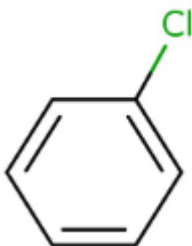


1. General Statement

1-Chlorobenzene is a colorless Liquid Aromatic chlorine compound, Flammable liquid., Vapours may form explosive mixtures with air when the substance is heated above its flash point. This may already be possible at elevated ambient temperatures. Very slightly soluble in water. Medium volatile. Acute or chronic health hazards result from the substance. The substance is hazardous to the aquatic environment.

2. Chemical identity

Name : 1-Chlorobenzene
CAS number(s) : 108-90-7
EC number : 203-628-5
Molecular formula : C₆H₅Cl
Structure :



3. Uses and Benefits

1-Chlorobenzene is used in laboratory chemicals and heat transfer fluids. scientific research and development. it is used for the manufacture of chemicals. Other release to the environment of this substance is likely to occur from indoor use as processing aid and indoor use in closed systems with minimal release (e.g. cooling liquids in refrigerators, oil-based electric heaters).

4. Physical / chemical properties

Property	Value
Physical state :	Liquid
Colour :	Colourless
Odour :	Mild odour Pleasant odour Almond odour Solvent-like odour
pH :	No data available in the literature
Melting point	-46 °C at 101 325 Pa
Boiling point :	131 – 132 °C (1013 hPa)

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Flash point :	28 °C
Density :	1107 kg/m3 (20 °C)
Solubility in Water:	0.02 g/100ml

5. Health Effects

Effect Assessment	Result
Acute toxicity (Oral / inhalation / dermal)	Harmful if inhaled.
Irritation / corrosion Skin / eye/ respiratory tract	Causes skin irritation.
Respiratory or skin sensitisation	NA
Toxicity after repeated exposure Oral / inhalation / dermal	NA.
Genotoxicity / Mutagenicity	NA.
Carcinogenicity	NA
Toxicity for reproduction	NA

6. Environmental Effects

Effect Assessment	Result
Aquatic toxicity	Yes
Fate and behavior	Result
Persistence and degradability	Non degradable in the soil. Not readily biodegradable in water.
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

7. Exposure

Human health

The substance is harmful if inhaled. It causes skin irritation. The most likely route of human exposure (workers) is through skin. In industrial settings, ingestion is not an anticipated route of exposure. Workers may be exposed during (un)loading, mixing, sampling, analysis or maintenance operations and particularly in case of batch processes. The exposure must be kept as minimum as possible by the use of appropriate risk management measures as suitable collective and personal protective equipment, good industrial hygiene practices and risk communication through appropriate training of workers. Careless handling or accidental

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spillage of the chemical could result in exposure to potentially hazardous levels of chemicals. Industrial workers should ensure that they follow the advice found in the extended safety data sheet (SDS).

Environment

Care should be taken to avoid releases of these products to sewage, drainage systems and water bodies. Spillage shall be quickly collected in the event of an accidental release. More information about release measures and accidental release measures are available in the extended safety data sheet.

8. Risk Management Recommendations

Human health measures

Organizational	A basic standard of occupational hygiene is recommended. Ensure operatives are well informed of the hazards and trained to minimise exposures. Ensure regular inspection and maintenance of equipment and machines. Handle and store according to the indications of the Safety Data Sheet.	
Protection	Eye protection:	Protective goggles (EN 166). Safety glasses
	Skin and body protection:	Head/neck protection. Protective clothing (EN 14605 or EN 13034)
	Respiratory protection:	Full face mask with filter type A at conc. in air > exposure limit. [In case of inadequate ventilation] wear respiratory protection.
Engineering controls	Ensure good ventilation of the work station.	
Environment protective measures		
No additional information available		

9. First-aid measures

First-aid measures after inhalation :Remove people to fresh air and keep them comfortable for breathing. Remove the victim into fresh air.In case of respiratory problems, consult a doctor/medical service. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : If possible, wipe up/dry remove chemicals. Then rinse/shower immediately with (lukewarm) water.If irritation persists, consult a doctor/medical service. Rinse skin with water/shower.Remove/Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact :Rinse immediately with (lukewarm) water. Remove contact lenses, if present and easy to do.Continue rinsing. If irritation persists, consult a doctor/medical service. Rinse eyes with water as a precaution.

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First-aid measures after ingestion : Rinse mouth with water. If you feel unwell, consult a doctor/medical service. Do not wait for symptoms to occur to consult the Poison Center. Call a poison center or a doctor if you feel unwell.

10. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (not alcohol-resistant). Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media :Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire :On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide -carbon dioxide).

Advice for firefighters

Precautionary measures fire : Exposure to fire/heat: consider evacuation.

Firefighting instructions :Fight fire from safe distance and protected location. Do not enter a fire area without proper protective equipment, including respiratory protection.

11. Accidental release measures

Protective equipment :Gloves (EN 374). Protective goggles (EN 166). Head/neck protection. Protective clothing (EN 14605 or EN 13034). Large spills/in enclosed spaces: gas-tight suit (EN 943). Large spills/unenclosed spaces: self-contained breathing apparatus (EN 136 + EN 137).

Environmental precautions: Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers.

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute/disperse combustible gas/vapour with a water curtain. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leaks without risks if possible.

12. Disposal consideration

Regional legislation (waste) : Disposal must be done according to official regulations.

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Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Sewage disposal recommendations : Disposal must be done according to official regulations.

13. Handling and storage

Precautions for safe handling: Keep away from naked flames/heat. Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Work under local exhaust/ventilation. Comply with the legal requirements. Clean contaminated clothing. Keep the container tightly closed. Handle uncleaned empty containers as full ones. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

Hygiene measures Observe strict hygiene. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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14. Classification and Labeling

Hazard pictograms (GHS US)	:	 
Signal word (GHS US)	:	Warning
Hazard statements (GHS US)	:	H226 - Flammable liquid and vapor H315 - Causes skin irritation H332 - Harmful if inhaled
Precautionary statements (GHS US)	:	P210 - Keep away from heat, hot surfaces, 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, lighting, ventilating equipment. P242 - Use non-sparking tools. P243 - Take action to prevent static discharges. P261 - Avoid breathing dust, fume, gas, mist, spray, vapours. P264 - Wash hands, forearms and face thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear protective gloves. 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/shower. P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing. P312 - Call a POISON CENTER, a doctor if you feel unwell. P321 - Specific treatment (see supplemental first aid instruction on this label). P332+P313 - If skin irritation occurs: Get medical advice or attention. P362+P364 - Take off contaminated clothing and wash it before reuse. P370+P378 - In case of fire: Use appropriate media to extinguish. P403+P235 - Store in a well-ventilated place. Keep cool. P501 - Dispose of hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

15. Conclusion

1-Chlorobenzene is toxic to aquatic life with long lasting effects, is a flammable liquid and vapour, is harmful if inhaled and causes skin irritation. Care should be taken to avoid releases of these products to sewage, drainage systems and water bodies. The exposure must be kept as minimum as possible by the use of appropriate risk management measures as suitable collective and personal protective equipment, good industrial hygiene practices and risk communication through appropriate training of workers.

16. Contact Information within company

Manufacturer

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This GPS safety summary is intended to give general information about the health, safety and environmental and not intended to provide in-depth details. To obtain the most accurate and current information, consult the appropriate Safety Data Sheet (SDS) prior to use of the material named herein.