Chemical Safety Data Sheet MSDS / SDS

1,1-dichloro-1,2,2,2-tetrafluoroethane 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: 1,1-dichloro-1,2,2,2-tetrafluoroethane

CAS: 374-07-2

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

no data available

GHS label elements, including precautionary statements

Signal word: no data available

Hazard statement(s)

no data available

Precautionary statement(s)

Prevention

no data available

Response

no data available

Storage

no data available

Disposal

no data available

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	1,1-dichloro-1,2,2,2-tetrafluoroethane
Common names and synonyms:	1,1-dichloro-1,2,2,2-tetrafluoroethane
CAS number:	374-07-2
EC number:	206-774-8
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

Most important symptoms/effects, acute and delayed

no data available

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

Victims of freon inhalation require management for hypoxic, CNS anesthetic, & cardiac symptoms. Patients must be removed from the exposure environment, & high flow supplemental oxygen should be utilized. The respiratory system should be evaluated for injury, aspiration, or pulmonary edema & treated appropriately. CNS findings should be treated supportively. A calm environment with no physical exertion is imperative to avoid increasing endogenous adrenegic levels. Exogenous adrenergic drugs must not be used to avoid inducing sensitized myocardial dysrhythmias. Atropine is ineffective in treating bradyarrhythmias. For ventricular dysrhythmias, diphenylhydantoin & countershock may be effective. Cryogenic dermal injuries should be treated by water bath rewarming at 40-42 deg C until vasodilatory flush has returned. Elevation of the limb & standard frostbite management with late surgical debridement should be utilized. Ocular exposure requires irrigation & slit lamp evaluation for injury. Freons

SECTION 5: Firefighting measures

Suitable extinguishing media

If material on fire or involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn

or burns with difficulty). Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Do not use water on material itself. Use water spray to knock-down vapors. 1,2-Dichloro-1,1,2,2-Tetrafluoroethane

Specific hazards arising from the chemical

no data available

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours.Avoid contacting with skin and eye. Use personal protective equipment.Wear chemical impermeable gloves. Ensure adequate ventilation.Remove all sources of ignition. Evacuate personnel to safe areas.Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

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

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

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

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 tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	GasVapor
Colour:	Colorless
Odour:	Odorless
Melting point/freezing point:	-56.6°C
Boiling point or initial boiling point and boiling range:	3°C
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	1.9924X10-3 Pa.s at 216.58 K
Solubility:	In water, 137 mg/L at 25 deg C
Partition coefficient n-octanol/water:	log Kow = 2.78 (est)
Vapour pressure:	1640 mm Hg at 25 deg C
Density and/or relative density:	1.454 g/cm3
Relative vapour density:	no data available

Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

Non-flammable gas 1,2-Dichloro-1,1,2,2-Tetrafluoroethane

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

Under certain conditions, /chlorofluorocarbon/ vapors may decompose on contact with flames or hot surfaces, creating the potential hazard of inhalation of toxic decomposition products. Chlorofluorocarbon

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

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

no data available

Bioaccumulative potential

An estimated BCF of 32 was calculated for 1,1-dichloro-1,2,2,2-tetrafluoroethane(SRC), using an estimated log Kow of 2.78(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is moderate.

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for 1,1-dichloro-1,2,2,2-tetrafluoroethane can be estimated to be 200(SRC). According to a classification scheme(2), this estimated Koc value suggests that 1,1-dichloro-1,2,2,2-tetrafluoroethane 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: UN1958 (For reference only, please check.)
IMDG: UN1958 (For reference only, please check.)
IATA: UN1958 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: 1,2-DICHLORO-1,1,2,2- TETRAFLUOROETHANE (REFRIGERANT GAS R 114) (For reference only, please check.)
IMDG: 1,2-DICHLORO-1,1,2,2- TETRAFLUOROETHANE (REFRIGERANT GAS R 114) (For reference only, please check.)
IATA: 1,2-DICHLORO-1,1,2,2- TETRAFLUOROETHANE (REFRIGERANT GAS R 114) (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 2.2 (For reference only, please check.)
IMDG: 2.2 (For reference only, please check.)
IATA: 2.2 (For reference only, please check.)

Packing group, if applicable

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

Not 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/