

Safety Data Sheet

1. Chemical product and company identification

Product name : o-Dichlorobenzene

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.
 Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
 Name of section : Business Administration Department, Reagent Division
 Telephone number : +81-3-6214-1090
 Facsimile number : +81-3-3241-1047
 Mail address : BC32@kanto.co.jp
 Reference No : 10127
 Product numbers applied by the SDS : 10127, 10160
 Recommended use : For research use only
 Restrictions on use : Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Physical hazards	Flammable liquids	Category 4
Health hazards	Acute toxicity (oral)	Category 4
	Acute toxicity (inhalation:vapors)	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2B
	Specific target organ toxicity (single exposure)	Category 1 (liver, kidney)
	Specific target organ toxicity (single exposure)	Category 3 (narcosis)
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)
	Specific target organ toxicity (repeated exposure)	Category 1 (nervous system, liver, respiratory organs, blood)
Environmental hazards	Aquatic acute	Category 1
	Aquatic chronic	Category 1

Hazard pictograms



Signal word : Danger

Hazard statements : Combustible liquid
 Harmful if swallowed or if inhaled
 Causes skin and eye irritation



May cause respiratory irritation
 May cause drowsiness or dizziness
 Causes damage to organs (liver, kidney)
 Causes damage to organs (nervous system, liver, respiratory organs, blood) through prolonged or repeated exposure
 Very toxic to aquatic life
 Very toxic to aquatic life with long lasting effects

Precautionary statements

- Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Do not breathe mist/vapors.
 Wash hands, forearms and face thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Avoid release to the environment.
 Wear protective gloves/protective clothing/eye protection/face protection.
- Response : IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
 IF ON SKIN: Wash with plenty of water.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 IF IN EYES: Rinse cautiously with water for several minutes.
 Remove contact lenses, if present and easy to do. Continue rinsing.
 IF exposed or concerned: Call a POISON CENTER or doctor.
 Call a POISON CENTER or doctor if you feel unwell.
 Get medical advice/attention if you feel unwell.
 Rinse mouth.
 If skin irritation occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 Take off contaminated clothing and wash it before reuse.
 Collect spillage.
- Storage : Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.
- Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
o-Dichlorobenzene	≥ 99	C6H4Cl2	Listed	202-425-9	95-50-1

4. First aid measures

First aid measures

- First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle. If necessary, get medical treatment.
- First-aid measures after skin contact : Wash the affected areas under running water.



First-aid measures after eye contact	: Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment.
First-aid measures after ingestion	: The chemical is volatile. Do not induce vomiting because it increases the risk of aspiration into the lungs. Get medical attention immediately. If necessary, rinse mouth with water.
Personal Protection in First Aid and Measures	: Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media	: Dry chemical, CO ₂ , dry sand, or alcohol-resistant foam
Unsuitable extinguishing media	: Water spray, Foam extinguisher
Firefighting instructions	: Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area. Fight fire from windward. Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Alcohol-resistant foam extinguisher is effective for a large scale fire.
Personal protection (Emergency response)	: Wear breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures	: Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.
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Environmental precautions

Environmental precautions	: Attention should be given to avoid damage to the environment by flowing of spillage to rivers.
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Methods and Equipment for Containment and Cleaning up

For containment	: Absorb spill with inert material (e.g, diatomaceous earth, sand) and flush spillage area with copious amounts of water.
Prevention Measures for Secondary Accidents	: Remove nearby sources of ignition and prepare extinguishing media.

7. Handling and storage

Handling

Technical measures	: Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Fire is strictly prohibited. Ventilate well at working places. As a small amount of PCB(poly chlorinated biphenyls) may be produced by light, protect from light during handling.
Precautions for safe handling	: Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas. Do not allow contact with oxidizing substances.

