

MATERIAL SAFETY DATA SHEET

Product Name: Chlorobenzene

CAS No.: 108-90-7

Version: 0

1. Identification

Product Code : 90139, 90365
Company Name : Advent Chembio Private Limited
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2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Chlorobenzene	108-90-7	99- 100%

3. Hazards Identification**Hazard classification****Physical hazards**

Flammable liquids : Category 3

Health hazards

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation - vapor) : Category 4

Skin corrosion/irritation : Category 2

Labels elements**Hazard symbol****Signal word** : Warning .**Hazard statement** : Flammable liquid and vapor.
Causes skin irritation.
Harmful if inhaled.
Toxic to aquatic life with long lasting effects.**Precautionary statement****Prevention** : Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/eye protection/face protection. Wash hands thoroughly after handling. Keep container tightly closed. Avoid breathing dust/fume/mist/vapors.

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- Response** : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction.
- Storage** : Store in a well-ventilated place. Keep cool.
- Disposal** : Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
- Other hazards which do not result in GHS classification** : Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

4. First Aid Measures

- General information** : Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. Show this safety data sheet to the doctor in attendance.
- Ingestion** : Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention if symptoms occur .
- Inhalation** : Move to fresh air. Get medical attention if symptoms persist.
- Skin contact** : Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes .
- Eye contact** : Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing.
- Most important symptoms/effects, acute and delayed** : May cause skin and eye irritation .
- Indication of immediate medical attention and special treatment needed** : Treat symptomatically. Symptoms may be delayed.

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5. Fire fighting measures

- General fire hazards** : Flammable liquid and vapor.
- Suitable (and unsuitable) extinguishing media**
- Suitable extinguishing media** : Water spray, foam, dry powder or carbon dioxide.
- Unsuitable extinguishing media** : Avoid water in straight hose stream; will scatter and spread fire.
- Specific hazards arising from the chemical** : Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Heat may cause the containers to explode .
- Special protective equipment and precautions for firefighters**
- Special fire fighting procedures** : Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.
- Special protective equipment for fire-fighters** : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental Release Measures

- Personal precautions, protective equipment and emergency procedures** : ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.
- Methods and material for containment and cleaning up** : Eliminate all ignition sources if safe to do so. Take precautionary measures against static discharges. Stop leak if possible without any risk. Use only non-sparking tools. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.
- Notification Procedures** : Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
- Environmental precautions** : Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

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7. Handling and Storage

- Precautions for safe handling** : DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash hands thoroughly after handling .
- Conditions for safe storage, including any incompatibilities** : Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a cool, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids .

8. Exposure Controls Personal Protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
CHLOROBENZENE	TWA	50 ppm	US. ACGIH Threshold Limit Values (2011)
	PEL	75 ppm 350 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TAW	75 ppm 350 mg/m ³	US. ACGIH Threshold Limit Values (2011)

Appropriate engineering controls : No data available.

Individual protection measures, such as personal protective equipment

- General information** : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.
- Eye/face protection** : Wear safety glasses with side shields (or goggles).
- Hand protection** : Chemical resistant gloves.
- Other** : Wear suitable protective clothing.
- Respiratory protection** : In case of inadequate ventilation use suitable respirator.
- Hygiene measures** : Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

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Appearance	:	Colorless liquid.
Odor	:	Almond-like odor .
pH	:	No data available.
Melting point/freezing point	:	-45.2 °C .
Initial boiling point and boiling range	:	132 °C .
Flash Point	:	28 °C .
Vapor pressure	:	1.57 kPa (25 °C) .
Vapor density	:	3.88 AIR=1 .
Relative density	:	1.11 (20 °C) .
Solubility in water	:	No data available .
	:	ethanol: Soluble
Solubility (other)	:	water: 0.5 g/l .
Formula	:	(C ₆ H ₅ Cl)
Molecular Weight	:	112.56 g/mol .

