SAFETY DATA SHEETS

According to the UN GHS revision 10

1: Identification

1.1 GHS Product identifier

Product name	cis-1,2-Dichloroethylene

1.2 Other means of identification

Product number	156-59-2
Other names	cis-1,2-Dichloroethylene

1.3 Recommended use of the chemical and restrictions on use

Identified uses	Industrial and scientific research use.
Uses advised against	no data available

1.4 Supplier's details

Company	Zhongshan Greenrock Technology Co., Ltd.
Address	No. 138, Jinsan Avenue, Sanjiao Town, Zhongshan City, Guangdong Province, China
Telephone	+86-2087066781

1.5 Emergency phone number

Emergency phone number	+86-2087066781
Service hours	Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2: Hazard identification

2.1 Emergency Overview

Flammable material. Contact with ignition sources may cause fire. Liquids and solids burn slowly, and aerosols may produce flammable spray. Keep away from heat and ignition sources.

2.2 GHS Classification

Flammable liquids : Category 2
Acute toxicity, inhalation : Category 4
Hazardous to the aquatic environment, long-term hazard : Category 3

2.3 GHS label elements, including precautionary statements

Pictogram(s)	
Signal word	Danger
Hazard statement(s)	H225 Highly Flammable liquid and vapor H332 Harmful if inhaled H412 Harmful to aquatic life with long lasting effects
Precautionary statement(s)	
Prevention	P210 Keep away from heat, hot surface, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P240 Ground/bond container and receiving equipment. P241 Use explosion-proof [electrical/ventilating/lighting/.../] equipment. P242 Use only non-sparking tools. P243 Take precautionary measures against static discharge. P261 Avoid breathing dust/fume/gas/mist/vapors/spray. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
Response	P317 Get emergency medical help. P303+P361+P353 IF ON SKIN (or hair),Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower]. P304+P340 IF INHALED,Remove person to fresh air and keep comfortable for breathing. 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 ...

2.4 Physical and chemical

Flammable liquid with a flash point between 23-60°C. It burns easily when exposed to heat or open flame. Flammable solid: May ignite when exposed to heat, friction, or impact. Aerosol: The spray contains flammable ingredients and may form a flammable mixture.

2.5 Health hazards

The primary hazard is burns from fire. Some substances produce toxic fumes that can cause inhalation injuries. Liquids can be irritating and cause inflammation in contact with skin and eyes.

2.6 Environmental hazards

Smoke from fires may have a short-term impact on the surrounding environment. Leaked liquids may contaminate soil and water, causing some damage to local ecosystems. Most substances are naturally degradable in the environment.

2.7 Other hazards which do not result in classification

no data available

3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
cis-1,2-Dichloroethylene	cis-1,2-Dichloroethylene	156-59-2	205-859-7	99%

4: First-aid measures

4.1 General advice

Immediately stay away from fire source and use dry powder or foam fire extinguisher to extinguish fire (if burning); remove contaminated clothing and rinse the contact area with clean water; bring the material SDS document and seek medical attention if necessary

4.2 If inhaled

Move to a ventilated area. If aerosols or solid dust are inhaled, cough to expel foreign matter from the respiratory tract. If mild chest tightness occurs, rest and observe. If symptoms persist, seek medical attention.

4.3 In case of skin contact

Rinse with running water for 10-15 minutes. If the skin is slightly irritated, apply moisturizer (such as Vaseline); avoid scratching to prevent skin damage and infection.

4.4 In case of eye contact

Rinse with clean water for 10 minutes and then instill artificial tears; if stinging or photophobia persists, consult an ophthalmologist

4.5 If swallowed

If a small amount is accidentally ingested, drink plenty of water to promote excretion; if nausea or abdominal pain occurs, seek medical attention immediately and do not induce vomiting on your own.

4.6 Most important symptoms and effects, both acute and delayed

Acute symptoms include mild skin irritation (redness, itching), eye stinging, and mild cough; no significant long-term health effects (unless exposed to large amounts over a long period of time).

4.7 Protection of first-aiders

Rescuers must wear anti-static gloves and goggles; wear dust masks when handling dust; avoid contact with combustion products

4.8 Notes to physician

Inform the doctor of the substance type and exposure amount; treat symptoms (eg, antihistamine ointment for skin irritation, anti-inflammatory eye drops for eye irritation).

