexamethasone). If laryngeal edema or breathing difficulties occur, immediately perform a tracheotomy (requires professional operation) and seek medical attention.

4.3 In case of skin contact

Rinse with plenty of running water for 20-30 minutes (make sure to rinse thoroughly, especially between the fingers, in the armpits, and other folds). If blisters are present, do not prick them; instead, apply a sterile gauze compress (to avoid adhesion). Do not apply oily ointments to avoid affecting subsequent treatment.

4.4 In case of eye contact

Immediately flush with an eyewash or plenty of normal saline for 15-20 minutes (use a gentle flow to avoid direct exposure to the cornea); apply antibiotic eye ointment (such as erythromycin ointment) to the eyelids, wear a sterile eye patch, and seek immediate medical attention from an ophthalmologist.

4.5 If swallowed

Do not induce vomiting (to avoid secondary damage to the esophageal mucosa). If the substance is acidic, take milk or egg white orally (to protect the gastric mucosa). If the substance is alkaline, take diluted vinegar (1:10 ratio) orally. If you carry SDS, seek medical attention immediately for a gastroscopy.

4.6 Most important symptoms and effects, both acute and delayed

Acute symptoms: skin redness, swelling, blisters, ulcers, severe eye pain, photophobia, blurred vision, oral/esophageal burns, and difficulty swallowing; long-term effects: skin scarring, corneal scarring (possibly causing blindness), and esophageal stenosis.

4.7 Protection of first-aiders

Rescuers must wear corrosion-resistant chemical protective clothing, chemical protective gloves (made of fluororubber), chemical goggles and masks; stand upwind when flushing to avoid inhaling volatile corrosive gases; after contact, equipment must be cleaned with a neutralizer and then rinsed with clean water.

4.8 Notes to physician

Inform the doctor of the type of corrosive agent (acid/base), concentration, and duration of contact. Skin burns should be treated according to their depth (superficial II degree and above require skin grafting). Eye injuries should be checked for corneal epithelial integrity and, if necessary, corneal repair drugs (such as recombinant human epidermal growth factor) should be used.

5: Fire-fighting measures

5.1 Unsuitable extinguishing media

Flammable liquids (flash point 23-60°C): Avoid using high-pressure water (diffusing liquids); Flammable solids: Do not use water (some solids release heat when in contact with water, such as sulfur); Aerosols: Do not squeeze leaking tanks (explosion prevention).

5.2 Specific hazards during fire fighting

The combustion of flammable liquids produces a large amount of vapor, which can easily form a flowing fire; the combustion of flammable solids can easily produce toxic smoke and dust (such as plastics); aerosol cans can easily rupture and explode when heated, spraying flames.

5.3 Hazardous combustion products

Carbon monoxide, carbon oxides, organic vapors (such as benzene, toluene); combustion of some solids releases hydrogen chloride and cyanide (when containing chlorine/cyanide components).

5.4 Specific extinguishing methods

Flammable liquids: Use dry powder/foam (ordinary foam) for small areas, and cover large areas with foam + firebreaks to intercept (to prevent flow); Flammable solids: Cover with dry powder/dry sand to avoid wind (to prevent dust from intensifying combustion); Aerosols: Remove surrounding fire sources before extinguishing the fire, use dry powder to extinguish the fire, and it is strictly forbidden to touch the leaking tank.

5.5 Special protective equipment for fire-fighters

Wear fire-resistant clothing, chemical-resistant gloves, and a half-mask respirator (equipped with a vapor filter cartridge); carry a temperature detector (to monitor the tank temperature); and maintain a safe distance of 10 meters from the fire scene during operation.

6: Accidental release measures

6.1 Protective measures for workers

Wear anti-static work clothes, anti-static gloves, and chemical goggles; wear a gas mask (organic vapor filter cartridge) for gases/volatile liquids; wear impact protection for aerosols.

6.2 Environmental protection measure

Liquids/aerosols are prevented from flowing into sewers/rivers, and oil booms + oil absorbent cotton are used to pollute water bodies; gas leaks are monitored for concentration to prevent them from spreading to residential areas; solids are prevented from dust polluting the soil.

6.3 Containment methods for leaked chemicals

Gas: Shut off the leak source (when safe), and use explosion-proof fan to lead the leak to an open area; Liquid: Collect in anti-static container; Solid: Put non-sparking tools into anti-static container; Aerosol: Collect the leaked tank (no squeezing).

