

## Chemical Safety Data Sheet MSDS / SDS

## 1,2-dichlorobenzene SDS

Revision Date:2024-04-25 Revision Number:1

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name: 1,2-dichlorobenzene

CAS: 95-50-1

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses: For R&amp;D use only. Not for medicinal, household or other use.

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

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**SECTION 2: Hazards identification****Classification of the substance or mixture**Acute toxicity - Category 4, Oral  
Skin irritation, Category 2

Eye irritation, Category 2  
Specific target organ toxicity - single exposure, Category 3  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

### GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

### Hazard statement(s)

H302 Harmful if swallowed  
H315 Causes skin irritation  
H319 Causes serious eye irritation  
H335 May cause respiratory irritation  
H410 Very toxic to aquatic life with long lasting effects

### Precautionary statement(s)

### Prevention

P264 Wash ... thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.

### Response

P301+P317 IF SWALLOWED: Get medical help.  
P330 Rinse mouth.  
P302+P352 IF ON SKIN: Wash with plenty of water/...  
P321 Specific treatment (see ... on this label).  
P332+P317 If skin irritation occurs: Get medical help.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P319 Get medical help if you feel unwell.  
P391 Collect spillage.

#### **Storage**

P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

#### **Disposal**

P501 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 classification**

no data available

### **SECTION 3: Composition/information on ingredients**

#### **Substance**

Chemical name:	1,2-dichlorobenzene
Common names and synonyms:	1,2-dichlorobenzene
CAS number:	95-50-1
EC number:	202-425-9
Concentration:	100%

### **SECTION 4: First aid measures**

#### **Description of necessary first-aid measures**

##### **If inhaled**

Fresh air, rest. Refer for medical attention.

##### **Following skin contact**

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

**Following eye contact**

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

**Following ingestion**

Rinse mouth. Give one or two glasses of water to drink. Do NOT induce vomiting. Refer for medical attention .

**Most important symptoms/effects, acute and delayed**

Chronic inhalation of mist or vapors may result in damage to lungs, liver, and kidneys. Acute vapor exposure can cause symptoms ranging from coughing to central nervous system depression and transient anesthesia. Irritating to skin, eyes, and mucous membranes. May cause dermatitis. (USCG, 1999)

**Indication of immediate medical attention and special treatment needed, if necessary**

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Lindane and related compounds

**SECTION 5: Firefighting measures****Suitable extinguishing media**

Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Use water spray, dry chemical, foam, or carbon dioxide. Use water spray to keep fire-exposed containers cool. Extinguish fire using agent suitable for surrounding fire.

**Specific hazards arising from the chemical**

Special Hazards of Combustion Products: Poisonous vapors including hydrogen chloride gas, chlorocarbons, chlorine (USCG, 1999)

**Special protective actions for fire-fighters**

Use water spray, powder, foam, carbon dioxide.

**SECTION 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### **Environmental precautions**

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### **Methods and materials for containment and cleaning up**

Land spill: Dig a pit, pond, lagoon, or holding area to contain liquid or solid material. /SRP: If time permits, pits, ponds, lagoons, soak holes or holding areas should be sealed with an impermeable flexible membrane liner. / Dike surface flow using soil, sand bags, foamed polyurethane, or concrete. Absorb bulk liquid with fly ash, or cement powder. Apply "universal" gelling agent to immobilize spill.

## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

NO open flames. Above 66°C use a closed system and ventilation. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### **Conditions for safe storage, including any incompatibilities**

Separated from aluminium, oxidants and food and feedstuffs. Store in cool, dry, well-ventilated location. Separate from oxidizing materials.

## **SECTION 8: Exposure controls/personal protection**

### **Control parameters**

### **Occupational Exposure limit values**

TLV: 25 ppm as TWA; 50 ppm as STEL; A4 (not classifiable as a human carcinogen). MAK: 61 mg/m<sup>3</sup>, 10 ppm; peak limitation category: II(2); skin absorption (H); pregnancy risk group: C. EU-OEL: 122 mg/m<sup>3</sup>, 20 ppm as TWA; 306 mg/m<sup>3</sup>, 50 ppm as STEL; (skin)

### **Biological limit values**

no data available

### **Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### **Individual protection measures, such as personal protective equipment (PPE)**

#### **Eye/face protection**

Wear face shield.

#### **Skin protection**

Protective gloves. Protective clothing.

#### **Respiratory protection**

Use ventilation, local exhaust or breathing protection.

#### **Thermal hazards**

no data available

## **SECTION 9: Physical and chemical properties and safety characteristics**

Physical state:	Liquid.
Colour:	Colorless liquid
Odour:	Pleasant odor
Melting point/freezing point:	Ca. -17.03 °C.
Boiling point or initial boiling point and boiling range:	Ca. 180.5 °C. Atm. press.:1 013.25 hPa.
Flammability:	Class IIIA Combustible Liquid: FL.P. at or above 140°F and below 200°F.

