SAFETY DATA SHEET

PERCHLOROETHYLENE

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

Product name:	PERCHLOROETHYLENE
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 Warning

Hazard statement(s):

1.) Suspected of causing cancer.

2.) Toxic to aquatic life with long lasting effects.

Precautionary statement(s):

1.) Avoid release to the environment.

2.) Use personal protective equipment as required.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym: Carbon bichloride, Carbon dichloride, Ethylene tetrachloride, Tetrachloroethene, Dowper, Perklone, Perchlor.

Ingredients	% (w/w)	CAS NO.
PERCHLOROETHYLENE	100	127-18-4

4. FIRST AID MEASURES

General advice: Wear personal protective equipment. Consult a physician. Show this safety data sheet to the doctor in attendance.

Inhalation: If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

Skin contact: Wash off with soap and plenty of water. Consult a physician.

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Ingestion: Drink plenty of water. **Do not induce vomiting.** Cell a physician immediately. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Use water spray, alcohol – resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media:

No data available

Specific hazards arising from Chemicals:

Hydrogen chloride gas, phosgene.

Special protective equipment for fire-fighters:

Wear self contained breathing apparatus for fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid breathing vapor, mist or gas. Ensure adequate ventilation.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and Material for Containment and Clean Up:

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for Safe Handling & Product Transfer:

Avoid inhalation of vapour or mist. Normal measures for preventive fire protection. Use only in area provided with appropriate exhaust ventilations.

Conditions for Safe Storage & Unsuitable Materials:

Store in cool place. Keep container tightly closed in dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: TWA 25 ppm

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

Individual Protection Measures

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Eye protection: Safety glasses with side-shields conforming to EN166.

Skin and body protections: Choose body protection according to the amount and concentration of the dangerous substances at the work place.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form, Color and Odor : liquid, colorless, Ether like	**Evaporation rate :** N/A
Melting Point : (-22.0) - (-22.2) °C	**Specific gravity :** 1.620 – 1.628 g/cm^3 at 20 °C
pH : N/A	**Solubility in water :** N/A
Boiling point : 121.0 – 121.2 °C	**Viscosity :** N/A
Vapour pressure : 2.11 kPa at 20 °C, 17.3 hPa at 20 °C	**Vapour density :** 5.83
Lower explosive limits : N/A	**Upper explosive limits :** N/A
Auto-ignition temperature : N/A	**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}): 3.4	

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under recommended storage conditions.

Reactions: No data available

Possibility of Hazardous Reactions: No data available

Conditions to avoid: Keep away from open flames, hot surfaces and sources of ignition.

Materials to avoid: Strong oxidizing agents, strong bases.

Hazardous decomposition products: Hydrogen chloride gas, Carbon oxides and phosgene.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: LD50 (Oral, rat): 250 - 2629 mg/kg

LD50 (Oral, rabbit): 5000 mg/kg

LD50 (Dermal, rabbit): 6384 mg/kg

LC50 (Inhalation, rat): 4000 ppm-4h, 34200 mg/m3 -8h

Sensitization: Concentration substantially above the admissible concentration at the workplace can damage the central nervous system and may cause collapse. May cause irritation of respiratory tract. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Inhalation of vapours in high concentration may cause shortness of breath (lung oedema). May cause eye/skin irritation. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache).

Chronic toxicity: Chronic intensive skin contact may cause dermatitis. Repeated absorption may cause disorder of central nervous system, liver and kidneys.

Carcinogenic: Limited evidence of carcinogenicity in animal studies.

IARC: 2A-Group 2A: Probably carcinogenic to human (Tetrachloroethylene)

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

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish: LC50 - Onchorhynchus mykiss(rainbow trout): 4.9 mg/l -96h

LC50 - Lepomis macrochirus(bluegill): 13 mg/l -96h

LC50 - Gold fish: 10-100 ppm-96h

Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna: 7.5 – 8.5 mg/l-48h

Toxicity to algae: No data available

Toxicity to Bacterial: No data available

Biodegradability Remarks: Biochemical oxygen demand within 5 days (BOD5) = 0.06 g/g

Bioaccumulative Potential: Bioaccumulation Lepomis macrochirus(Bluegill) - 21d

Mobility: Water solubility: slight.

Affected in any other way: No data available

13. DISPOSAL CONSIDERATIONS

Material Disposal: Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an after burner and scrubber.

Container Disposal: Dispose of as unused product. Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

ADR/RID

UN-No: 1897 Class: 6.1 Packing group:III

Proper shipping name: TETRACHLOROETHYLENE

IMDG

UN-No: 1897 Class: 6.1 Packing group: III

Ems: F-A, S-A

Proper shipping name: TETRACHLOROETHYLENE

Marine pollutant: Marine pollutant

IATA

UN-No: 1897 Class: 6.1 Packing group: III

Proper shipping name: Tetrachloroethylene

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No.1907/2006.

According to (National equivalent of EC-Dir. 67/548), as amended, the product is labeiled as follows:

Symbol(s): Xn - Harmful. N - Dangerous for the Environment

R-Phrases R40 - Possible risks of irreversible effects.

R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-Phrases S23-Do not breathe vapour

S36/37 -Wear suitable protective clothing and gloves.

S61- Avoid release to the environment Refer to special instructions/Safety data sheets.

The European Community classifies perchloroethylene as a carcinogen of category 3.

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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