5: Fire-fighting measures

5.1 Unsuitable extinguishing media

Flammable gas: Do not use water (cannot cover the gas) or carbon dioxide (may cause flashback); Extremely flammable liquids (flash point 23°C): Avoid using high-pressure water (can easily spread the liquid and expand the fire).

5.2 Specific hazards during fire fighting

Flammable gases can easily reach their explosion limits when mixed with air (such as 4%-75% hydrogen), and will explode when exposed to fire, with strong shock waves; extremely flammable liquids are highly volatile, and their vapors can easily form explosive mixtures with a fast burning speed (such as ether).

5.3 Hazardous combustion products

Carbon monoxide and incomplete combustion products of hydrocarbons (such as aldehydes and ketones).

5.4 Specific extinguishing methods

Flammable gas: first shut off the leak source (when safe). If it cannot be shut off, use dry powder to extinguish the fire (to suppress combustion) and dilute the vapor with mist water (to prevent explosion). Extremely flammable liquid: use dry powder/foam (anti-solvent foam, such as ethanol) for small areas and cover large areas with foam (to isolate oxygen). Open flames are strictly prohibited from approaching.

5.5 Special protective equipment for fire-fighters

Wear anti-static work clothes, positive pressure air respirator, and chemical-resistant gloves; carry a combustible gas detector (to measure explosion limits); use explosion-proof tools during operation to avoid static sparks.

6: Accidental release measures

6.1 Protective measures for workers

Wear anti-static work clothes, anti-static gloves, and chemical goggles; wear a gas mask (organic vapor filter cartridge) for gases/volatile liquids; wear impact protection for aerosols.

6.2 Environmental protection measure

Liquids/aerosols are prevented from flowing into sewers/rivers, and oil booms + oil absorbent cotton are used to pollute water bodies; gas leaks are monitored for concentration to prevent them from spreading to residential areas; solids are prevented from dust polluting the soil.

6.3 Containment methods for leaked chemicals

Gas: Shut off the leak source (when safe), and use explosion-proof fan to lead the leak to an open area; Liquid: Collect in anti-static container; Solid: Put non-sparking tools into anti-static container; Aerosol: Collect the leaked tank (no squeezing).

6.4 Cleanup methods for chemical spills

Liquid: absorb with a small amount of oil-absorbing cotton and transfer with a large amount of explosion-proof pump; Solid: transfer with spark-free tools (to prevent friction); Aerosol: leaking tanks are collected separately and disposed of professionally.

6.5 Measures to prevent the spread of leaks

Designate a 10-meter isolation zone and prohibit open flames/static equipment; set up fire barriers for liquids and anti-static isolation belts for gases; use explosion-proof ventilation to reduce concentration (explosion limit).

6.6 Container leakage treatment

Gas: Minor leaks should be sealed with anti-static sealant, serious leaks should be transferred after pressure relief; Liquid: Anti-static sealant should be used to seal, serious leaks should be transferred with explosion-proof pump; Aerosol: Do not squeeze, wrap in sealed bag.

6.7 Special considerations

Eliminate static electricity before operation; provide good ventilation to prevent gas accumulation; perform anti-static testing on tools; clean protective equipment and perform anti-static testing after leak treatment.

7: Handling and storage

7.1 Safe storage conditions

Store in a normally ventilated warehouse (air changes ? 4 times/hour) with a cement or asphalt floor (anti-slip); the container should be plastic or thin steel plate (thickness ? 1mm) with a sealed lid; the aerosol should be stored in a cool place to avoid pressure (stacking height ? 1.2 meters); the warehouse should be equipped with a dry powder fire extinguisher (capacity ? 2kg).

7.2 Storage precautions

Store away from oxidants (isolation distance ? 1 meter) and avoid direct sunlight; prevent flammable solids from absorbing moisture (such as sulfur, which must be sealed), and keep aerosols away from heat sources (such as radiators); check container labels monthly to ensure they are clear; handle with care during transportation to avoid impact.

7.3 VCI Storage Grade

Level 3 (Medium): The inner wall of the metal container is coated with VCI anti-rust oil (dosage ? 2g/m²) and inspected once every three months; the humidity in the warehouse is controlled at 40%-60% to prevent slight corrosion of the metal container.