10. Stability and Reactivity

Reactivity	:	No dangerous reaction known under conditions of normal use .
Chemical stability	:	Material is stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Heat, sparks, flames. Contact with incompatible materials.
Incompatible materials	:	Strong oxidizers.
Hazardous decomposition products	:	Fire or excessive heat may produce hazardous decomposition products.

11. Toxicological Information**Information on likely routes of exposure**

Ingestion	:	May be harmful if swallowed.
Inhalation	:	Harmful if inhaled.
Skin contact	:	Causes skin irritation.
Eye contact	:	Causes eye irritation.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral Product	:	LD 50 (Rat): 2,290 mg/kg LD 50 (Mouse): 1,440 mg/kg LD 50 (Rabbit): 2,250 mg/kg .
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Dermal Product	: No data available.
Inhalation Product	: LC 50 (Rat, 6 h): 13.9 mg/l .
Repeated dose toxicity Product	: No data available.
Skin corrosion/irritation Product	: Causes skin irritation.
Serious eye damage/eye irritation Product	: Causes eye irritation.
Respiratory or skin sensitization Product	: Not a skin sensitizer.
Carcinogenicity Product	: No data available.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans DIOXANE	: No carcinogenic components identified.
US. National Toxicology Program (NTP) Report on Carcinogens DIOXANE	: No carcinogenic components identified.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050	: No carcinogenic components identified.
Germ cell mutagenicity In vitro Product	: No mutagenic components identified .
In vivo Product	: No mutagenic components identified .
Reproductive toxicity Product	: No data available.
Specific target organ toxicity - single exposure Product	: No data available .
Specific target organ toxicity - repeated exposure Product	: No data available .
Aspiration hazard Product	: No data available .
Other effects	: None known.

12. Ecological Information

Ecotoxicity

Acute hazards to the aquatic environment :

Fish Product	: No data available .
Specified substance(s):	LC 50 (Bluegill (Lepomis macrochirus), 96 h): 4.1 - 4.9 mg/l
CHLOROBENZENE	Mortality LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 4.1 - 5.3 mg/l Mortality LC 50 (Fathead minnow (Pimephales promelas), 96 h): 7 - 8.5 mg/l Mortality .
Aquatic invertebrates Product	: No data available.
Specified substance(s):	: EC 50 (Water flea (Daphnia magna), 24 h): 3.25 - 5.7 mg/l
CHLOROBENZENE	Intoxication LC 50 (Water flea (Ceriodaphnia dubia), 24 h): 7.6 mg/l Mortality LC 50 (Water flea (Daphnia magna), 48 h): 9.4 - 12.4 mg/l Mortality

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LC 50 (Water flea (Ceriodaphnia dubia), 48 h): 6.5 - 9.4 mg/l
Mortality
LC 50 (Fleshy prawn (Penaeus chinensis), 96 h): 1.72 mg/l
Mortality .

Chronic hazards to the aquatic environment :

- Fish Product** : No data available.
- Aquatic invertebrates Product** : No data available.
- Toxicity to Aquatic Plants Product:** : No data available.
- Persistence and degradability**
- Biodegradation Product** : There are no data on the degradability of this product.
- BOD/COD ratio Product** : No data available.
- Bioaccumulative potential**
- Bioconcentration factor (BCF) Product** : No data available on bioaccumulation.
- Partition coefficient n-octanol / water (log Kow) Product** : Log Kow: 2.89
- Mobility in soil** : No data available. .
- Other adverse effects** : Toxic to aquatic life with long lasting effects.

13. Disposal consideration

- Disposal instructions** : Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal .
- Contaminated packaging** : Since emptied containers retain product residue, follow label warnings even after container is emptied.

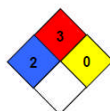
14. Transport Information

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT	UN 1134	Chlorobenzene	3	III	No
IMDG	UN 1134	Chlorobenzene	3	III	No
IATA	UN 1134	Chlorobenzene	3	III	No

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This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. Other Information**NFPA Hazard ID****Issue Date :**01/08/2014**Version :** 0

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