



Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: 1,2-Dichlorobenzene(o-)

SDS No. : 2275E-2

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification

GHS classification and label elements of the product**Classification of the substance or mixture****PHYSICAL AND CHEMICAL HAZARDS**

Flammable liquids: Category 4

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Acute toxicity (Inhalation): Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Specific target organ toxicity – single exposure: Category 1(liver; kidney)

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – single exposure: Category 3(Narcosis)

Specific target organ toxicity – repeated exposure: Category 1(nervous system; liver; respiratory system; blood system)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 1

Hazardous to the aquatic environment (Long-term): Category 1

Label elements

Signal word: Danger

HAZARD STATEMENT

Combustible liquid

Harmful if swallowed

Harmful if inhaled

Causes skin irritation

Causes serious eye irritation

Causes damage to organs(liver; kidney)

May cause respiratory irritation

May cause drowsiness or dizziness

Causes damage to organs through prolonged or repeated exposure(nervous system; liver; respiratory system; blood system)

Very toxic to aquatic life with long lasting effects

**PRECAUTIONARY STATEMENT****Prevention**

Avoid release to the environment.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

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

Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media to extinguish.

Collect spillage.

Get medical advice/attention if you feel unwell.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF exposed or concerned: Call a POISON CENTER/doctor/physician.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

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

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

IF SWALLOWED: Rinse mouth.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards

Heating may cause fire.

3. Composition/information on ingredients**Mixture/Substance selection:****Substance**

Ingredient name:1,2-Dichlorobenzene(o-)

Content (%):98(min)

Chemical formula:C6H4Cl2

Chemicals No, Japan:3-41

CAS No.:95-50-1

MW:147.0

ECNO:202-425-9

Note : The figures shown above are not the specifications of the product.

Impurities

1,4-Dichlorobenzene $\leq 0.40\%$ (CAS No.106-46-7)

Polychlorobiphenyl (PCB) Extremely small amount (CAS No.1336-36-3)



4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.

Call a POISON CENTER/doctor/physician if you feel unwell.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use foam, dry powder, CO₂ to extinguish.

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment

Sprinkler equipment

Dry-powder firefighting equipment – except for phosphate etc.,hydrogen carbonate etc.

Straight stream water extinguisher

Water mist extinguisher

Reinforcing liquid jet extinguisher

Dry-powder extinguisher – except for phosphate etc.,hydrogen carbonate etc.

Bucket of water or tank of water

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

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

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Methods and materials for containment and cleaning up



Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

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

When using do not eat, drink or smoke.

Form polychlorobiphenyl by light. In use, block out light.

Any incompatibilities

See "10.Stability and Reactivity"

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Form polychlorobiphenyl by light. Store in a cool, block out light.

Container and packaging materials for safe handling

Glass

8. Exposure controls/personal protection

Control parameters

Adopted value

(1,2-Dichlorobenzene(o-))

ACGIH(1996) TWA: 25ppm;

STEL: 50ppm (URT & eye irr; liver dam)

(1,4-Dichlorobenzene)

ACGIH(1993) TWA: 10ppm (Eye irr; kidney dam)

OSHA-PEL

(1,2-Dichlorobenzene(o-))

STEL: C 50ppm, 300mg/m³

(1,4-Dichlorobenzene)

TWA: 75ppm, 450mg/m³

Exposure controls

Appropriate engineering controls



- Do not use in areas without adequate ventilation.
- Eye wash station should be available.
- Washing facilities should be available.

Individual protection measures**Respiratory protection**

- Wear respiratory protection.

Hand protection

- Wear protective gloves.

Eye protection

- Wear eye/face protection.

9. Physical and Chemical Properties**Information on basic physical and chemical properties**

Physical state: Liquid

Color: Colorless to light yellow

Odor: Characteristic odor

Melting point/Freezing point: -17°C

Boiling point or initial boiling point: (1,2-Dichlorobenzene(o-))180 through 183°C

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 2.2 vol %

Upper explosion limit: 9.2 vol %

Flash point: (1,2-Dichlorobenzene(o-))74.4°C

Auto-ignition temperature: (1,2-Dichlorobenzene(o-))648°C

Decomposition temperature data is not available.

pH data is not available.