Storage



Storage conditions : Store in a dark, cool place and tightly closed.
 Material used in : Glass, fluorine resin.
 packaging/containers

8. Exposure controls / Personal protection equipment

ACGIH TWA	25 ppm
ACGIH STEL	50 ppm

Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection : If necessary, wear chemical cartridge respirator with an organic vapor cartage

Hand protection : Organic solvents resistant gloves

Eye protection : Safety goggles

Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

Physical state : Liquid
 Color : Colorless.
 Odor : Aromatic
 pH : No data available
 Melting point : -17.01 ° C
 Freezing point : No data available
 Boiling point : 180.48 ° C
 Flash point : 71.5 ° C (C.C.)
 Auto-ignition temperature : 648 ° C
 Decomposition temperature : No data available
 Flammability : Flammable
 Vapor pressure : 1.6 hPa (20°C)
 Relative density : 1.305 - 1.311 (20/20°C)
 Density : No data available
 Relative gas density : 5.07
 Solubility : Organic solvents; Readily soluble in many kinds of organic solvents like ethanol, diethyl ether, benzene, carbon tetrachloride.
 Water: 0.015 % (25°C)
 Partition coefficient n-octanol/water (log Pow) : 3.43
 Explosive limits (vol %) : 22.2 - 9.2 vol %
 Viscosity, kinematic : 1.014 mm²/s (25°C)
 Particle characteristics : No data available

10. Stability and reactivity

Reactivity : May react with oxidizing substances.
 Chemical stability : Stable under normal conditions. A small amount of PCB may be produced by light.



Possibility of hazardous reactions	: Stable under normal conditions of use.
Conditions to avoid	: Light, heat.
Incompatible materials	: Oxidizing substances.
Hazardous decomposition products	: Carbon monoxide, chlorine, hydrogen chloride.

11. Toxicological information

Acute toxicity (oral)	: Harmful if swallowed rat LD50=500mg/kg
Acute toxicity (dermal)	: Classification not possible
Acute toxicity (inhalation)	: No classification (gas) Harmful if inhaled (vapor) rat LC50=3753ppm/4h Classification not possible (dust, mist)
Skin corrosion/irritation	: Causes skin irritation There is a report that in a skin irritation test with rabbits, slight to moderate erythema and edema were observed 72 hours after 4-hour application of 0.5 mL of an undiluted solution of this substance. It is also reported that edema and blisters were observed as a result of application of this substance in humans. From the above, this substance was classified into category 2.
Serious eye damage/irritation	: Causes eye irritation It is reported that slight irritation was observed as a result of application of two drops of an undiluted solution of this substance in the eyes of rabbits (Hazard Assessment Report. It is also reported that eye irritation was observed in occupational exposure. From the above, this substance was classified into category 2B.
Respiratory sensitization	: Classification not possible
Skin sensitization	: Classification not possible
Germ cell mutagenicity	: Classification not possible As for in vivo, micronucleus tests with bone marrow cells of mice dosed intraperitoneally were positive and negative results, a micronucleus test with rats dosed subcutaneously was negative, a chromosome aberration test with bone marrow cells of rats dosed intraperitoneally was negative, and a replicative DNA synthesis test with mice and DNA-binding tests in rats and mice were negative. As for in vitro, bacterial reverse mutation tests and mammalian cell genetic mutation tests were negative, but in a mouse lymphoma test, a chromosome aberration test, and a sister chromatid exchange test with cultured mammalian cells, positive results were reported in a metabolic activation system.
Carcinogenicity	: No classification IARC classifies it as group 3(not classifiable as to its carcinogenicity to humans).



