

Chemical Safety Data Sheet MSDS / SDS

1,1,1,2-tetrachloroethane 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: 1,1,1,2-tetrachloroethane

CAS: 630-20-6

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**

Acute toxicity - Category 4, Oral

Acute toxicity - Category 1, Dermal

Eye irritation, Category 2
Acute toxicity - Category 3, Inhalation

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H302 Harmful if swallowed
H310 Fatal in contact with skin
H319 Causes serious eye irritation
H331 Toxic if inhaled

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P262 Do not get in eyes, on skin, or on clothing.
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.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P316 Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
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.

Storage

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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: 1,1,1,2-tetrachloroethane

Common names and synonyms: 1,1,1,2-tetrachloroethane

CAS number: 630-20-6

EC number: 211-135-1

Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

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

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

Most important symptoms/effects, acute and delayed

Exposure Routes: inhalation, ingestion, skin and/or eye contact Symptoms: Irritation eyes, skin; lassitude (weakness, exhaustion), restlessness, irregular respiration, muscle incoordination Target Organs: Eyes, skin, central nervous system, liver (NIOSH, 2016)

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 as 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

If material involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use water in flooding quantities as fog. Use foam, dry chemical, or carbon dioxide. Apply water from as far a distance as possible. Keep run-off water out of sewers and water sources. Tetrachloroethane

Specific hazards arising from the chemical

Literature sources indicate that this chemical is nonflammable. (NTP, 1992)

Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media. 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. Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent. Then store

and dispose of according to local regulations. Do NOT let this chemical enter the environment.

Environmental precautions

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

Methods and materials for containment and cleaning up

Evacuate and restrict persons not wearing protective equipment for the area of spill or leak until cleanup is complete. Remove all ignition sources. Ventilate area of spill or leak. Absorb liquids in vermiculite, dry sand, earth, peat, carbon, or a similar material and deposit in sealed containers. ... It may be necessary to contain and dispose of this chemical as a hazardous waste.

SECTION 7: Handling and storage

Precautions for safe handling

NO contact with hot surfaces. NO open flames. 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 strong oxidants and strong bases. Well closed. Store in tightly closed containers in a cool, well-ventilated area away from potassium; sodium; dinitrogen tetroxide; potassium hydroxide; nitrogen tetroxide; sodium potassium alloy; 2,4-dinitrophenyl disulfide. Metal containers involving the transfer of 5 gallons or more of this chemical should be grounded and bonded.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	1,1,1,2-tetrachloroethane
CAS No.	630-20-6
	Handle with caution in the workplace. NIOSH considers ethylene dichloride; hexachloroethane; 1,1,2,2-tetrachloroethane; and 1,1,2-trichloroethane; to be potential occupational carcinogens. Additionally, NIOSH recommends that the other five chloroethane compounds: 1,1-dichloroethane; ethyl

chloride; methyl chloroform; pentachloroethane; and 1,1,1,2-tetrachloroethane be treated in the workplace with caution because of their structural similarity to the four chloroethanes shown to be carcinogenic in animals.

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.

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:	PHYSICAL DESCRIPTION: Clear colorless liquid. (NTP, 1992)
Colour:	Colorless, heavy liquid
Odour:	no data available
Melting point/freezing point:	285°C(lit.)
Boiling point or initial boiling point and boiling range:	131°C

Flammability:	Combustible under specific conditions. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	268°C(lit.)
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	1.50X10 ⁻³ Pa-sec at 20 deg C
Solubility:	less than 1 mg/mL at 68.9° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Kow = 2.93 (est)
Vapour pressure:	10 mm Hg at 66.7° F ; 20 mm Hg at 89.8° F (NTP, 1992)
Density and/or relative density:	1.598 g/mL at 25°C(lit.)
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on heating. This produces toxic and corrosive gases including hydrogen chloride. Reacts with strong bases and strong oxidants.

Chemical stability

no data available

Possibility of hazardous reactions

It is non combustible. 1,1,1,2-TETRACHLOROETHANE is incompatible with strong oxidizing agents and strong bases. It is also incompatible with dinitrogen tetroxide, 2,4-dinitrophenyl disulfide, potassium, potassium hydroxide, nitrogen tetroxide, sodium and sodium potassium alloy. It may react with chemically active metals, strong caustics, hot iron, aluminum and zinc in presence of steam. It may also react with mixtures of dinitrogen tetroxide with halocarbons. (NTP, 1992)

Conditions to avoid

no data available

Incompatible materials

Mixtures of potassium with tetra- and pentachloroethane will often explode spontaneously after a short delay during which a voluminous solid separates out.

Hazardous decomposition products

When in contact with flame, incandescent material or red hot metal surfaces, it decomp to form hydrochloric acid, carbon dioxide, and carbon monoxide.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 670 mg/kg

Inhalation: LC50 Rat inhalation 2100 ppm/4 hr

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

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

Reproductive toxicity

no data available

STOT-single exposure

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

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: LC50; Species: *Lepomis macrochirus* (Bluegill, weight 0.32-1.2 g); Conditions: freshwater, static, 21-23 deg C, pH 6.5-7.9, hardness 32-48 mg/L CaCO₃, alkalinity 28-34 mg/L CaCO₃, conductivity 93-190 umhos/cm, dissolved oxygen 0.3-9.7 mg/L; Concentration: 20 mg/L for 24 hr /> or =80% purity

Toxicity to daphnia and other aquatic invertebrates: LC50; Species: Daphnia magna (Water flea, age <24 hr); Conditions: freshwater, static, 22 deg C, pH 8.0 (7.4-9.4), hardness 173 mg/L CaCO₃, dissolved oxygen >60%; Concentration: 27000 ug/L for 24 hr (22000-35000 ug/L) />80% purity

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

Biodegradation data are not available for 1,1,1,2-tetrachloroethane(SRC, 2008); however, biodegradation data for the isomer 1,1,2,2-tetrachloroethane indicate that degradation will be slow under aerobic conditions, but may proceed under anaerobic conditions(1).

Bioaccumulative potential

An estimated BCF of 12 was calculated in fish for 1,1,1,2-tetrachloroethane(SRC), using a water solubility of 1.07×10^{-3} mg/L at 25 deg C(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(SRC).

Mobility in soil

The experimentally determined Koc for 1,1,1,2-tetrachloroethane is 399(1). According to a classification scheme(2), this Koc value suggests that 1,1,1,2-tetrachloroethane 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: 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

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Not Listed.

(PICCS)

Not Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Not 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

See ICSC 0332.

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