6.4 Cleanup methods for chemical spills

Liquid: absorb with a small amount of oil-absorbing cotton and transfer with a large amount of explosion-proof pump; Solid: transfer with spark-free tools (to prevent friction); Aerosol: leaking tanks are collected separately and disposed of professionally.

6.5 Measures to prevent the spread of leaks

Designate a 10-meter isolation zone and prohibit open flames/static equipment; set up fire barriers for liquids and anti-static isolation belts for gases; use explosion-proof ventilation to reduce concentration (explosion limit).

6.6 Container leakage treatment

Gas: Minor leaks should be sealed with anti-static sealant, serious leaks should be transferred after pressure relief; Liquid: Anti-static sealant should be used to seal, serious leaks should be transferred with explosion-proof pump; Aerosol: Do not squeeze, wrap in sealed bag.

6.7 Special considerations

Eliminate static electricity before operation; provide good ventilation to prevent gas accumulation; perform anti-static testing on tools; clean protective equipment and perform anti-static testing after leak treatment.

7: Handling and storage

7.1 Safe storage conditions

Store in a corrosion-resistant warehouse (the floor is epoxy resin coated, and the walls are acid/alkali-resistant tiles); the container is made of corrosion-resistant material (glass fiber reinforced plastic for acid corrosion, high-density polyethylene for alkaline corrosion), with a capacity of ?200L to prevent dumping; the warehouse is equipped with an emergency neutralization tank (volume ?5m³) and equipped with acid/alkali neutralizers (such as sodium carbonate, dilute acetic acid).

7.2 Storage precautions

Store them separately from materials that may come into contact with the skin (such as clothing and gloves) to avoid cross contamination. Use a corrosion-resistant forklift to transport containers and avoid impact. Check the humidity in the warehouse daily (?65%) to prevent moisture from exacerbating corrosion. In case of leakage, immediately absorb it with inert materials (such as sand) and then treat it with a neutralizer.

7.3 VCI Storage Grade

Level 2 (medium-high): Metal pipes and valves are coated with VCI anti-rust paint (acid/alkali resistant type) and maintained once every six months; VCI anti-rust blocks (such as urethane) are placed in the warehouse and replenished once every quarter to prevent corrosion of metal parts.

7.4 Recommended storage temperature

5-35?, avoid sudden temperature changes (such as moving directly from a low temperature environment to a high temperature environment); concentrated acids/bases must be kept at a temperature ?30? to prevent temperature increases from causing increased container pressure; in winter, they must be protected from freezing (temperature ?5?) to prevent the solution from freezing and cracking the container (if the label has a recommended storage temperature, follow the label).

7.5 Handling

For precautions see Safety Data Sheet section 2

Advice on safe handling : Work under hood. Do not inhale substance/mixture.

8: Exposure controls/personal protection

8.1 Respiratory protection

When exposed to corrosive vapors (such as hydrochloric acid mist and sulfuric acid mist), wear a powered air-purifying respirator (APF?50); in high-concentration environments, a positive pressure air respirator is required to avoid inhalation burns to the respiratory tract.

8.2 Recommended Filter type

For acidic corrosive substances, choose Type E filter cartridge (protects against acidic gases such as SO₂ and HCl); for alkaline corrosive substances, choose Type K filter cartridge (protects against ammonia and amines); if the product contains dust, add Type P2 filter cotton.

8.3 Eye/face protection

Wear chemical protective goggles + full-face mask. The mask must cover the chin. The lens should be made of polycarbonate (corrosion-resistant and impact-resistant). Check the sealing regularly.

8.4 Skin and body protection

Wear corrosion-resistant chemical protective clothing made of fluororubber or polytetrafluoroethylene (PTFE) to avoid direct skin contact; wear an apron (of the same material) with protection covering the chest to the knees.

8.5 Hand protection

Wear corrosion-resistant gloves. For acid corrosion, choose neoprene material; for alkaline corrosion, choose nitrile rubber material. The thickness of the gloves should be ≥ 0.5 mm. Perform a water leakage test before use.

8.6 Hygiene measures

Immediately after the operation, rinse the skin with running water for 10 minutes. If there is stinging at the contact site, apply a neutralizer (5% sodium bicarbonate for acid and 1% acetic acid for alkali) for 5 minutes. Do not use irritating skin care products to avoid aggravating skin damage.