Dynamic viscosity: 1.01 cSt

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Insoluble

n-Octanol/water partition coefficient: log Pow3.38

Vapor pressure: 0.16 kPa (20°C)

Density and/or relative density: 1.3

Relative vapor density (Air=1): 5.1

Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1.006

Particle characteristics data is not available.

10. Stability and Reactivity**Reactivity**

Not available.

Chemical stability

Form polychlorobiphenyl by light.

Possibility of hazardous reactions

(1,2-Dichlorobenzene(o-))

Decomposes on burning. This produces toxic and corrosive gases including hydrogen chloride.

Reacts with aluminium and oxidants. Attacks plastics and rubber. (ICSC 1066)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Oxidizing agents, Aluminium



Hazardous decomposition products
Hydrogen chloride

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]
(1,2-Dichlorobenzene(o-))
rat LD50=500mg/kg (ATSDR, 2006)
(1,4-Dichlorobenzene)
rat LD50=2515mg/kg (DFGOT vol.4, 1992)
(Polychlorobiphenyl)
rat LD50=1057mg/kg (cal.)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]
(1,4-Dichlorobenzene)
rabbit LD50>5010mg/kg (ACGIH 7th, 2001)
(Polychlorobiphenyl)
rabbit LD50(MLD)=800mg/kg (EHC 140, 1992)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]
(1,2-Dichlorobenzene(o-))
vapor: rat LC50=3753ppm/4hr (PATTY 6th, 2012)
(1,4-Dichlorobenzene)
dust: rat LC50 >6.00mg/L/4hr (EPA Pesticide, 2008)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]
(1,2-Dichlorobenzene(o-))
rabbit mild to moderate erythema and edema (NITE risk assessment, 2008)

Serious eye damage/irritation

[GHS Cat. Japan, base data]
(1,2-Dichlorobenzene(o-))
rabbit mild irritation (NITE risk assessment, 2008)
(1,4-Dichlorobenzene)
rabbit moderate (EPA Pesticide, 2008)

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]
(1,4-Dichlorobenzene)
cat. 1; NICNAS, 2000

Mutagenic effects data is not available.

Carcinogenicity

[GHS Cat. Japan, base data]
(1,4-Dichlorobenzene)
cat.2; IARC Gr. 2B (IARC 73, 1999 et al.)
[IARC]
(1,2-Dichlorobenzene(o-))
Group 3 : Not classifiable as to its carcinogenicity to humans
(1,4-Dichlorobenzene)
Group 2B : Possibly carcinogenic to humans
(Polychlorobiphenyl)



Group 1 : Carcinogenic to humans

[ACGIH]

(1,2-Dichlorobenzene(o-))

A4(1996) : Not Classifiable as a Human Carcinogen

(1,4-Dichlorobenzene)

A3(1993) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

[EU]

(1,4-Dichlorobenzene)

Category 2; Substances suspected human carcinogens

Reproductive toxicity

[GHS Cat. Japan, base data]

(1,4-Dichlorobenzene)

cat. 2; JSOH, 2015

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(1,2-Dichlorobenzene(o-))

liver; kidney (NITE primary risk assessment, 2008)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(1,2-Dichlorobenzene(o-))

respiratory tract irritation (NITE primary risk assessment, 2008)

(1,4-Dichlorobenzene)

respiratory tract irritation (NITE primary risk assessment, 2005)

(Polychlorobiphenyl)

respiratory tract irritation (ACGIH 7th, 2001)

[cat.3 (drow./dizz.)]

