

SAFETY DATA SHEET

Perchloroethylene

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Name	Perchloroethylene
Product Identifier:	High Purity Chemicals
Synonyms:	Ethylene Tetrachloride; Tetrachloroethene; Tetrachloroethylene; Carbon Bichloride; Carbon Dichloride
Other means of identification:	CAS No. 127-18-4 EINECS No. 204-825-9
Recommended use of the chemical and restrictions on use:	Commonly used as solvent and cleaning/washing agent.
Manufactures /Supplier details:	SRF Limited, D-2/1 GIDC Phase-II, PCPIR, Dahej, Tal: Vagra Dist. Bharuch 392 130 Gujarat (India) Emergency Call +91 2641 289 201 / 202 / 206

2. HAZARDS IDENTIFICATION

OSHA Hazards:
Carcinogen, Corrosive

Target Organs:
Central nervous system, Heart, Kidney, Liver

NFPA



GHS label elements, including precautionary statements



Signal Word:
WARNING!

Hazard statement(s)

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P391	Collect spillage.
P501	Dispose of contents and container to an approved waste disposal plant.
P202	Do not handle until all safety precautions have been read and understood.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P405	Store locked up.
P281	Use personal protective equipment as required.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P273	Avoid release to the environment

GHS Classification(s)

Carcinogenicity	(Category 2)
Skin irritation	(Category 2)
Skin sensitization	(Category 1)
Specific target organ toxicity – (single exposure)	(Category 3)

Other hazards which do not result in classification:

Potential Health Effects:

Organ	Description
Eyes	Can be irritating to the eyes with symptoms of redness and pain.
Ingestion	Not highly toxic by this route because of low water solubility. Causes abdominal pain, nausea, diarrhea, headache, and dizziness.
Inhalation	Irritating to the upper respiratory tract. Giddiness, headache, intoxication, nausea and vomiting may follow the inhalation of large amounts while massive amounts can cause breathing arrest, liver and kidney damage, and death.
Skin	Causes irritation to skin. Symptoms include redness, itching, and pain. May be absorbed through the skin with possible systemic effects.
Chronic	Can cause liver, kidney or central nervous system damage after repeated or prolonged exposures. Suspected cancer risk from animal studies.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical identity:	Perchloroethylene
Common name / Synonym:	Ethylene Tetrachloride; Tetrachloroethene; Tetrachloroethylene; Carbon Bichloride; Carbon Dichloride
CAS number:	127-18-4
EINECS number:	204-825-9
UN #:	1897

% Weight	Material	CAS
100	Perchloroethylene	127-18-4

4. FIRST AID MEASURES

General advice

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Skin

Wash skin with soap and copious amounts of water. Seek medical attention.

Inhalation

Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

Eyes

Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

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

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Carbon oxides and hydrogen chloride gas expected to be the primary hazardous combustion products.

Special protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Do not inhale vapours/mist/gas/dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions:

Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

Methods and materials for containment and cleaning up:

Absorb with an inert dry material and place in an appropriate waste disposal container. Keep disposal containers closed when finished.

7. HANDLING AND STORAGE

Precautions for safe handling:

Do not get on skin or in eyes. Do not inhale vapor or mist. Take normal fire prevention measures.

Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a cool, dry, and well-ventilated place. Opened containers should be resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

Occupational Exposure Limits

Component	Source	Type	Value	Note
Perchloroethylene	US (ACGIH)	STEL	100 ppm	ACGIH Threshold Limit Value

Appropriate engineering controls:

General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.

Individual protection measures, such as personal protective equipment:

Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose 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:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU) Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

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

Appearance (physical state, color, etc.)	Liquid. Colorless, clear.
Odor	Ethereal.
Odor threshold	Specific data not available
pH	Specific data not available
Freezing point	-19 °C (-2 °F)
Initial boiling point and boiling range	121 °C (250 °F)
Melting Point	22.3°C (-8.1°F)
Flash point	Specific data not available
Evaporation rate	Specific data not available
Flammability (solid, gas)	Not flammable or combustible
Upper / Lower flammability or explosive limits	Specific data not available
Vapor pressure	17.3 hPa (13.0 mmHg) at 20 °C (68 °F)
Specific Density	1.63 at 68 ° F (USCG, 1999)
Vapor Density	5.7 (Air = 1)
Relative Density	1.623 g/cm ³ at 25 °C (77 °F)
Solubility(ies)	less than 0.1 mg/mL at 63° F (NTP, 1992)
Partition coefficient n-octanol/water(ies)	log Pow: 2.53
Auto-ignition temperature	Not flammable (USCG, 1999)
Decomposition temperature	Specific data not available
Chemical Formula (PERCHLOROETHYLENE)	C ₂ Cl ₄
Molecular Weight (PERCHLOROETHYLENE)	165.83 g/mol

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No data available
Conditions to avoid (e.g., static discharge, shock or vibration)	No data available
Incompatible materials	Strong oxidizing agents, strong bases
Hazardous decomposition products	Carbon oxides and Hydrogen chloride gas are expected to be, under fire conditions, the primary hazardous decomposition products.