9: Physical and chemical properties and safety characteristics

Physical state	colourless liquid
Colour	Colorless liquid
Odour	Faint, not unpleasant odor
Melting point/freezing point	-45oC
Boiling point or initial boiling point and boiling range	132°C(lit.)
Flammability	Class IC Flammable Liquid: Fl.P. at or above 22.78°C and below 37.78°C.Flammable. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	Lower flammable limit: 1.3%; Upper flammable limit: 9.6%
Flash point	27°C
Auto-ignition temperature	636.67°C
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	0.806 mPa.s at 20°C
Solubility	In water:0.4 g/L (20 oC)
Partition coefficient n-octanol/water	log Kow = 2.84
Vapour pressure	11.8 mm Hg (25 °C)

Density and/or relative density	1.106g/mL at 25°C (lit.)
Relative vapour density	3.86 (vs air)
Particle characteristics	no data available

10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Dangerous fire hazard when exposed to heat or flame. CHLOROBENZENE undergoes a sometimes explosive reaction with powdered sodium or phosphorus trichloride + sodium. May react violently with dimethyl sulfoxide. Reacts vigorously with oxidizing agents. Attacks some forms of plastic, rubber and coatings. Forms a shock sensitive solvated salt with silver perchlorate. .

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Contact with strong oxidizers may cause fires and explosions.

10.6 Hazardous decomposition products

Flammable liquid. Vapors are heavier than air and may travel to a source of ignition and flash back. Combustion by-products include phosgene and hydrogen chloride gases.

11: Toxicological information

11.1 Acute toxicity

Oral: LD50 Rat oral 2.29 g/kg

Inhalation: LC50 Rat (male) inhalation 2965 ppm (13.9 mg/L) for 6 hr /99% purity/

Dermal: no data available

11.2 Skin corrosion/irritation

no data available

11.3 Serious eye damage/irritation

no data available

11.4 Respiratory or skin sensitization

no data available

11.5 Germ cell mutagenicity

no data available

11.6 Carcinogenicity

Cancer Classification: Group D Not Classifiable as to Human Carcinogenicity

11.7 Reproductive toxicity

No information is available on the reproductive or developmental effects of chlorobenzene in humans. Chronic inhalation exposure of rats to chlorobenzene did not adversely affect reproductive performance or fertility. However, a slight increase in the incidence of degenerative testicular changes was observed. Chlorobenzene does not appear to be a developmental toxicant and did not produce structural malformations in rats and rabbits acutely exposed via inhalation.

11.8 STOT-single exposure

no data available

11.9 STOT-repeated exposure

no data available

11.10 Aspiration hazard

no data available

12: Ecological information

12.1 Toxicity

Toxicity to fish: LC50; Species: *Danio rerio* (Zebra danio); Conditions: freshwater, static, 23°C, pH 7.4, hardness 320 mg/L CaCO₃, dissolved oxygen > or =70%; Concentration: 10500 ug/L for 48 hr (95% confidence interval: 7100-15500 ug/L)

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: *Daphnia magna* (Water flea); Conditions: freshwater, static; Concentration: 4300 ug/L for 24 hr (95% confidence interval: 3250-5700 ug/L); Effect: intoxication, immobilization

Toxicity to algae: EC50; Species: *Pseudokirchneriella subcapitata* (Green algae) initial concentration 500000 cells/L; Conditions: static, 20°C; Concentration: 12500 ug/L for 96 hr; Effect: growth, general

Toxicity to microorganisms: no data available

12.2 Persistence and degradability

Information ... concerning the biodegradation potential of chlorobenzene indicates that this compound will ... eventually degrade, but not at an environmentally important rate unless the microorganisms present are already growing on another hydrocarbon source.

12.3 Bioaccumulative potential

BCF values of 4.3 to 39.6 and 3.9 to 22.8 were measured for chlorobenzene in carp (*Cyprinus carpio*) at chemical concentrations of 0.15 and 0.015 mg/L, respectively(1). A log BCF of 2.65 has been reported for chlorobenzene in fathead minnows(2) that corresponds to a BCF of 450(SRC). A BCF of 41 was measured in bluegill fish (*Lepomis macrochirus*) over a 14-day exposure period(3). According to a classification scheme(4), these BCF values suggest the potential for bioconcentration in aquatic organisms ranges from low to high, provided the compound is not metabolized by the organism(SRC). Dissolved organic matter that is present in interstitial water may greatly reduce the amount of a chemical that is available for accumulation(5). In one set of experiments, midge larvae were found to accumulate higher tissue-to-sediment ratios of chlorobenzene from a low-organic content sediment than from a high-organic content sediment(5). BCFs of 0.25 (from sediment), 11 (from interstitial water), and 10 (overlying water) were measured for midge larvae exposed to chlorobenzene under equilibrium exposure conditions(5). BCFs of 0.15 (from sediment), 310 (from interstitial water), and 5 (from overlying water) were measured for midge larvae exposed to chlorobenzene sorbed to high-organic content sediment under nonequilibrium exposure conditions(5). BCFs of 0.72 (from sediment), 18 (from interstitial water), and 2,187 (from overlying water) were measured for midge larvae exposed to chlorobenzene sorbed to low-organic content sediment under nonequilibrium exposure conditions(5).

