



SAFETY DATA SHEET

1,1,2-TRICHLOROETHYLENE

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product name: 1,1,2 -TRICHLOROETHYLENE
Recommended use: Chemical for industry
Manufacturer/Supplier: **MODERN CHEMICAL Co.Ltd.**
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Emergency Telephone No: 0-2715-0897-9, 0-2392-3410-3

2. HAZARDS IDENTIFICATION

Label elements

Pictogram



Signal word

Danger

Hazard statement(s)

- 1.) Causes skin irritation.
- 2.) May be fatal if swallowed and enters airways.
- 3.) May cause drowsiness or dizziness.
- 4.) Toxic to aquatic life with long lasting effects.
- 5.) May damage the unborn child. Suspected of damaging fertility.

Precautionary statement(s)

- 1.) Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- 2.) Avoid release to the environment.



- 3.) IF SWALLOWED: call a doctor/physician. Do NOT induce vomiting.
- 4.) IF IN EYES: Rinse cautiously with water for 15 minutes.
- 5.) IF ON SKIN Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym: Acetylene trichloride, 1-Chloro-2, 2-dichloroethylene, 1, 1-Dichloro-2-chloroethylene, Ethylene trichloride, 1, 1, 2-Trichloroethylene, 1, 2, 2-Trichloroethylene, TCE

Ingredients	% (w/w)	CAS NO.
1,1,2-TRICHLOROETHYLENE	100	79-01-6

4. FIRST AID MEASURES

General advice:

Show this safety data sheet to the doctor in attendance.

Inhalation:

Move to fresh air in case of accidental inhalation of vapors. Keep patient warm.

In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus.

Skin contact:

Remove contaminated clothing and wash affected skin with soap and water. Obtain medical attention. If signs of poisoning appear, treat as for inhalation. Wash contaminated clothing before reuse.

Eye contact:

If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.

Ingestion:

Rinse mouth. **Do not induce vomiting.** Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only of patient is mouth to mouth or mouth to nose. Use suitable instruments/apparatus. **Obtain medical attention.** Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

In adaption to materials stored in the immediate neighborhood.



Unsuitable Extinguishing Media:

No data available

Specific hazards arising from Chemicals:

Non-combustible. Vapors heavier than air. Ambient fire may liberate hazardous vapors. The following may develop in event of fire: Hydrochloric acid, phosgene.

Special protective equipment for fire-fighters :

Keep a safety distance and wear suitable protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Wear a positive pressure supplied air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

Environmental precautions:

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and work pits. If substance has entered a water course or sewer or contaminated soil or vegetation, advise police.

Methods and Material for Containment and Clean Up:

Soak up with inert absorbent material (e.g. sand, silicagel). Prevent liquid entering sewers, basements and work pits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

7. HANDLING AND STORAGE

Precautions for Safe Handling & Product Transfer:

Work under hood. Do not inhale substance. Avoid generation of vapors/aerosols.

Conditions for Safe Storage & Unsuitable Materials:

Keep tightly closed at room temperature in a dry, cool and well ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible material. Store in original container. Electrical equipment should be protected to the appropriate standard.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: TWA 50 ppm (55 mg/m³), OEL 10 ppm (50 mg/m³)

Appropriate Engineering Controls: The product should only be used in ventilation hoods and fans.

Individual Protection Measures

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter A (acc. To DIN 3181) for vapors of organic compounds.

Hand protection: Handle with gloves. In case full contact wear gloves from viton material, in splash contact wear gloves from nitrile rubber material. The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.

Eye protection: Tightly sealed goggles.

Skin and body Protection: Chemical resistant apron/flame retardant antistatic protective clothing, heavy duty work shoes.

Hygiene measure: Keep working clothes separately. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form, Color and Odor: liquid, colourless, characteristic	Evaporation rate : 6.4 (n-Bu Acetate = 1)
Melting Point : -86 °C	Specific gravity : 1.46-1.51 g/cm ³ at 20 °C
pH: N/A	Solubility in water : 1.28 g/l at 25 °C
Boiling: 86-89 °C	Viscosity : 0.55 mPa.s
Vapour pressure: 410 mbar at 20 °C	Vapour density: 1.455 g/l
Lower explosion limits: 7.9 %Vol	Upper explosive limit: 90.0 %Vol
Auto-ignition temperature: 410 °C	Flash point: N/A
Odour threshold: N/A	Flammability (solid, gas): N/A
Decomposition temperature: N/A	Solubility in other solvents: N/A
n-octanol/water partition coefficient (log P_{ow}): 2.29	



10. STABILITY AND REACTIVITY

Chemical Stability: Stable under ordinary conditions of use and storage.

