



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.**
82/80 Soi Eakamai 22 (Nuan-noi) Sukhumvit Road 63,
North Klong Ton, Wattana, Bangkok 10110
Telephone No: 0-2715-0897-9, 0-2392-3410-3
Fax No: 0-2715-0908-9, 0-2391-1571-2
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.) Causes serious eye irritation.
- 3.) Suspected of causing genetic defect.
- 4.) May cause cancer.
- 5.) May cause drowsiness or dizziness
- 6.) Harmful to aquatic life with long lasting effects
- 7.) May cause respiratory tract irritation.
- 8.) May cause liver and kidney damage.
- 9.) May cause central nervous system effects Target organs: Kidneys, central nervous system, liver, spleen, respirator system, eye, skin.

**Precautionary statement(s):**

- 1.) Avoid release to the environment.
- 2.) Wear protective gloves/protective clothing/eye protection/face protection.
- 3.) Avoid breathing mist/vapours/spray.
- 4.) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- 5.) IF ON SKIN: Wash with plenty of soap and water.
- 6.) IF exposed or concerned: Get medical advice/attention.
- 7.) Store locked up.
- 8.) Dispose of contents/container in accordance with local/regional/national/international regulations.

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, Trineu, Trilene, Tri stabilised, TCE stabilised, Trichloroethene, Triklone.

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

4. FIRST AID MEASURES**General advice:**

Personal protection for the first aider. Remove contaminated clothing. If unconscious, place in recovery position and seek medical advice.

Inhalation:

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Skin contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid.

Eye contact:

Immediately flush with plenty of water at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Ingestion:

Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.



5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Use water spray, dry chemical, carbon dioxide, or chemical foam.

Unsuitable Extinguishing Media:

Water with a full water jet.

Specific hazards arising from Chemicals:

Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide and nitrogen oxides.

Special protective equipment for fire-fighters:

Wear self-contained breathing apparatus and Wear full protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Put on breathing apparatus. Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Bring persons out of danger.

Environmental precautions:

Do not allow to enter sewage system, water bodies, groundwater or soil. Inform respective authorities in case product reaches water, sewage system or soil.

Methods and Material for Containment and Clean Up:

Ensure adequate ventilation. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). Clean up effected area. May be recycled or disposed of in appropriate containers. Dispose of contaminated material as waste according to Item 13.

7. HANDING AND STORAGE

Precautions for Safe Handling & Product Transfer:

Do not get in eyes, on skin, or on clothing. Keep away from heat, sparks and flame. Do not ingest or inhale. Use only in a chemical fume hood.

Conditions for Safe Storage & Unsuitable Materials:

Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Keep containers closed when not in use – check regularly for leaks.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: TWA 10 - 100 ppm

Appropriate Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower. Use only under a chemical fume hood.

Individual Protection Measures

Respiratory protection: In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

Hand protection: Chemical-protective gloves.

Eye protection: Safety glasses with side protection.

Skin and body Protection: Wear appropriate protective clothing to prevent skin exposure.

Hygiene measure: No data available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form, Color and Odor : liquid, colourless, chloroform-like	Evaporation rate : N/A
Melting Point : (-87) – (-86) °C	Specific gravity : 1.460 - 1.470 g/cm ³ at 20 °C
pH : N/A	Solubility in water : 1.00 – 1.07 g/l at 20 °C
Boiling : 86-88 °C	Viscosity : 0.55 mPa.s at 25 °C
Vapour pressure : 77.3 – 78.7 mbar at 20 °C	Vapour density : 4.50 – 4.54 (air=1)
Lower explosion limits : 7.9 %Vol	Upper explosive limit : 100 %Vol
Auto-ignition temperature : 410 °C	Flash point : N/A
Odour threshold : N/A	Flammability (solid, gas) : N/A
Decomposition temperature : >110 °C	Solubility in other solvents : N/A
n-octanol/water partition coefficient (log P_{ow}) : 2.42	

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Moisture sensitive. Light sensitive.

Reactions: No data available.

Possibility of Hazardous Reactions: Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. Hazardous polymerization will not occur. Forms



explosive mixtures with air on intense heating. Reacts with oxidizing agents, alkaline metals, alkaline earth metals, light metals, perchloric acid, alkali(lyes), nitrogen oxides, aluminium chloride, powdered metals.

Conditions to avoid:

Foodstuffs, incompatible materials, light, ignition sources, excess heat, flame, sparks, electrostatic charges, exposure to moist air or water.

Materials to be avoided:

Strong oxidizing agents, Strong reducing agent, bases, active metals, metals, metal compounds(toxic, e.g beryllium, lead acetate, nickel, carbonyl, tetraethyl lead), light metals, hot metals and alkalis.

