Chemical Safety Data Sheet MSDS / SDS

# 1,3-dichloropropane SDS

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



## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### Product identifier

Product name: 1,3-dichloropropane

CAS: 142-28-9

### 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

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

## SECTION 2: Hazards identification

### Classification of the substance or mixture

Flammable liquids, Category 2

### GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

### Hazard statement(s)

H225 Highly flammable liquid and vapour

### 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/...

#### 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.

#### Storage

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

#### 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: | 1,3-dichloropropane |
| Common names and synonyms: | 1,3-dichloropropane |
| CAS number: | 142-28-9 |
| EC number: | 205-531-3 |
| Concentration: | 100% |

## SECTION 4: First aid measures

### Description of necessary first-aid measures

#### If inhaled

Fresh air, rest.

#### Following skin contact

First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again.

#### 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. Do NOT induce vomiting.

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

INHALATION: May cause some central nervous system depression. EYES: May cause some pain and irritation. SKIN: Mild irritation. (USCG, 1999)

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

1. FLUSH contaminating fumigants from the skin and eyse with copious amounts of water or saline for at least 15 minutes. Some fumigants are corrosive to the cornea and may cause BLINDNESS. Specialized medical treatment should be obtained promptly following removal of toxicant by copious flushing with clean water. Skin contamination may cause BLISTERING and deep chemical burns. Absorption of some fumigants across the skin may be sufficient to cause systemic poisoning in the absence of fumigant inhalation. For all these reasons, decontamination of eyes and skin must must be IMMEDIATE and THROUGH. 2. REMOVE victims of

fumigant inhalation to FRESH AIR immediately. Even though initial symptoms and signs are mild, keep the victim quiet, in a semi-reclining position. Minimum pohysical activity limits the likehood ofpulmonary edema. 3. If victim is not breathing, clear the airway of secretions and RESUSCITATE with positive poressure oxygen apparatus. If this is not available, use chest compression to sustain respiration. If victim is pulseless, employ cardiac resuscitation. 4. If PULMONARY EDEMA is evident, there are several measures avilable to sustain life. Medical judgement must be relied upon, however, in the management of each case. The following procedures are generally recommended: A. Put the victim in a SITTING position with a backrest. B. Use intermittent and/or continuous positive pressure OXYGEN to relieve hypoxemia. ... C. Slowly administer FUROSEMIDE, 40 mg, or SODIUM ETHACRYNATE, 50 mg, to reduce venous load by inducing diuresis. ... D. Morphine in small doses (5-10 mg), slowly, iv to allay anxiety and promote deeper respiratory excursions. E. Administer AMINOPHYLLINE (0.25-0.50 gm) slowly, iv. ... F. Digitalization may be considered, but there is a serious risk of arrhythmias in an anoxic and toxic myocardium. G. TRACHEOSTOMY may be necessary in some cases to facilitate aspiration of large amounts of pulmonary edema fluid. H. Epinephrine, atorpine, and expectorants are generally not helpful, and may complicate treatment. I. Watch for RECURRENT PULMONARY EDEMA, even up to 2 weeks after the initial episode. Limit victim's physical activity for at least 4 weeks. Severe physical weakness usually indicates persistent pulmonary injury. Serial pulmonary function testing may be useful in assessing recovery. 5. Combat SHOCK by placing victim in the Trendelenburg position and administering plasma, whole blood, and/or electrolyte and glucose solutions intravenously, with great care, to avoid pulmonary edema. Central venous pressure should be monitored continously. Vasopressor amines must be given with great caution, because of the irritability of the myocardium. 6. Control CONVULSIONS. Seizures are most likely to occur in poisonings by methyl bromide, hydrogen cyanide, acrylonitrile, phosphine, and carbon disulfide. ... Fumigant poisoning

## SECTION 5: Firefighting measures

### Suitable extinguishing media

Fire Extinguishing Agents: Foam, carbon dioxide, dry chemical. (USCG, 1999)

### Specific hazards arising from the chemical

Special Hazards of Combustion Products: Emits fumes of phosgene. Behavior in Fire: Reacts vigorously. (USCG, 1999)

### Special protective actions for fire-fighters

Use water spray, 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

Evacuate danger area! Ventilation. 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. Do NOT wash away into sewer. Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance.