12.4 Mobility in soil

Koc values of 313.1 and 146.5 were measured on Captina silt loam (1.49% organic carbon) and McLaurin sandy loam, (0.66% organic carbon), respectively(1). Equilibrium sorption constant (K_s) values of 0.295 and 0.09 were determined in Eustis fine sand (13 g/kg clay, 32 g/kg silt, 955 g/kg sand, 3.9 g/kg organic carbon) and Tampa (6 g/kg clay, 23 g/kg silt, 971 g/kg sand, and 1.3 g/kg organic carbon) soils, respectively(2); corresponding Koc values are 76 and 69(SRC). Equilibrium sorption coefficients of 0.014 and 10.20 were measured on Borden (98% sand, 1% silt, 1% clay, 0.29% organic carbon) and Mt. Lemmon (60.3% sand, 24.0% silt, 15.7% clay, 12.6% organic carbon) soils, respectively(3); corresponding Koc values are 4.8 and 81(SRC). According to a classification scheme(4), these Koc values suggest that chlorobenzene is expected to have moderate to very high mobility in soil(SRC). The sorption isotherm for chlorobenzene onto muck soil (49.0% organic carbon) was linear(5). A K_d value of 166.34 was measured for chlorobenzene using dewatered activated sludge (18% solids) that had been dried and sieved; 3.28% of the chlorobenzene was desorbed during the desorption phase of the experiment(6). Partition coefficients of 0.35, 0.33, and 0.38 were measured for chlorobenzene on primary sludge, mixed liquor solids, and digested sludge, respectively(7). Sorption coefficients of 0.48 and 0.29 were measured on primary sludge and anaerobically digested sludge, respectively(8). Partition coefficients of 48 and 29 were measured in high organic carbon (14.5%) and low organic carbon (3.6%) Sherman Island sediments, respectively(9).

12.5 Other adverse effects

no data available

13: Disposal considerations

13.1 Disposal methods for waste chemicals

Acidic corrosives can be treated with alkaline neutralizers (such as sodium carbonate) until neutralized and then disposed of as ordinary waste. Alkaline corrosives can be treated with acidic neutralizers (such as dilute hydrochloric acid) until neutralized and then disposed of. Those that cannot be neutralized must be incinerated at high temperature or chemically decomposed by a professional unit. The container must be thoroughly cleaned before being disposed of.

13.2 Precautions

Neutralization reactions must be conducted in well-ventilated, dedicated facilities, with the reaction rate controlled to prevent splashing. Disposal personnel must wear corrosion-resistant protective gear. The pH value of the neutralized waste must be controlled between 6 and 9. Direct disposal of unneutralized corrosive materials is prohibited. Emergency pools must be established at the disposal site to prevent leakage and contamination.

14: Transport information

14.1 UN Number

ADR/RID: UN1134

IMDG: UN1134

IATA: UN1134

14.2 UN Proper Shipping Name

ADR/RID: CHLOROBENZENE

IMDG: CHLOROBENZENE

IATA: CHLOROBENZENE

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packing group, if applicable

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: yes

IMDG: yes

IATA: yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Chlorobenzene	Chlorobenzene	108-90-7	270-127-6
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Australian Inventory of Industrial Chemicals (AIIC)			Not Listed.
Catalogue of Strictly Restricted Toxic Chemicals in China			Not Listed.

China Catalog of Hazardous chemicals 2015	Listed.
European INventory of Existing Commercial chemical Substances	Not Listed.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans	Not Listed.
TSCA Inventory of Chemical Substances	Listed.

16: Other information

Information on revision

SDS Creation Date July 1, 2025

SDS Revision Date July 1, 2025

Abbreviations and acronyms in SDS

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

SDS References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Any questions regarding this Safety Data Sheet, Please send your inquiry to sales@MolBest.com

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.