

## Chemical Safety Data Sheet MSDS / SDS

## 3-chloropropene 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: 3-chloropropene

CAS: 107-05-1

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

Relevant identified uses: For R&amp;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, Dermal  
Skin irritation, Category 2  
Eye irritation, Category 2  
Acute toxicity - Category 4, Inhalation  
Specific target organ toxicity - single exposure, Category 3  
Germ cell mutagenicity, Category 2  
Carcinogenicity, Category 2  
Specific target organ toxicity - repeated exposure, Category 2  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

### GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

### Hazard statement(s)

H225 Highly flammable liquid and vapour  
H302 Harmful if swallowed  
H312 Harmful in contact with skin  
H315 Causes skin irritation  
H319 Causes serious eye irritation  
H332 Harmful if inhaled  
H335 May cause respiratory irritation  
H341 Suspected of causing genetic defects  
H351 Suspected of causing cancer  
H373 May cause damage to organs through prolonged or repeated exposure  
H400 Very toxic to aquatic life

### 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.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P273 Avoid release to the environment.

### **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.  
P302+P352 IF ON SKIN: Wash with plenty of water/...  
P317 Get medical help.  
P321 Specific treatment (see ... on this label).  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P332+P317 If skin irritation occurs: Get medical help.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P319 Get medical help if you feel unwell.  
P318 IF exposed or concerned, get medical advice.  
P391 Collect spillage.

### **Storage**

P403+P235 Store in a well-ventilated place. Keep cool.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
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:	3-chloropropene
Common names and synonyms:	3-chloropropene
CAS number:	107-05-1
EC number:	203-457-6
Concentration:	100%

### SECTION 4: First aid measures

#### Description of necessary first-aid measures

##### If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

##### Following skin contact

Remove contaminated clothes. 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. Give a slurry of activated charcoal in water to drink. Give one or two glasses of water to drink. Refer for medical attention .

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

Causes marked irritation of skin and may burn. Burns the eyes; effect may be delayed. (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

Use water spray, dry chemical, alcohol foam or carbon dioxide. Use water to keep fire-exposed containers cool. If leak or spill has not ignited, use water spray to disperse vapors and to provide protection for men attempting to stop leak. Water spray may be used to flush spills away from exposures.

### Specific hazards arising from the chemical

Special Hazards of Combustion Products: Releases irritating hydrogen chloride gas on combustion (USCG, 1999)

### Special protective actions for fire-fighters

Use powder, AFFF, 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! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

### Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

### Methods and materials for containment and cleaning up

Remove all ignition sources. Ventilate area of spill or leak. For small quantities, absorb on paper towels. Evaporate in safe place (such as fume hood). Allow sufficient time for evaporating vapors to completely clear hood ductwork. Burn paper in suitable

location...

## 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. Separated from food and feedstuffs and incompatible materials. See Chemical Dangers. Dry. Ambient storage temperature, venting should be pressure-vacuum type.

## SECTION 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure limit values

TLV: 1 ppm as TWA; 2 ppm as STEL; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans). MAK: skin absorption (H); 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 or eye protection in combination with breathing protection.

#### Skin protection

Protective gloves. Protective clothing.

### 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:	No data.
Odour:	Pungent, unpleasant odor.
Melting point/freezing point:	-134.5 °C. Atm. press.:Ca. 1 atm. Remarks:Atm. pressure not specifically stated in the handbook, however it can be assumed that the measurement was done at normal atmospheric pressure.
Boiling point or initial boiling point and boiling range:	>= 44 - 45 °C. Remarks:Atm. pressure not specifically stated in the handbook, however it can be assumed that the measurement was done at normal atmospheric pressure.
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: 2.9% by volume; Upper flammable limit: 11.1% by volume
Flash point:	-32 °C. Atm. press.:Ca. 1 atm.
Auto-ignition temperature:	737 °F. Atm. press.:Ca. 1 atm.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	dynamic viscosity (in mPa s) = 0.336. Temperature:20°C.

Solubility:	1 to 10 mg/mL at 66° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = 2.1. Temperature:25 °C.
Vapour pressure:	395 hPa. Temperature:20 °C.
Density and/or relative density:	0.94 g/cm <sup>3</sup> . Temperature:20 °C.
Relative vapour density:	2.6 (vs air)
Particle characteristics:	no data available

## SECTION 10: Stability and reactivity

### Reactivity

The substance polymerizes under the influence of acids, heat and peroxides. This generates fire or explosion hazard. On combustion, forms toxic and corrosive fumes of hydrogen chloride (see ICSC 0163). Reacts violently with strong oxidants and powdered metals. This generates fire and explosion hazard. Reacts with water. This produces hydrochloric acid. Attacks plastics, rubber and coatings.

