

SAFETY DATA SHEET



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O-DICHLOROBENZENE

SDS No. M0059

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: o-Dichlorobenzene

Synonyms: DCB; 1,2-Dichlorobenzene; ortho-Dichlorobenzene; Dichlorobenzol.

Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

2. HAZARDS IDENTIFICATION



Classification:

Flammable Liquids: GHS Category 4

Acute Toxicity, Oral: GHS Category 4

Skin Irritation: GHS Category 2

Eye Irritation: GHS Category 2A

Acute Aquatic Toxicity: GHS Category 1

Chronic Aquatic Toxicity: GHS Category 1

Label Elements

Signal Word: DANGER!

Hazard Statements:

H227 – Combustible liquid and vapor.

H302 – Harmful if swallowed.

H315 – Causes skin irritation.

H319 – Causes serious eye irritation.

H332 – Harmful if inhaled.

H335 – May cause respiratory irritation.

H410 – Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

P210 – Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P264 – Wash skin thoroughly after handling.

P273 – Avoid release to the environment.

P280 – Wear protective gloves/ protective clothing/ eye protection/ face protection.

Clear focus. Consistent results. Complete confidence.

P301+P312+P330 – IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

P302+P352 – IF ON SKIN: Wash with plenty of soap and water.

P304+P340+P312 – IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403+P233 – Store in a well-ventilated place. Keep container tightly closed.

P405 – Store locked up.

P501 – Dispose of contents/ container to an approved waste disposal plant.

Emergency Overview

Cause irritation to eyes, skin, digestive tract, and respiratory tract. Harmful if swallowed. May cause central nervous system depression. This chemical has caused adverse reproductive and fetal effects in animals. Light sensitive. Combustible liquid and vapor. Target Organs: Kidneys, liver, and central nervous system

HMIS Rating:

Health – 2* Flammability – 2 Physical Hazard – 1 PPE – User supplied

NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS No</u>	<u>Percent</u>	<u>Hazardous</u>
Dichlorobenzene	95-50-1	>99%	Yes

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Skin Contact: Remove any contaminated clothing. Wash skin with water for at least 15 minutes. Get medical attention if irritation persists.

Eye Contact: Check for and remove contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention.

Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flammability: Combustible liquid and vapor (GHS Category 4)

Auto-ignition Temperature: 640° C (1184° F)

Flash Point: 67° C (152.6° F)

Flammable Limits: Lower Limit – 2.2 vol %, Upper Limit – 12.0 vol %

Products of Combustion: May decompose into irritating and highly toxic gases under fire conditions (hydrogen chloride, chlorine, carbon monoxide, and carbon dioxide).

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Combustion generates toxic fumes. Use water spray to keep fire-exposed containers cool. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated.

Fire Fighting Media: Use water fog, dry chemical, carbon dioxide, or regular foam. Use agent most appropriate to extinguish fire. Cool containers with flooding quantities of water until well after fire is out.

National Fire Protective Association: Health - 2, Flammability - 2, Reactivity - 0

NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

6. ACCIDENTAL RELEASE MEASURES

Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Do not use sawdust or any combustible material. Avoid runoff to ditches and storm sewers that lead to water ways. Use spark-proof tools. Provide ventilation to the affected area and remove all ignition sources. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Always use proper personal protective equipment as described in section 8.

7. HANDLING AND STORAGE

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Empty containers contain product residue (liquid and vapor) and can be dangerous. Keep container tightly closed and away from heat, spark, and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks, or open flames. Use with adequate ventilation. Avoid breathing vapor or mist.

Storage: Keep in a flammables area away in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protection: Wear protective chemical goggles or other appropriate eye protection. Use butyl rubber gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Exposure Limits:

ACGIH – 25 ppm TWA; 50 ppm STEL

NIOSH – 200 ppm IDLH

OSHA Final PELs – 50 ppm Ceiling; 300 mg/m³ Ceiling

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless to light yellow liquid.

Odor: Aromatic odor

Odor Threshold: 50 ppm

Molecular Formula: C₆H₄Cl₂

Molecular Weight: 147.00

Auto-ignition Temperature: 640° C (1184° F)

Flash Point: 67° C (152.6° F)

Flammable Limits: Lower Limit – 2.2 vol %, Upper Limit – 12.0 vol %

pH: Not available.

Boiling Point: 178-180° C @ 760 mm Hg

Freezing/Melting Point: -15° C

Decomposition Temperature: Not available

Specific Gravity: 1.306 g/cm³

Vapor Density (Air=1): 5.05

Vapor Pressure: 11.5 mm Hg @ 25° C.

Evaporation Rate (Butyl acetate = 1) : <1.0

Viscosity: Not Available

Solubility: 0.13 g/L @ 20° C in water

Conductivity: Semiconductive; Conductivity = 3000 pS/m; Dielectric Constant = 9.93; Relaxation Time Constant = 2.9x10⁻³ seconds

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperature and pressure.