11. TOXICOLOGICAL INFORMATION

Product Summary:

No data available for the mutagenic, teratogenic, or reproductive effects of the product. No data available to designate product as an aspiration hazard or to cause specific target organ toxicity through repeated use.

Acute Toxicity:

LC50 (Inhalation)	Rat	34,200 mg/m ³	8 hours
LD50 (Oral)	Rat	2,629 mg/kg	

Irritation:

Eyes

Rabbit - mild eye irritation

Skin

Rabbit - severe skin irritation - 24 hours

Specific target organ toxicity - single exposure (Globally Harmonized System)

Inhalation - May cause drowsiness or dizziness. - Central Nervous System

IARC: Group 2A: Probably carcinogenic to humans

ACGIH: No data is available.

NTP: Reasonably anticipated to be a human carcinogen

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Carcinogenicity. Route: Inhalation. Limited evidence through animal studies.

Other Hazards

Organ	Description
Eyes	Causes irritation, redness, and pain.
Ingestion	Not highly toxic by this route because of low water solubility. Causes abdominal pain, nausea, diarrhea, headache, and dizziness.
Inhalation	Irritating to the upper respiratory tract. Giddiness, headache, intoxication, nausea and vomiting may follow the inhalation of large amounts while massive amounts can cause breathing arrest, liver and kidney damage, and death.
Skin	Causes irritation to skin. Symptoms include redness, itching, and pain. May be absorbed through the skin with possible systemic effects.
Chronic	Can cause liver, kidney or central nervous system damage after repeated or prolonged exposures. Suspected cancer risk from animal studies.

12. ECOLOGICAL INFORMATION

Ecotoxicity (aquatic and terrestrial, where available):

Acute Fish Toxicity (PERCHLOROETHYLENE)

LC50 / 96 hours / Sheepshead Minnow - 9.8 mg/L

Acute Fish Toxicity (PERCHLOROETHYLENE)

LC50 / 96 hours / Bluegill - 13 mg/L

Toxicity to Daphnia (PERCHLOROETHYLENE)

EC50 / 48 hours / Water flea - 7.5 mg/L

Persistence and degradability:

No data available

Bioaccumulative potential:

Bioaccumulation: Bluegill - 21 days / Bioconcentration factor (BCF): 49

Other adverse effects:

Can be considered an environmental hazard through improper use or through improper disposal.

13. DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

Description of waste residues and information on their safe handling and methods of disposal:

UN number	1897
Proper Shipping name	TETRACHLOROETHYLENE
Transport hazard class(es)	6.1
Packing group (if applicable)	III

IMDG

UN-Number: 1897 Class: 6.1 Packing Group: III

EMS-No: F-A, S-A

Proper shipping name: TETRACHLOROETHYLENE

Marine pollutant: Yes

IATA

UN-Number: 1897 Class: 6.1

Packing Group: III

Proper shipping name: TETRACHLOROETHYLENE



SRF LIMITED

Rev: 04

Revision Date: 15.02.2018

15. REGULATORY INFORMATION

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

OSHA Hazards

Carcinogen, Corrosive

All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Chronic Health Hazard

CERCLA

Perchloroethylene CAS-No. 127-18-4, RQ: 100 lbs.

Massachusetts Right To Know Components

Perchloroethylene CAS-No. 127-18-4 Revision Date 2007-07-01

Pennsylvania Right To Know Components

Perchloroethylene CAS-No. 127-18-4 Revision Date 2007-07-01

New Jersey Right To Know Components

Perchloroethylene CAS-No. 127-18-4 Revision Date 2007-07-01

California Prop 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.
PERCHLOROETHYLENE CAS-No. 127-18-4 Revision Date 2007-09-28



16. OTHER INFORMATION:

INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. SRF Limited-Chemical business shall not be held liable for any damage resulting from handling or from contact with the above product.