Reproductive toxicity	: Classification not possible There was no finding that clearly showed reproductive and developmental toxicity in experimental animals. However, the developmental toxicity tests by the inhalation and oral routes were insufficiently described and provided a limited test result. Therefore, it was thought that there was a limitation to use it for classification from the viewpoint of reliability. Meanwhile, there is a description that dose-dependent morphological abnormalities were reported in the head, acrosome, and tail of sperm in a test in which male rats were given a single intraperitoneal dose at doses 50-800 mg/kg. Taken together, it was concluded that there was insufficient data to classify this substance as "Not classified" at the present time.
STOT-single exposure	: Causes damage to organs (liver, kidney) May cause drowsiness or dizziness May cause respiratory irritation This substance is a respiratory tract irritant. In humans, there are reports of narcotic effects and fatal paralysis by inhalation exposure at high concentrations, and vomiting, diarrhea, toxic hepatitis, and nephritis by ingestion. As for experimental animals, in inhalation exposure with rats and mice, weakness, centrilobular hepatocellular necrosis, and kidney tubule damage at doses corresponding to category 1, and narcotic effects at higher concentrations were observed. In oral doses with rats and mice, centrilobular hepatocellular hypertrophy, hepatocellular vacuolar degeneration, and an increase in hepatocellular proliferation with hepatocellular necrosis at doses corresponding to category 1, and lateral position, decreased locomotor activity, closed eyelid, gait disturbance, tremors, irregular respiration, and centrilobular hepatocellular hypertrophy at doses corresponding to category 2 were observed. Therefore, it was classified into category 1 (liver, kidney), category 3 (respiratory tract irritation, narcosis).
STOT-repeated exposure	: Causes damage to organs (nervous system, liver, respiratory organs, blood) through prolonged or repeated exposure In humans, polyneuropathy, liver damage, irritation to the nasal cavity and respiratory tract, bone marrow hyperplasia, acute haemolytic anaemia, leukocytosis, etc. were seen. As for experimental animals, there is a report that in a 90-day oral toxicity test with rats dosed by gavage, centrilobular hepatocellular hypertrophy and centrilobular single cell necrosis in the liver, and eosinophilic intracytoplasmic inclusion bodies in the proximal tubules of the kidney were observed at or above 100 mg/kg/day, which is within the range of category 2. There is a report that in a 2-generation reproductive toxicity study with rats by the inhalation route, liver hypertrophy and effects on the kidneys were observed at or above 150 ppm, which is within the range of category 2. There is a report that in a 192-day inhalation toxicity study with rats, pneumonia was observed at 0.02 mg/L, which is within the range of category 1. Therefore, this substance was classified into category 1 (nervous system, liver, respiratory organs, blood).
Aspiration hazard	: Classification not possible



12. Ecological information

Ecotoxicity

Aquatic acute : Very toxic to aquatic life
Ceriodaphnia dubia LC50=0.66mg/L/48h

Aquatic chronic : Very toxic to aquatic life with long lasting effects
Daphnia magna NOEC=0.10mg/L/21-day

Persistence and degradability

Not readily biodegradable
BOD : 0%

Bioaccumulative potential

Low bioconcentration
BCF : 150-230 (0.1mg/L), 90-260 (0.01mg/L)

Mobility in soil

Moderate mobility
Koc : 380

Hazardous to the ozone layer

Ozone : Classification not possible

13. Disposal considerations

Ecological waste information : Mixed with flammable organic solvents and burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.
The incinerator should be suitable for burning organic halogen compounds.
Alkaline solution should be used for cleaning liquid of the scrubber.

Contaminated container and packaging : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG) : 1591
Proper Shipping Name (IMDG) : o-DICHLOROBENZENE
Packing group (IMDG) : III
Transport hazard class(es) (IMDG) : 6.1

Air transport(IATA)

UN-No. (IATA) : 1591
Proper Shipping Name (IATA) : o-Dichlorobenzene
Packing group (IATA) : III
Transport hazard class(es) (IATA) : 6.1

Marine pollutant : Applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollutant category : X
MFAG-No : 152



15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : Dictionary of Organic Compounds, The society of Synthetic Organic Chemistry, Kodansha Ltd. (1985) .
Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd. (1976) .
Registry of Toxic Effects of Chemical Substances (RTECS) 1985-86 ed. National Instituted for Occupational Safety and Health (1987) .
NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet (SDS) is prepared based on JIS Z7253.

