SAFETY DATA SHEET

1,3-Dichloropropene (cis/trans mixture) | Prepared in accordance with UN GHS (Rev. 10) and GB/T 16483-2008 / GB/T 17519-2013 | Revision 1.0 | Date: 2026-11-02

SECTION 1. IDENTIFICATION

Product name	1,3-Dichloropropene (cis/trans mixture)
Synonyms	1,3-DCP; 1,3-Dichloropropylene
CAS No.	542-75-6
Product type	Substance (technical grade, mixture of cis and trans isomers)
Recommended use	Industrial use only: pre-plant soil fumigant active ingredient (for formulation / application only where registered) and chemical intermediate.
Uses advised against	Consumer use; any use other than recommended.
Supplier	Zibo Yixiao Economic and Trade Co., Ltd. Room 206, Entrepreneurship Park, Qilu International Plastics and Chemical City, Linzi District, Zibo, Shandong, China
Manufacturer	Shandong Haiyi Chemical Technology Co., Ltd. Fuyuan 5th Road, Zhanhua District, Binzhou, Shandong, China
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification	Flammable liquids, Category 3 Acute toxicity (oral), Category 3 Acute toxicity (dermal), Category 3 Acute toxicity (inhalation), Category 4 Skin irritation, Category 2 Serious eye irritation, Category 2 Skin sensitization, Category 1 Carcinogenicity, Category 1B Specific target organ toxicity - single exposure, Category 3 (respiratory tract irritation) Aspiration hazard, Category 1 Hazardous to the aquatic environment - acute, Category 1 Hazardous to the aquatic environment - chronic, Category 1
Pictograms	GHS02 (flame), GHS06 (skull and crossbones), GHS08 (health hazard), GHS09 (environment)
Signal word	**DANGER**
Hazard statements	H226 Flammable liquid and vapour. H301 + H311 Toxic if swallowed or in contact with skin. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation. H350 May cause cancer. H410 Very toxic to aquatic life with long lasting effects.
Precautionary - prevention	P202 Do not handle until all safety precautions have been read and understood. P201 Obtain special instructions before use. 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 equipment. P242 Use non-sparking tools. P243 Take action to prevent static discharges. P261 Avoid breathing vapours. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary - response	P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor. P331 Do NOT induce vomiting. P302+P352 IF ON SKIN: Wash with plenty of water. P361+P364 Take off immediately all contaminated clothing and wash it before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P333+P313 If skin irritation or rash occurs: Get medical advice. P308+P313 IF exposed or concerned: Get medical advice. P370+P378 In case of fire: Use dry chemical, CO_2 or alcohol-resistant foam to extinguish. P391 Collect spillage.
Precautionary - storage / disposal	P403+P233 Store in a well-ventilated place. Keep container tightly closed. P403+P235 Keep cool. P405 Store locked up. P501 Dispose of contents/container in accordance with local/national regulations.
Other hazards	Lachrymator. Vapours are heavier than air. Corrosive to aluminium and magnesium.
Classification note	Classified Carcinogenicity Category 1B (H350) because the standard grade contains 1,2-dichloropropane (CAS 78-87-5, EU harmonised Carc. 1B) at 0.1 % or more. A low-impurity grade with 1,2-dichloropropane below 0.1 % can be supplied on request; that grade is classified Carcinogenicity Category 2 (H351) and is covered by a separate SDS.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	EC No.	Content (wt %)
1,3-Dichloropropene (cis + trans)	542-75-6	208-826-5	≥ 92
1,2-Dichloropropane	78-87-5	201-152-2	≥ 0.1 - < 8
Other chlorinated C3 hydrocarbons	-	-	balance

Constituent isomers: cis-1,3-dichloropropene (CAS 10061-01-5) and trans-1,3-dichloropropene (CAS 10061-02-6). Isomer ratio and exact impurity content vary by batch and are stated in the Certificate of Analysis.