[GHS Cat. Japan, base data]

(1,2-Dichlorobenzene(o-))

narcotic effect (NITE primary risk assessment, 2008)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(1,2-Dichlorobenzene(o-))

nervous system; liver; respiratory system; blood system (NITE primary risk assessment, 2008)

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Very toxic to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(1,2-Dichlorobenzene(o-))

Crustacea (Ceriodaphnia reticulata) EC50=0.66mg/L/48hr (NITE Initial Risk Assessment, 2007)

(1,4-Dichlorobenzene)

Crustacea (Daphnia magna) EC50=0.7mg/L/48hr (NITE Initial Risk Assessment Report, 2005)

(Polychlorobiphenyl)

Fish (Pimephales promelas) LC50=0.008mg/L/96hr (EHC140, 1993)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]



(1,2-Dichlorobenzene(o-))

Crustacea (Daphnia magna) NOEC < 0.10mg/L/21days (NITE Initial Risk Assessment, 2007)

(1,4-Dichlorobenzene)

Crustacea (Daphnia magna) NOEC=0.1mg/L/21days (NITE Initial Risk Assessment Report, 2005)

Water solubility

(1,2-Dichlorobenzene(o-))

very poor (ICSC, 2003)

(1,4-Dichlorobenzene)

80 mg/l (25°C) (ICSC, 2003)

Persistence and degradability

(1,2-Dichlorobenzene(o-))

Not degrade rapidly (BOD_Degradation : 0%/28 days; GC_Degradation: 3%/28 days (MITI official bulletin))

(1,4-Dichlorobenzene)

Not degrade rapidly (BOD=0%/28 days; HPLC=0%/28 days; Reversal conditions HPLC=1%/28 days, Official Bulletin of Economy, Trade and Industry 2001)

Bioaccumulative potential

(1,2-Dichlorobenzene(o-))

log Pow=3.38 (ICSC, 2003); BCF=260 (Check & Review, Japan)

(1,4-Dichlorobenzene)

log Pow=3.37 (ICSC, 2003); BCF=190 (Check & Review, Japan)

(Polychlorobiphenyl)

BCF=270000 (EHC140,1993)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No. or ID No.: 1591

UN Proper Shipping Name :

o-DICHLOROBENZENE

Class or division (Transport hazard class) : 6.1

Packing group : III

ERG GUIDE No.: 152

Special provisions No.: 279

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1591

Proper Shipping Name :

o-DICHLOROBENZENE

Class or division : 6.1

Packing group : III

Special provisions No.: 279

IATA Dangerous Goods Regulations

UN No.: 1591



Proper Shipping Name :
o-DICHLOROBENZENE
Class or division : 6.1
Hazard labels : Toxic
Packing group : III
Special provisions No.: A113

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

1,2-Dichlorobenzene(o-)

Hazardous to the aquatic environment – acute hazard: cat.1

1,2-Dichlorobenzene(o-); 1,4-Dichlorobenzene; Polychlorobiphenyl

Hazardous to the aquatic environment – long-term hazard: cat.1, 2

1,2-Dichlorobenzene(o-); 1,4-Dichlorobenzene; Polychlorobiphenyl

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. X

1,2-Dichlorobenzene(o-); 1,4-Dichlorobenzene

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemicals listed in TSCA Inventory

1,2-Dichlorobenzene(o-); 1,4-Dichlorobenzene; Polychlorobiphenyl

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

GHS classification and labelling

Flam. Liq. 4: H227 Combustible liquid

Acute Tox. 4: H302 Harmful if swallowed

Acute Tox. 4: H332 Harmful if inhaled

Skin Irrit. 2: H315 Causes skin irritation

Eye Irrit. 2: H319 Causes serious eye irritation

STOT SE 1: H370 Causes damage to organs

STOT SE 3: H335 May cause respiratory irritation

STOT SE 3: H336 May cause drowsiness or dizziness

STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

Aquatic Acute 1: H400 Very toxic to aquatic life

Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2021 TLVs and BEIs. (ACGIH)

Supplier's data/information

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling,



and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2020).