Hazardous Decomposition Products: Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide and nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

LD50 (Oral, rat): 4920 - 5620 mg/kg

LD50 (Dermal, rabbit): >20 - >20000 mg/kg

LC50 (Inhalation, rat): 140700 mg/m³ - 1h

LC50 (Inhalative, rat): 12500 ppm(V) - 4h

LDL0 (oral, human): 7000 mg/kg

Sensitization:

After inhalation: Material may be irritant to the mucous membranes of the respiratory tract (airways). Breathing in vapour can result in headaches, dizziness, drowsiness, and possible nausea. Breathing in high concentrations. Can produce central nervous system depression, which can lead to loss of co-ordination, impaired judgement and if exposure is prolonged, unconsciousness. Breathing in high concentrations may result in an irregular heart beat and prove suddenly fatal. After skin contact: Contact with skin will result in irritation. Will have a degreasing action on the skin. Repeated or prolonged. Skin contact may lead to irritant contact dermatitis.

After ingestion: Swallowing can result in nausea, vomiting and central nervous system depression. If the victim is showing signs of central system depression (like those of drunkenness) there is greater likelihood of the patient breathing in vomit and causing damage to the lungs.

Eye contact: An eye irritant.



Chonic toxicity: May cause cancer. IARC: Group 2A: The agent is probably carcinogenic to human.

Further toxicological information: No data available.

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish: LC50 - Fathead minnow: 40.7 – 67.0 mg/l -96h

LD50 - Bluegill sunfish: 44700 µg/l -96h

LC50 - Pimephales promelas: 40.7 mg/l -96h

LC50 - Jordanella floridae: 28.3 mg/l -96h

Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna: 85.2 mg/l - 48h

LC50 - Daphnia magna: 2.2-100 mg/l - 48h

IC50 - Daphnia magna: 20.8 mg/l - 48h

LC50 - Mollusk shrimp: 2 mg/l - 96h

Toxicity to algae: EC50 - Chlamydomonas reinh: 36.5 mg/l - 72h

EC50 - Scenedasmus subspic: 450 mg/l - 96h

IC50 - Selenastrum capric: 175 mg/l - 96h

Toxicity to bacteria: EC50 - Activated sludge: 260 mg/l - 3h

EC50 - Photobac. Phosphor: 975 mg/l – 5min

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

Bioaccumulative potential: Due to the distribution coefficient n-octanol/water a worth-mentioning accumulation in-inorganisms is not expected (log P o/w 1-4).

Mobility: Potential for mobil in soil is high.

Affected in any other way: No data available.

13. DISPOSAL CONSIDERATIONS

Material Disposal: Must not disposed-of together with household garbage. Do not allow product to reach sewage system. Refer to Waste Management authority. Material can be recycled. Dispose of material through a licensed waste contractor.



Container Disposal: Disposal must be media according to official regulations.

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

- **Safety, health and environmental regulation/lagislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:**
Employment restrictions concerning women of child-bearing age must be observed.
- **Other regulations, limitations and prohibitive regulations**

Substances of very high concern (SVHC) according to REACH, Article 57

79-01-6 trichloroethylene

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

US FEDERAL

TSCA

CAS # 79-01-6 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are an the Health & Safety Reporting List

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.



Section 12b

None of the chemicals are listed under TSCA Section 12b

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA

CERCLA Hazardous Substances and corresponding RQs

CAS # 79-01-6: 100 lb final RQ: 45.4 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 79-01-6: immediate, delayed, reactive.

Section 313

This material contains Trichloroethylene (CAS # 79-01-6, 99 + %) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Clean Air Act:

CAS # 79-01-6 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS # 79-01-6 is listed as a Hazardous Substance under the CWA CAS # 79-01-6 is listed as a Priority Pollutant under the Clean Water Act. CAS # 79-01-6 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS#79-01-6 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Trichloroethylene, a chemical known to the state of California to cause cancer.

California No Significant Risk Level; CAS # 79-01-6: 50 鎊/day NSRL (oral): 80 鎊/day NSRL (Inhalation)



European/international Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Risk Phrases:

R 36/38 Irritating to eyes and skin.

R 45 May cause cancer.

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment,

R 67 Vapours may cause drowsiness and dizziness

R 68 Possible risk of irreversible effects

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure-obtain special instructions before use.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)

CAS # 79-01-6 : 3

Canada DSL/NDSL

CAS # 79-01-6 is listed on Canada's DSL List .

Canada- WHMIS

This product has a WHMIS classification of D1B, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS # 79-01-6 is listed on the Canadian Ingredient Disclosure List.

Classification: Classified as hazardous according to criteria in the HS (Minimum Degrees of Hazard) Regulations 2001.

Subclasses: Substances 6.1 Category D – Substances which are acutely toxic.

Subclasses 6.3 Category A – Substances that are irritating to the skin.

Subclasses 6.4 Category A – Substances that are irritating to the eye.

Subclasses 6.6B Category III – Substances which cause concern for humans owing to possible mutagenic effects.



Subclasses 6.7 Category A – Substances that are known or presumed human carcinogens.

Subclasses 6.9 Category B – Substances that are harmful to human target organs or systems.

Subclasses 7.1 Category D – Substances that are slightly harmful to the aquatic environment or are otherwise designed for biocidal action.

16. OTHER INFORMATION

Modern Chemical Co.,Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensive or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

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