### Environmental precautions

Evacuate danger area! Ventilation. 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. Do NOT wash away into sewer. Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance.

### Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## SECTION 7: Handling and storage

### Precautions for safe handling

NO open flames, NO sparks and NO smoking. Above 16°C use a closed system, ventilation and explosion-proof electrical equipment. 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 food and feedstuffs, oxidants, acids, bases and alumina. Cool. Well closed. Keep in a well-ventilated room.

## SECTION 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure limit values

| Component | 1,3-dichloropropane | | | |
|---|---|---|---|---|
| CAS No. | 142-28-9 | | | |
| | Limit value - Eight hours | | Limit value - Short term | |
| | ppm | $mg/m^3$ | ppm | $mg/m^3$ |
| Austria | 75 | 350 | 375 | 1750 |
| Spain | 75 | 352 | 110 | 517 |
| | Remarks | | | |

### 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 spectacles.

### 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: | 1,3-dichloropropane is a colorless watery liquid with a sweet odor. Sinks in water. Produces irritating vapor. (USCG, 1999) |
| Colour: | Colorless liquid |
| Odour: | Sweet |
| Melting point/freezing point: | -6°C(lit.) |
| Boiling point or initial boiling point and boiling range: | 122°C(lit.) |

| | |
|---|---|
| Flammability: | Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire. |
| Lower and upper explosion limit/flammability limit: | Flammable limits in air= 3.4% - 14.5% (est) |
| Flash point: | 21°C(lit.) |
| Auto-ignition temperature: | no data available |
| Decomposition temperature: | no data available |
| pH: | no data available |
| Kinematic viscosity: | no data available |
| Solubility: | Sol in benzene, chloroform, alcohol, ether |
| Partition coefficient n-octanol/water: | log Kow = 2.00 |
| Vapour pressure: | 18.3mmHg at 25°C |
| Density and/or relative density: | 1.188 |
| Relative vapour density: | 3.90 (air= 1) |
| Particle characteristics: | no data available |

## SECTION 10: Stability and reactivity

**Reactivity**

Decomposes on heating. This produces hydrogen chloride and phosgene.

**Chemical stability**

no data available

### Possibility of hazardous reactions

FlammableThe vapour is heavier than air and may travel along the ground; distant ignition possible.Halogenated aliphatic compounds, such as 1,3-DICHLOROPROPANE, are moderately or very reactive. Halogenated organics generally become less reactive as more of their hydrogen atoms are replaced with halogen atoms. Low molecular weight haloalkanes are highly flammable and can react with some metals to form dangerous products. Materials in this group are incompatible with strong oxidizing and reducing agents. Also, they are incompatible with many amines, nitrides, azo/diazo compounds, alkali metals, and epoxides.

### Conditions to avoid

no data available

### Incompatible materials

no data available

### Hazardous decomposition products

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

## SECTION 11: Toxicological information

### Acute toxicity

Oral: no data available

Inhalation: no data available

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

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract.

### STOT-repeated exposure

no data available

### Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: MATC Pimephales promelas 8-16 ug/l (est)

Toxicity to daphnia and other aquatic invertebrates: LC50 Daphnia magna (cladoceran) 282,000 ug/l 96 hr

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### Persistence and degradability

Using a standard dilution method and a sewage seed inoculum, 1,3-dichloropropane achieved 16% of the theoretical BOD during a 5 day incubation period(1), suggesting biodegradation will occur under aerobic conditions(SRC).

### Bioaccumulative potential

An estimated BCF of 7 was calculated for 1,3-dichloropropane(SRC), using a log Kow of 2.0(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low.

### Mobility in soil

The Koc of 1,3-dichloropropane is estimated as 290(SRC), using a measured log Kow of 2.0(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 1,3-dichloropropane is expected to have moderate mobility in soil.

### 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: UN1993 (For reference only, please check.)
IMDG: UN1993 (For reference only, please check.)
IATA: UN1993 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: FLAMMABLE LIQUID, N.O.S. (For reference only, please check.)
IMDG: FLAMMABLE LIQUID, N.O.S. (For reference only, please check.)
IATA: FLAMMABLE LIQUID, N.O.S. (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: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (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)**

Not 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**

Explosive limits are unknown in literature, although the substance is combustible and has a flash point < 61°C. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.