7.4 Recommended storage temperature

10-35?, flammable liquids with a flash point ?23? can be relaxed to 5-40?; aerosols must be ?30? to prevent the tank from expanding due to heat; flammable solids should not be kept below 0? to prevent agglomeration and affect use (if the label has a recommended storage temperature, the label shall prevail).

7.5 Handling

For precautions see Safety Data Sheet section 2
Advice on safe handling : Work under hood. Do not inhale substance/mixture.

8: Exposure controls/personal protection

8.1 Respiratory protection

When exposed to flammable liquids with medium flash points (such as kerosene) or dusts (such as sulfur), wear a half-mask filtering respirator (APF?5); upgrade to a powered air respirator when ventilation is poor.

8.2 Recommended Filter type

For flammable liquid vapors, choose Type A1 filter cartridge; for dust, choose Type P100 filter cotton; for aerosols, choose Type A+P2 composite filter cartridge.

8.3 Eye/face protection

Wear ordinary impact-resistant goggles. If you are handling splashing liquids, wear protective glasses with scratch-resistant lenses to ensure a clear field of vision.

8.4 Skin and body protection

Wear ordinary anti-static clothing made of cotton blended conductive fiber; wear a dust-proof apron when handling solids to avoid dust adhesion.

8.5 Hand protection

Wear nitrile chemical-resistant gloves with a thickness of ?0.3mm and a certain degree of wear resistance. Check for damage after use.

8.6 Hygiene measures

Wash your hands with clean water after work. If you are exposed to dust, you need to clean your nasal cavity (with saline solution); clothes need to be patted to remove dust before washing to avoid the spread of dust; eating and drinking are prohibited in the work area.

9: Physical and chemical properties and safety characteristics

Physical state	1,2-dichloroethylene, (cis isomers) is a clear colorless liquid with an ether-like odor. Flash point 36-3.89°C. Denser than water and insoluble in water. Vapors heavier than air. Used in the making of perfumes.
Colour	Liquid
Odour	Sweetish
Melting point/freezing point	331°C(lit.)
Boiling point or initial boiling point and boiling range	61°C

Flammability	Class IB Flammable Liquid: Fl.P. below 22.78°C and BP at or above 37.78°C.Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	4°C(lit.)
Auto-ignition temperature	460°C
Decomposition temperature	When heated to decomposition it emits toxic fumes of /chloride/.
pH	no data available
Kinematic viscosity	0.48 cp at 20°C (liquid)
Solubility	1 to 5 mg/mL at 16.11°C
Partition coefficient n-octanol/water	log Kow = 1.86
Vapour pressure	200 mm Hg at 25°C ; 400 mm Hg at 41.11°C
Density and/or relative density	1.284 g/mL at 25oC(lit.)
Relative vapour density	3.34 (Relative to Air)
Particle characteristics	no data available

10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Sometimes thought to be nonflammable, however, it is a dangerous fire hazard when exposed to heat or flame. Reaction with solid caustic alkalies or their concentrated solns produces chloracetylene gas, which ignites spontaneously in air.The vapour is heavier than air and may travel along the ground; distant ignition possible.1,2-DICHLOROETHYLENE and potassium hydroxide forms chloroacetylene, which is explosive and spontaneously flammable in air. It is highly toxic, Rutledge, p134(1968).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

May release explosive chloroacetylene by the contact with copper or copper alloys. /1,2-Dichloroethylene/

10.6 Hazardous decomposition products

Decomposes slowly on exposure to air, light, and moisture. /sym-Dichloroethylene/

11: Toxicological information

11.1 Acute toxicity

Oral: no data available
Inhalation: no data available
Dermal: no data available

11.2 Skin corrosion/irritation

no data available

11.3 Serious eye damage/irritation

no data available

11.4 Respiratory or skin sensitization

no data available

11.5 Germ cell mutagenicity

no data available

11.6 Carcinogenicity

EPA: Not classifiable as to human carcinogenicity. IARC: Not evaluated. NTP: Not evaluated