SECTION 4. FIRST-AID MEASURES

Inhalation	Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen (trained personnel). If not breathing, give artificial respiration. Get medical attention immediately.
Skin contact	Take off immediately all contaminated clothing and shoes. Wash skin with plenty of water and soap for at least 15 minutes. Get medical attention.
Eye contact	Rinse immediately with plenty of water for at least 15 minutes, holding eyelids apart. Remove contact lenses if easy to do. Get medical attention.
Ingestion	Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a POISON CENTER or doctor immediately.
Main symptoms	Irritation of eyes, skin and respiratory tract; allergic skin reaction; headache, dizziness, nausea and central nervous system depression at high vapour concentrations. Aspiration of liquid into the lungs may cause chemical pneumonitis.
Note to physician	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Dry chemical powder, carbon dioxide, alcohol-resistant foam, sand. Water spray to cool containers.
Unsuitable media	Direct water jet (may spread the fire).
Specific hazards	Flammable liquid and vapour. Vapours are heavier than air, may travel to a source of ignition and flash back, and may form explosive mixtures with air above the flash point. Containers may rupture when heated. Combustion produces hydrogen chloride, carbon monoxide, carbon dioxide and possibly phosgene.
Advice for fire-fighters	Wear self-contained breathing apparatus and full protective clothing. Fight fire from upwind and from a safe distance. Cool exposed containers with water spray. Withdraw immediately if venting noise rises or a tank discolours. Prevent run-off from entering drains or watercourses.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate the area and keep upwind. Eliminate all ignition sources. Use non-sparking tools and explosion-proof equipment. Wear protective equipment (Section 8), including respiratory protection. Ensure adequate ventilation.
Environmental precautions	Prevent entry into drains, sewers, basements, surface water and soil.
Containment and clean-up	Small spills: absorb with inert, non-combustible material (sand, vermiculite) and place in closed, labelled containers for disposal. Large spills: dike far ahead; cover with foam to reduce vapour; recover with explosion-proof pumps into suitable containers.

SECTION 7. HANDLING AND STORAGE

Safe handling	Handle in closed systems or with local exhaust ventilation. Ground and bond all equipment during transfer. Use non-sparking tools. Avoid contact with skin and eyes and avoid inhaling vapour. Obtain special instructions before use. No smoking, eating or drinking in work areas; wash thoroughly after handling.
Storage	Store in a cool, dry, well-ventilated place away from heat, direct sunlight and ignition sources, preferably below 30 °C. Keep containers tightly closed and store locked up. Store separately from oxidizing agents, aluminium and its alloys, magnesium, and food/feed.
Packaging	200 L drums, 1000 L IBC or ISO tank containers suitable for the transport class and packing group in Section 14.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits	ACGIH TLV-TWA: 1 ppm (skin; A3 - confirmed animal carcinogen with unknown relevance to humans). No OSHA PEL established. Keep exposure as low as reasonably practicable.
Engineering controls	Closed system or local exhaust ventilation; explosion-proof equipment; eyewash stations and safety showers close to the workplace.
Respiratory protection	Where vapour concentrations may exceed exposure limits, use a full-face respirator with organic vapour cartridges (type A, EN 14387); in emergencies or confined spaces use self-contained breathing apparatus.
Eye / face protection	Chemical safety goggles and face shield.
Hand protection	Chemical-resistant gloves (e.g. Viton / fluororubber); check breakthrough time with the glove supplier.
Skin and body	Chemical-resistant, flame-retardant, antistatic protective clothing and safety footwear.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, colourless to amber / straw-coloured liquid
Odour	Sweet, penetrating, chloroform-like
Boiling point / range	approx. 104 - 112 °C (cis 104 °C, trans 112 °C)
Melting point	approx. -84 °C
Flash point	approx. 25 - 35 °C (closed cup)
Relative density (water = 1)	approx. 1.22 (20 °C)
Vapour pressure	approx. 3.7 kPa (25 °C)
Vapour density (air = 1)	approx. 3.8
Flammability limits	5.3 - 14.5 % (v/v)
Solubility in water	approx. 2 g/L (20 °C)
Partition coefficient log Kow	approx. 1.8 - 2.0
Auto-ignition temperature	No data available
Molecular formula / weight	$C_3H_4Cl_2$ / 110.97

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	Stable under recommended storage conditions.
Hazardous reactions	May polymerize when heated. Reacts with strong oxidizers. Corrodes aluminium and magnesium in the presence of moisture.
Conditions to avoid	Heat, flames, sparks, static discharge, direct sunlight.

