Chemical Safety Data Sheet MSDS / SDS

1,2,3-trichloropropane 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: 1,2,3-trichloropropane

CAS: 96-18-4

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

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SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Acute toxicity - Category 4, Dermal

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

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed
H312 Harmful in contact with skin
H332 Harmful if inhaled
H350 May cause cancer

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
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

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.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P318 IF exposed or concerned, get medical advice.

Storage

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:	1,2,3-trichloropropane
Common names and synonyms:	1,2,3-trichloropropane
CAS number:	96-18-4
EC number:	202-486-1
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer immediately for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention if skin irritation occurs.

Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible). Refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer immediately for medical attention.

Most important symptoms/effects, acute and delayed

Inhalation of vapor causes anesthesia, dizziness, and nausea. Vapor is highly irritating by inhalation routes and moderately irritating by dermal routes. Exposure of eyes to vapor may result in slight, transient injury to the cornea. (USCG, 1999)

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

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Halogenated Aliphatic Hydrocarbons and Related Compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Highly toxic chloride fumes including hydrochloric acid. Behavior in Fire: It burns and produces highly toxic chloride fumes. (USCG, 1999)

Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant 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

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking liquid in sealable containers. 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

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas; Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided; Methods and materials for containment and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Above 73°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 powdered metals and food and feedstuffs. Cool. Keep in a well-ventilated room. Store in an area without drain or sewer access.Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 0.005 ppm as TWA; A2 (suspected human carcinogen).MAK: skin absorption (H); carcinogen category: 2

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 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:	Odor described as being quite similar to that of trichloroethylene or chloroform
Melting point/freezing point:	-14.7 °C. Atm. press.:Ca. 1 atm.
Boiling point or initial boiling point and boiling range:	157 °C. Atm. press.:101.325 kPa.
Flammability:	Class IIIA Combustible Liquid: Fl.P. at or above 140°F and below 200°F.

Lower and upper explosion limit/flammability limit:	Lower, 3.2% by volume (at 120 deg C); upper 12.6% by volume (at 150 deg C)
Flash point:	>= 160 - <= 164 °F. Atm. press.:Ca. 1 atm.
Auto-ignition temperature:	304 °C. Atm. press.:Ca. 1 atm.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	dynamic viscosity (in mPa s) = 0.25. Temperature:20°C.
Solubility:	1 to 5 mg/mL at 75° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = 2.54. Temperature:20 °C.
Vapour pressure:	1 mm Hg. Temperature:9.87 °C.;1.33 hPa. Temperature:9.87 °C.;5 mm Hg. Temperature:32.84 °C.
Density and/or relative density:	1.38. Temperature:25 °C.
Relative vapour density:	5.08 (NTP, 1992) (Relative to Air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

NIOSH considers 1,2,3-trichloropropane to be a potential occupational carcinogen.
Decomposes on burning. This produces toxic and corrosive fumes. Reacts violently with some powdered metals. This generates explosion hazard.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Moderately flammable by heat, flames (sparks), or powerful oxidizers.The vapour is heavier than air.1,2,3-TRICHLOROPROPANE is sensitive to prolonged exposure to light. Sensitive to heat. May react with active metals, strong caustics and oxidizing agents. Attacks some plastics, rubber and some coatings (NTP, 1992).

Conditions to avoid

no data available

Incompatible materials

Incompatible materials: Strong oxidizing agents, strong bases, strong acids, aluminum, tin/tin oxides, zinc, magnesium.

Hazardous decomposition products

When heated to decomposition it yields highly toxic chloride.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 - rat (male) - 120 mg/kg bw.

Inhalation: LC50 Rat inhalation 3,000 mg/cu m for 4 hr

Dermal: LD50 - rabbit (male/female) - 523 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: There is inadequate evidence in humans for the carcinogenicity of 1,2,3-trichloropropane. There is sufficient evidence in experimental animals for the carcinogenicity of 1,2,3-trichloropropane. Overall evaluation: 1,2,3-Trichloropropane is probably carcinogenic to humans (Group 2A). In making the overall evaluation, the working group took into account the following evidence: (1) 1,2,3-Trichloropropane causes tumors at multiple sites and at high incidence in mice and rats. (2) The metabolism of 1,2,3-trichloropropane is qualitatively similar in human and rodent microsomes. (3) 1,2,3-Trichloropropane is mutagenic to bacteria and to cultured mammalian cells and binds to the DNA of animals treated in vivo.

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes and upper respiratory tract. The substance is mildly irritating to the skin. The substance may cause effects on the liver and kidneys at high concentrations. This may result in tissue lesions. Exposure at high levels could cause lowering of consciousness.

STOT-repeated exposure

This substance is probably carcinogenic to humans. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

Aspiration hazard

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

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Pimephales promelas - 66.5 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - >= 15 - <= 27 mg/L - 48 h. Remarks:- Extrapolated value, no concentration gave partial immobilisation.

Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 49.6 mg/L - 72 h.

Toxicity to microorganisms: IC50 - Nitrosomonas sp. - 30 mg/L - 24 h.

Persistence and degradability

AEROBIC: 1,2,3-Trichloropropane, present at 100 ppm, reached 0% of its Theoretical BOD in 4 weeks using an activated sludge inoculum at 30 ppm in the Japanese MITI test(1). 1,2,3-Trichloropropane showed little degradation in an anaerobic serum bottle test over a 60 day period. It was one of 12 chlorinated aliphatic compounds (1-3 carbons) in the test mixture. Almost complete removal was obtained in a 7-day aerobic bottle test with methanogenic cultures, but not with phenol-adapted cultures(2).

Bioaccumulative potential

BCF values of 5.4-12 and 5.3-13 were calculated in fish for 1,2,3-trichloropropane at concentrations of 0.2 and 0.02 mg/L, respectively, using carp (Cyprinus carpio) which were exposed over an 8-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 partition coefficient of the compound to Captina silt loam (pH 4.97, 1.49% OC) and McLaurin sandy loam (pH 4.43, 0.66% OC) soils were 1.41 and 0.508, respectively(1), corresponding to calculated Koc values are 95 and 77(SRC). According to a classification scheme(2), these Koc values suggest that 1,2,3-trichloropropane 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: UN2810 (For reference only, please check.)
IMDG: UN2810 (For reference only, please check.)
IATA: UN2810 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: TOXIC LIQUID, ORGANIC, N.O.S. (For reference only, please check.)
IMDG: TOXIC LIQUID, ORGANIC, N.O.S. (For reference only, please check.)
IATA: TOXIC LIQUID, ORGANIC, N.O.S. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (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)

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