

Chemical Safety Data Sheet MSDS / SDS

1,2-dichloropropane 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-dichloropropane

CAS: 78-87-5

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

Relevant identified uses: For R&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**

Flammable liquids, Category 2

Acute toxicity - Category 4, Oral

Acute toxicity - Category 4, Inhalation
Carcinogenicity, Category 1B

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour
H302 Harmful if swallowed
H332 Harmful if inhaled
H350 May cause cancer

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P203 Obtain, read and follow all safety instructions before use.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378 In case of fire: Use ... to extinguish.
P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P317 Get medical help.

P318 IF exposed or concerned, get medical advice.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.

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-dichloropropane

Common names and synonyms: 1,2-dichloropropane

CAS number: 78-87-5

EC number: 201-152-2

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

Rinse and then wash skin with water and soap. 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. Refer for medical attention . Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Contact with skin or eyes may cause irritation. (USCG, 1999)

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

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Cover skin burns with dry sterile dressings after decontamination . Dichloropropane, dichloropropene, and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Excerpt from ERG Guide 130 [Flammable Liquids (Water-Immiscible / Noxious)]: CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient. SMALL FIRE: Dry chemical, CO2, water spray or regular foam. LARGE FIRE: Water spray, fog or regular foam. Do not use straight streams. Move containers from fire area if you can do it without risk. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. (ERG, 2016)

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic and irritating gases may be generated. (USCG, 1999)

Special protective actions for fire-fighters

Use powder, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Remove all ignition sources. Personal protection: self-contained breathing apparatus. Ventilation. Do NOT wash away into sewer. 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

Remove all ignition sources. Personal protection: self-contained breathing apparatus. Ventilation. Do NOT wash away into sewer. 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

1. Remove all ignition sources. 2. Ventilate area of spill or leak. 3. For small quantities, absorb on paper towels. Evaporate in a safe place (such as a fume hood). Allow sufficient time for evaporating vapors to completely clear the hood ductwork. Burn the paper in a suitable location away from combustible materials. Large quantities can be collected & atomized in a suitable combustion chamber equipped with an appropriate effluent gas cleaning device. Propylene dichloride should not be allowed to enter a confined space, such as a sewer, because of the possibility of an explosion.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling. 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

Fireproof. Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 10 ppm as TWA; (SEN); A4 (not classifiable as a human carcinogen).MAK: carcinogen category: 3B

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 safety goggles.

Skin protection

Protective gloves.

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:	Clear.
Odour:	Sweet
Melting point/freezing point:	-100.4 °C. Remarks:Freezing point.

Boiling point or initial boiling point and boiling range:	96.4 °C.
Flammability:	Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
Lower and upper explosion limit/flammability limit:	Lower flammable limit: 3.4% by volume; Upper flammable limit: 14.5% by volume
Flash point:	13 - 15 °C.
Auto-ignition temperature:	555 - 600 °C. Remarks:Pressure no data.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	kinematic viscosity (in mm ² /s) = 0.757. Temperature:20°C.;kinematic viscosity (in mm ² /s) = 0.691. Temperature:40°C.;kinematic viscosity (in mm ² /s) = 0.551. Temperature:50.0°C.
Solubility:	less than 0.1 mg/mL at 70.7° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = 1.99 - 2.28. Remarks:Temperature and pH not available.
Vapour pressure:	66.17 - 71.98 hPa. Temperature:25 °C.
Density and/or relative density:	1.149 - 1.16 g/cm ³ . Temperature:20 °C.
Relative vapour density:	3.89 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

400 ppm; NIOSH considers propylene dichloride to be a potential occupational carcinogen.

On combustion, forms toxic and corrosive fumes. Attacks aluminium alloys and some types of plastic. Reacts violently with strong oxidants. This generates fire and explosion hazard.

Chemical stability

Sensitive to heat.

Possibility of hazardous reactions

DESPITE LOW FLASH POINT IT DOES NOT CATCH FIRE READILY IN INDUSTRIAL APPLICATIONS. The vapour is heavier than air and may travel along the ground; distant ignition possible. 1,2-DICHLOROPROPANE reacts with strong oxidizers and strong acids. It also reacts with aluminum. When confined, this reaction can lead to an explosion. It is incompatible with bases and aluminum alloys. It will attack some forms of plastics, rubber and coatings. (NTP, 1992)

Conditions to avoid

no data available

Incompatible materials

Contact with ... strong acids may cause decomposition. ... With strong oxidizing agents may cause fires or explosions.

Hazardous decomposition products

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

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 - rat (male/female) - 2 200 mg/kg bw.

Inhalation: LC50 - rat (male/female) - 2 000 ppm.

Dermal: LD50 - rabbit (male) - 10 100 mg/kg bw.

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

Evaluation: No epidemiological data relevant to the carcinogenicity of 1,2-dichloropropane were available. There is limited evidence in experimental animals for the carcinogenicity of 1,2-dichloropropane. Overall evaluation: 1,2-Dichloropropane is not classifiable as to its carcinogenicity to humans (Group 3).

Reproductive toxicity

A case was reported of a woman who was hospitalized with metrorrhagia (bleeding from the uterus between menstrual periods) after acute inhalation exposure to propylene dichloride. No other information is available on the reproductive or developmental effects of propylene dichloride in humans. No reproductive effects were noted in several animal inhalation studies. Developmental effects, such as an increased incidence of delayed ossification of the bones of the skull, and reproductive effects such as testicular degeneration and increased incidences of infection of the ovary, uterus, or other organs, have been observed in animals exposed to propylene dichloride by gavage (experimentally placing the chemical in the stomach). It is not known if the infections observed were related to propylene dichloride treatment since controls were also infected.

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the central nervous system.

STOT-repeated exposure

Repeated or prolonged contact may cause skin sensitization. The substance defats the skin, which may cause dryness or cracking. The substance may have effects on the liver and kidneys. This substance is carcinogenic to humans.

Aspiration hazard

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

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Pimephales promelas - 139 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 2.7 mg/L - 48 h.

Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - > 7.95 mg/L - 72 h.

Toxicity to microorganisms: no data available

Persistence and degradability

Partial chemical oxidation of biorefractory cmpds by ozone treatment prior to biological oxidation was studied. 1,2-Dichloropropane is not biodegradable, but it can be made biodegradable with ozonation.

Bioaccumulative potential

BCF ranges of 1.2-3.2 and 0.5-6.9 were measured for 1,2-dichloropropane at concns of 0.4 mg/l and 0.04 mg/l, respectively(1). According to a classification scheme(2), these BCF values suggest bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

The Koc for 1,2-dichloropropane is 47 in a silt loam(1). According to a classification scheme(2), this Koc value suggests that 1,2-dichloropropane is expected to have high mobility in soil. It sorbs to clay minerals in dry soil but desorbs as the soil absorbs moisture(2). In the areas of the US where 1,2-dichloropropane was used as a fumigant, the soil is generally sandy with low organic carbon content and would probably have little impact on reducing mobility due to soil adsorption(2).

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: UN1279 (For reference only, please check.)

IMDG: UN1279 (For reference only, please check.)

IATA: UN1279 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: 1,2-DICHLOROPROPANE (For reference only, please check.)

IMDG: 1,2-DICHLOROPROPANE (For reference only, please check.)

IATA: 1,2-DICHLOROPROPANE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

Packing group, if applicable

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

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

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

Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

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?pageID=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/>

Other Information

Do NOT take working clothes home.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any