Incompatible materials	Strong oxidizing agents, aluminium, magnesium and their alloys, halogens, strong acids and bases.
Hazardous decomposition products	Hydrogen chloride, carbon monoxide, carbon dioxide, phosgene.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity	Oral LD50 (rat): approx. 130 - 470 mg/kg (reported range; EU harmonised ATE 85 mg/kg proposed). Dermal LD50 (rabbit): approx. 500 - 775 mg/kg. Inhalation: harmful; LCLo (rat, 2 h) 1000 ppm.
Skin corrosion / irritation	Causes skin irritation; may be absorbed through the skin.
Eye damage / irritation	Causes serious eye irritation.
Sensitization	May cause an allergic skin reaction (skin sensitizer).
Germ cell mutagenicity	Positive results reported in some in vitro tests (e.g. Ames); not classified.
Carcinogenicity	1,3-Dichloropropene: IARC Group 2B; ACGIH A3. Impurity 1,2-dichloropropane: IARC Group 1, EU Carc. 1B. Both are listed under California Proposition 65 as known to cause cancer.
STOT - single exposure	May cause respiratory irritation; high vapour concentrations may cause headache, dizziness and central nervous system depression.
STOT - repeated exposure	Repeated exposure may affect the stomach (oral) and the respiratory tract (inhalation).
Aspiration hazard	May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	Very toxic to aquatic life with long lasting effects. Fish LC50 (96 h): approx. 3.9 - 4.1 mg/L. Daphnia EC50 (48 h): approx. 0.09 mg/L.
Persistence / degradability	Volatile; hydrolyses in water and degrades in soil (half-life days to weeks depending on conditions).
Bioaccumulation	Low potential (log Kow approx. 1.8 - 2.0).
Mobility in soil	Mobile in soil; volatilises readily from soil and water surfaces.
Other adverse effects	Avoid release to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Product	Dispose of as hazardous waste via a licensed waste disposal contractor, e.g. by controlled incineration with flue-gas scrubbing. Do not discharge to drains or the environment.
Contaminated packaging	Empty containers retain product residue and vapour. Do not cut, weld or pressurize. Return to supplier or dispose of via a licensed contractor.

SECTION 14. TRANSPORT INFORMATION

UN number	UN2047
UN proper shipping name	DICHLOROPROPENES
Transport hazard class	3
Packing group	III
Label	Flammable liquid (Class 3) + Environmentally hazardous substance mark
Marine pollutant	Yes
IMDG EmS	F-E, S-D
Special precautions	Keep away from heat and sources of ignition. Protect from direct sunlight. Ground tanks and drums during loading and unloading.
Bulk transport (IMO)	Shipped in packages / ISO tank containers; not intended for carriage in bulk under MARPOL Annex II / IBC Code.

SECTION 15. REGULATORY INFORMATION

China	Regulations on the Safe Management of Hazardous Chemicals; listed in the Catalogue of Hazardous Chemicals (2015 edition); GB 30000 series (GHS classification); GB 6944 / GB 12268 (dangerous goods).
International	IMDG Code; UN Recommendations on the Transport of Dangerous Goods; UN GHS.
EU	1,3-Dichloropropene: EC 208-826-5, Annex VI index 602-030-00-5 (harmonised classification). Not approved as a plant protection active substance in the EU; use is subject to national regulations. Contains 1,2-dichloropropane (Carc. 1B): REACH Annex XVII entries 28-30 apply - not to be supplied to the general public.
USA	TSCA Inventory: listed. EPA-registered soil fumigant active ingredient (FIFRA). SARA 313: listed. California Proposition 65: WARNING - this product can expose you to 1,3-dichloropropene and 1,2-dichloropropane, which are known to the State of California to cause cancer.

SECTION 16. OTHER INFORMATION

Classification basis	Classification follows the harmonised EU entry (Annex VI, index 602-030-00-5: Flam. Liq. 3, Acute Tox. 3 oral and dermal, Acute Tox. 4 inhalation, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, STOT SE 3, Asp. Tox. 1, Aquatic Acute 1, Aquatic Chronic 1), with Carcinogenicity Category 1B (H350) applied because the 1,2-dichloropropane impurity (EU harmonised Carc. 1B) is present at 0.1 % or more.
Key references	ECHA CLH report for 1,3-dichloropropene (2024); TCI Europe SDS D0405; US EPA and IARC monographs; supplier production data.
Revision	Revision 1.0, 2026-11-02. Supersedes all previous versions issued for this product.
Disclaimer	The information in this SDS is believed to be correct based on present knowledge. It describes the product with regard to safety requirements and does not constitute a guarantee of product properties. Batch-specific composition is given in the Certificate of Analysis. Users are responsible for compliance with all applicable laws and regulations.