11.7 Reproductive toxicity

no data available

11.8 STOT-single exposure

no data available

11.9 STOT-repeated exposure

no data available

11.10 Aspiration hazard

no data available

12: Ecological information

12.1 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

12.2 Persistence and degradability

AEROBIC: Chlorinated ethenes generally resist biodegradation when incubated under aerobic conditions(1). cis-1,2-Dichloroethylene, present at 2.6 mg/L reached 0% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 1 drop/L and the Japanese MITI test(2). In an enrichment biodegradability screening test employing a wastewater inoculum, the average total loss for cis-1,2-dichloroethylene, present at 5 ppm, was 54% in 7 days; 34% loss due to volatilization occurred in 10 days(3). Using enriched methane-utilizing bacteria developed from a sediment mixed culture, CO2-labeled cis-1,2-dichloroethylene, present at 660 ppb was completely degraded within 50 hours; degradation products were not identified(4). Mineralization of C14-labeled 1,2-dichloroethylene (mixture of 20% trans and 71% cis isomers) was observed under aerobic conditions in streambed sediments characterized by a high content of natural organic matter (2.5% dry mass organic content) and saturated with humic acid-laden black water(5); 67% of C14-labeled CO2 was recovered in 50 days(5) which corresponds to a first-order degradation half-life of 31 days(SRC). Biotransformation of cis-1,2-dichloroethylene was increased with the addition of glucose in aerobic studies done with two aquifer subsoils and one river sediment(6). cis-1,2-Dichloroethylene, a degradation product of pollutants including tetrachloroethylene and trichloroethylene, was degraded by Dehalococcoides ethenogenes strain 195 under aerobic conditions(7). Aerobic cometabolism of cis-1,2-dichloroethylene in five laboratory and field studies had reported first order degradation rates of 0.081 to 1.96/day(8). cis-1,2-Dichloroethylene, present at 170 ug/L, was 90 and 50% biodegraded in 204 days using a chloroethene-contaminated sediment/groundwater (Copenhagen, Denmark, workshop for locomotive engines) inoculum amended with methane and oxygen, respectively. Using a chloroethene-contaminated sediment/groundwater (Frederikssund, Denmark, industrial area), the compound was 20-35% and 40% biodegraded in 97 and 274 days, respectively(9).

12.3 Bioaccumulative potential

An estimated BCF of 8 was calculated in fish for cis-1,2-dichloroethylene(SRC), using a log Kow of 1.86(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).

12.4 Mobility in soil

The Koc of cis-1,2-dichloroethylene has been reported to be 49(1). According to a classification scheme(2), this Koc value suggests that cis-1,2-dichloroethylene is expected to have very high mobility in soil.

12.5 Other adverse effects

no data available

13: Disposal considerations

13.1 Disposal methods for waste chemicals

Flammable liquids can be recovered by distillation or burned in specialized incinerators. Flammable solids can be crushed and then mixed with other fuels for combustion (combustion temperature must be controlled). Aerosols must be emptied of their contents and the containers sorted by metal or plastic for recycling. Residues must be disposed of as flammable waste.

13.2 Precautions

The disposal process must be kept away from fire and heat sources; liquid volatiles must be effectively collected and treated; solid disposal must prevent dust; aerosol tanks must be confirmed to be completely empty before disposal; operators must avoid generating static electricity and wear appropriate protective equipment.

14: Transport information

14.1 UN Number

ADR/RID: UN1150 IMDG: UN1150 IATA: UN1150

14.2 UN Proper Shipping Name

ADR/RID: 1,2-DICHLOROETHYLENE IMDG: 1,2-DICHLOROETHYLENE IATA: 1,2-DICHLOROETHYLENE

14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4 Packing group, if applicable

ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards

ADR/RID: no IMDG: no IATA: no

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number

cis-1,2-Dichloroethylene	cis-1,2-Dichloroethylene	156-59-2	205-859-7
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Not Listed.
Australian Inventory of Industrial Chemicals (AIIC)			Not Listed.
Catalogue of Strictly Restricted Toxic Chemicals in China			Not Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
European INventory of Existing Commercial chemical Substances			Not Listed.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans			Not Listed.
TSCA Inventory of Chemical Substances			Listed.

16: Other information

Information on revision

SDS Creation Date	July 1, 2025
SDS Revision Date	July 1, 2025

Abbreviations and acronyms in SDS

- 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%

SDS 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/

Any questions regarding this Safety Data Sheet, Please send your inquiry to sales@MolBest.com

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