Reactions: No data available

Possibility of Hazardous Reactions: No data available

Conditions to avoid Strong heating.

Materials to be avoided: Alkali metals, alkali earth metals, metals in powder form, alkali hydroxides, alkali amides, semi metallic hydrogen compounds, perchloric acid, nitrogen oxides, light metals, aluminium chloride, strong oxidizing agents.

Hazardous Decomposition Products: Hydrochloric acid. (Hazardous decomposition products from under fire condition).

11. TOXICOLOGICAL INFORMATION

Acute toxicity: LD50 Inhalation – rat – 43.84 mg/l - 4h

LD50 Dermal –rabbit - >29000 mg/kg

LD50 Oral - rat – 5650 mg/kg

LD Lo Oral - human – 7000 mg/kg

Sensitization: After inhalation: Irritations of mucous membranes, coughing, dyspnoea, dizziness, drowsiness. Possible damages: Pulmonary oedema. After skin contact: Irritations. Degreasing effect on the skin, possibly followed by secondary inflammation. After eyes contact: Irritations. After swallowing: Nausea, vomiting. After accidental swallowing the substance may pose a risk of aspiration. Passage into the lung (vomiting) can result in a condition resembling pneumonia (chemical pneumonitis). After absorption: Headache, dizziness, cardiac dysrhythmia, nausea, agitation, spasms, inebriation, narcosis. After long term exposure to the chemical: Toxic effect on central nervous system. Damage liver and kidneys.

Chonic toxicity: Should be regarded as if it is carcinogenic to man. Substance which cause concern for man owing possible mutagenic effects. Bacterial mutagenicity; Ames test is negative.

Further toxicological information: The product should be handled with the care usual when dealing with chemicals



12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish: LC₅₀ - P. promelas – 41 mg/l - 96h

Toxicity to daphnia and other aquatic invertebrates: EC₅₀ - Daphnia magna – 18 mg/l - 48h

Toxicity to algae: IC₅₀ – Selenastrum capricornutum – 175 mg/l - 96h

Toxicity to bacteria: EC₅₀ – Photobacterium phosphoreum– 975 mg/l/ - 5min

Biodegradability remark: Biodegradation 19% /28d, not readily biodegradable.

Bioaccumulative potential: Distribution; log P (oct): 2.29.

No appreciable bioaccumulation potential is to be expected (log P o/w 1-3).

Mobility: No data available

Affected in any other way: No data available

13. DISPOSAL CONSIDERATIONS

Material Disposal: There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical. Observe all federal, state, and local environmental regulations.

Container Disposal: Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

14. TRANSPORT INFORMATION

ADR/RID

UN-No: 1710 Class: 6.1 Packing group: III

Proper shipping name: TRICHLOROETHYLENE

IMDG

UN-No: 1710 Class: 6.1 Packing group: III

Ems: F-A S-A

Proper shipping name: TRICHLOROETHYLENE



IATA

UN-No: 1710

Class: 6.1

Packing group: III

Proper shipping name: TRICHLOROETHYLENE

15. REGULATORY INFORMATION

GHS – Labelling:

Harzard statement(s)

- H350 May cause cancer.
- H341 Suspected of causing genetic defects.
- H319 Causes serious eye irritation.
- H315 Causes skin irritation.
- H336 May cause drowsiness or dizziness.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P261 Avoid breathing vapors.
- P264 Wash hand thoroughly after handling.
- 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.
- P362 Take off contaminated clothing and wash before reuse.
- P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
- P308 + P313 If exposed or concerned: Get medical advice/attention.
- P332 + P313 If skin irritation occurs: Get medical advice/attention.
- P337 + P313 If eye irritation persists: Get medical advice/attention.
- P405 Store locked up.



Hazard symbol(s)

Xi Irritant

R - phrase(s)

R45 May cause cancer.

R36/38 Irritating to eyes and skin.

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R67 Vapors may cause drowsiness and dizziness.

S - phrase(s)

S53 Avoid exposure - obtain special instructions before use.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S61 Avoid release to the environment. Refer to special instructions/ safety data sheet.

16. OTHER INFORMATION

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