Lower and upper explosion limit/flammability limit:	2 TO 9% BY VOL IN AIR
Flash point:	Ca. 151 °F.;Ca. 66 °C.
Auto-ignition temperature:	Ca. 640 °C. Remarks:Pressure not reported.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	dynamic viscosity (in mPa s) = Ca. 1.324. Temperature:25.0°C.
Solubility:	less than 1 mg/mL at 76.1° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = Ca. 3.433. Temperature:25 °C. Remarks:PH value.
Vapour pressure:	Ca. 1.56 mm Hg. Temperature:Ca. 25 °C. Remarks:This is equivalent to 2.08 hPa.
Density and/or relative density:	Ca. 1.306 g/cm <sup>3</sup> . Temperature:20 °C.;Ca. 1.3 g/cm <sup>3</sup> . Temperature:25 °C.
Relative vapour density:	5.1 (vs air)
Particle characteristics:	no data available

## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on burning. This produces toxic and corrosive gases including hydrogen chloride. Reacts with aluminium and oxidants. Attacks plastics and rubber.

### Chemical stability

no data available

**Possibility of hazardous reactions**

Combustible liquid. O-DICHLOROBENZENE is sensitive to prolonged exposure to light. This chemical can react vigorously with oxidizers. It is incompatible with aluminum and aluminum alloys. It attacks some forms of plastics, rubber and coatings. (NTP, 1992).

**Conditions to avoid**

no data available

**Incompatible materials**

Strong oxidizers, aluminum, chlorides, acids, acid fumes.

**Hazardous decomposition products**

When heated to decomposition it emits toxic /hydrogen/ chloride fumes.

**SECTION 11: Toxicological information****Acute toxicity**

Oral: LD50 - rat (male/female) - > 2 000 mg/kg bw.

Inhalation: LC50 - mouse (female) - 1 236 ppm.

Dermal: no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/irritation**

no data available

**Respiratory or skin sensitization**

no data available



### **Germ cell mutagenicity**

no data available

### **Carcinogenicity**

NTP: Reasonably anticipated to be a human carcinogen

### **Reproductive toxicity**

no data available

### **STOT-single exposure**

The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the central nervous system and liver. Exposure could cause lowering of consciousness.

### **STOT-repeated exposure**

The substance defats the skin, which may cause dryness or cracking. The substance may have effects on the kidneys and blood.

### **Aspiration hazard**

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

## **SECTION 12: Ecological information**

### **Toxicity**

Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 1.58 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - *Ceriodaphnia dubia* - 4.5 µmol/L - 48 h.

Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - 2.2 mg/L - 96 h.

Toxicity to microorganisms: IC50 - *Nitrosomonas* sp. - 47 mg/L - 24 h.

### **Persistence and degradability**

AEROBIC: 1,2-Dichlorobenzene at 100 mg/L achieved 0% of its theoretical BOD using an activated sludge inoculum at 30 mg/L over a 4 week incubation period in the Japanese MITI test(1). 1,2-Dichlorobenzene was resistant to biodegradation in another Japanese

MTI test study(2). Dichlorobenzene isomers were slowly biodegraded (6.3% of theoretical CO<sub>2</sub> evolution in 10 weeks) in an alkaline soil sample(3). The rate constant for 1,2-dichlorobenzene in a heterogeneous aquifer at the Columbus Air Force Base, Mississippi was 0.0059 days<sup>-1</sup>, corresponding to a biodegradation half-life of about 117 days(4). 1,2-Dichlorobenzene is resistant to biodegradation in soils, with half-lives expected to be greater than 9 months(5).

### **Bioaccumulative potential**

The sorption of 8 organic compounds by a representative green alga, *Selenastrum capricornutum*, was determined by GLC by a series of linear model experiments. The log<sub>10</sub> bioconcentration factors (BCF), defined as the ratio of the concentration on/in the algae to the concentration in the aqueous medium, were as follows: benzene 3.32, toluene 3.18, chlorobenzene 3.69, 1,2-dichlorobenzene 4.17. The relation of log<sub>10</sub> BCF correlation with log<sub>10</sub> octanol-water partition coefficient (P) was determined to be  $\log_{10} \text{BCF} = 0.46 \log_{10} P + 2.36$ .

### **Mobility in soil**

Experimental K<sub>oc</sub> values of 280(1) and 320(2) were determined for 1,2-dichlorobenzene in silt loam soils. A log K<sub>oc</sub> value of 3.7 was reported for 1,2-dichlorobenzene in sediment obtained from the Ise Bay, Japan(3) and a log K<sub>oc</sub> value of 4.3 was measured from sediment of Lake Ketelmeer, Netherlands(4). According to a recommended classification scheme(5), these soil K<sub>oc</sub> values suggest that 1,2-dichlorobenzene has moderate mobility in soil(SRC).

### **Other adverse effects**

no data available

## **SECTION 13: Disposal considerations**

### **Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## SECTION 14: Transport information

### UN Number

ADR/RID: UN1591 (For reference only, please check.)

IMDG: UN1591 (For reference only, please check.)

IATA: UN1591 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: o-DICHLOROBENZENE (For reference only, please check.)

IMDG: o-DICHLOROBENZENE (For reference only, please check.)

IATA: o-DICHLOROBENZENE (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)

IATA: 6.1 (For reference only, please check.)

### Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

### Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

### Special precautions for user

no data available

### Transport in bulk according to IMO instruments

no data available

## **SECTION 15: Regulatory information**

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

**European Inventory of Existing Commercial Chemical Substances (EINECS)**

Listed.

**EC Inventory**

Listed.

**United States Toxic Substances Control Act (TSCA) Inventory**

Listed.

**China Catalog of Hazardous chemicals 2015**

Listed.

**New Zealand Inventory of Chemicals (NZIoC)**

Listed.

**(PICCS)**

Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC)**

Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

## **SECTION 16: Other information**

**Abbreviations and acronyms**

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%

### 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?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=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/>

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