### Chemical stability

no data available

### Possibility of hazardous reactions

Dangerous fire and explosion hazard when exposed to heat or flame ... The vapour is heavier than air and may travel along the ground; distant ignition possible. ALLYL CHLORIDE presents a serious fire and explosion hazard when exposed to heat, flame or oxidizing agents. Polymerizes violently and exothermically with Lewis acids (aluminum chloride, boron trifluoride, sulfuric acid) or metals (aluminum, magnesium, zinc, or galvanized metal) [MCA SD-99, 1973]. Incompatible with acids (nitric acid, chlorosulfonic acid, oleum), with strong bases (sodium hydroxide, potassium hydroxide), with ethyleneimine and ethylenediamine [Lewis, 3rd ed., 1993, p. 36]. Attempts to alkylate benzene or toluene using allyl chloride in the presence of ethylaluminum chlorides have led to explosions.

### Conditions to avoid



no data available

#### **Incompatible materials**

Contact with aluminum chloride, boron trifluoride, or sulfuric acid may cause a violent exothermic polymerization. Contact with aluminum, magnesium, zinc (or galvanized metals) may produce similar results.

#### **Hazardous decomposition products**

Toxic gases and vapors (such as ... phosgene and carbon monoxide) may be released in fire .

### **SECTION 11: Toxicological information**

#### **Acute toxicity**

Oral: LD50 - rat (female) - 275 mg/kg bw. Remarks: CDF rats, moving average method.

Inhalation: LC50: not determinable as rats were sacrificed at day 3 to 7 - rat (male/female) - 0 ppm.

Dermal: LD50 - rabbit (male/female) - 398 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**

CLASSIFICATION: C; possible human carcinogen. BASIS FOR CLASSIFICATION: Classification is based on a low (but biologically important) incidence of forestomach tumors in female mice and positive results in a variety of genetic toxicity tests. Allyl chloride

is an alkylating agent and structurally related to probable human carcinogens. HUMAN CARCINOGENICITY DATA: None. ANIMAL CARCINOGENICITY DATA: Limited.

#### **Reproductive toxicity**

no data available

#### **STOT-single exposure**

The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the central nervous system. Inhalation of high concentrations of the vapour may cause lung oedema. See Notes. The effects may be delayed.

#### **STOT-repeated exposure**

The substance may have effects on the peripheral nervous system, cardiovascular system, kidneys and liver. This may result in kidney impairment and liver impairment.

#### **Aspiration hazard**

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

### **SECTION 12: Ecological information**

#### **Toxicity**

Toxicity to fish: NOEC - *Poecilia reticulata* - 1.2 mg/L - 14 d.

Toxicity to daphnia and other aquatic invertebrates: LC50 - *Daphnia magna* - 250 mg/L - 24 h. Remarks: Loss of ability to swim.

Toxicity to algae: NOEC - *Scenedesmus quadricauda* - 6.3 mg/L - 8 d.

Toxicity to microorganisms: NOEC - activated sludge - 120 mg/L - 2.5 h.

#### **Persistence and degradability**

AEROBIC: Allyl chloride, present at 100 mg/L, reached 62% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L and the Japanese MTI test(1). In a standard biodegradability test using a sewage seed, 14 and 25% of the theoretical BOD was achieved in 5 days using nonacclimated and acclimated seed, respectively(2). In a test using activated sludge, allyl chloride was readily biodegradable(3).

#### **Bioaccumulative potential**

BCF values of <0.14 and <1.3 when exposed to concns of 0.5 and 0.05 ppm, respectively, were measured for allyl chloride(SRC), using carp (*Cyprinus carpio*) which were exposed over a 6-week period(1). According to a classification scheme(2), these BCF values suggest the potential for bioconcentration in aquatic organisms is low(SRC).

#### **Mobility in soil**

The Koc of allyl chloride is estimated as 51(SRC), using a water solubility of 3,370 mg/L(1) and a regression derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that allyl chloride is expected to have high 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: UN1100 (For reference only, please check.)

IMDG: UN1100 (For reference only, please check.)

IATA: UN1100 (For reference only, please check.)

#### **UN Proper Shipping Name**

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

IMDG: ALLYL CHLORIDE (For reference only, please check.)  
IATA: ALLYL CHLORIDE (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: Yes  
IMDG: Yes  
IATA: Yes

#### **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](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

Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor, or by an authorized person, should be considered.

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