Conditions to Avoid: High temperatures.

Incompatibility With Various Substances: Strong oxidizing agents, acids, aluminum.

Hazardous Decomposition Products: Hydrogen chloride, chlorine, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact

Acute Exposure Hazards:

INHALATION HAZARD: May cause respiratory tract irritation. May cause liver and kidney damage. May cause drowsiness, unconsciousness, and central nervous system depression.

INGESTION HAZARD: Harmful if swallowed. May cause central nervous system depression, kidney damage, and liver damage.

SKIN CONTACT HAZARD: Causes irritation with burning pain, itching, and redness.

EYE CONTACT HAZARD: Contact produces irritation, tearing, and burning pain. Vapors cause eye irritation.

Chronic Exposure Hazards: Prolonged or repeated exposure may cause adverse reproductive effects. May cause liver and kidney damage. May cause fetal effects.

Animal Toxicity:

Inhalation, rat: LC50 = 8150 mg/m³/4H;

Oral, mouse: LD50 = 4386 mg/kg;

Oral, rabbit: LD50 = 500 mg/kg;

Oral, rat: LD50 = 500 mg/kg;

Skin, rabbit: LD50 = >10 gm/kg;

Carcinogenicity: ACGIH – A4, not classified as a human carcinogen; IARC Group 3 – not classifiable; not listed as a carcinogen by NTP or CA Prop 65

Epidemiology: No information available.

Teratogenicity: Specific Developmental Abnormalities: Musculoskeletal, inhalation-rat TCl₀=200ppm/6H.

Reproductive Effects: Paternal Effects: Spermatogenesis, intraperitoneal-rat TDLo=50mg/kg.

Mutagenicity: No information available.

Neurotoxicity: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Toxicity to fish: flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 1.58 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates: static test EC50 - Ceriodaphnia dubia (water flea) - 0.66 mg/l - 48 h

Toxicity to algae: growth inhibition EC50 - Pseudokirchneriella subcapitata - 2.2 mg/l - 96 h

Environmental Fate: Terrestrial: Can be moderately to tightly adsorbed in soil. Volatilization from soil surfaces may be an important transport mechanism. Aquatic: Adsorption to sediment is a major environmental fate process. Atmospheric: Will exist predominantly in the vapor- phase. The half-life with photochemically produced hydroxyl radicals in the atmosphere has been estimated to be 28 days. Expected to not readily be biodegradable.

13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

US DOT, IATA, IMO

Proper Shipping Name: o-Dichlorobenzene

Hazard Class: 6.1

UN Number: UN1591

Packing Group: III

Canada TDG

Additional Information: Not available

15. REGULATORY INFORMATION

US Federal Regulations:

TSCA: CAS# 95-50-1 is listed on the TSCA Inventory.

Health and Safety Reporting List: Not listed.

Chemical Test Rules: CAS# 95-50-1: Not Listed.

Section 12b: Not listed.

TSCA Significant New Use Rule: Does not have an SNUR under TSCA.

CERCLA Hazardous Substances: CAS# 95-50-1; 100 lbs

SARA Section 302: Does not have a TPQ

SARA Codes: CAS# 95-50-1 – acute, chronic, flammable

Section 313: Dichlorobenzene (CAS# 95-50-1) is subject to SARA Title III Section 313 and 40 CFR 373 reporting requirements.

Clean Air Act: CAS# 95-50-1 is not listed as a hazardous air pollutant (HAP). It is not a Class 1 Ozone Depleter. It is not a Class 2 Ozone Depleter.

Clean Water Act: CAS# 95-50-1 is listed as a Hazardous Substance. It is listed as a Priority Pollutant. It is listed as a Toxic Pollutant.

OSHA: Not considered highly hazardous by OSHA.

US State Regulations:

CAS# 95-50-1 is on the following state right-to-know lists: California, New Jersey, Pennsylvania, Minnesota, and Massachusetts

California Prop 65: California No Significant Risk Level: Not listed

Canada:

DSL/NDSL: CAS# 95-50-1 is listed on Canada's DSL list.

WHMIS: This product does not have a WHMIS classification.

Ingredient Disclosure List: CAS# 95-50-1 is listed on Canada's Ingredient Disclosure List.

DSCL (EEC):

Hazard Symbols: Xn, N

Risk Phrases: R22 - Harmful if swallowed; R36/37/38 - Irritating to eyes, respiratory system and skin; R50/53 - Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.
Safety Phrases: S23 - Do not inhale gas/fumes/vapor/spray; S60 - This material and/or its container must be disposed of as hazardous waste; S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets.
WGK (Water Danger/protection): CAS# 95-50-1: 2

16. OTHER INFORMATION

Originally Prepared: 1/1/2006

Last Revised: 07/02/2018 – Updated GHS information, updated ecological data.

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.

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