



MATERIAL SAFETY DATA SHEET

CONTACT : **LEONID CHEMICALS**
Leonid Chemicals Pvt Ltd
62/A-2 1st Stage, Yeshwanthpur Industrial Suburb
Ashokpuram School Road
Bangalore-560 022, Karnataka, INDIA
Ph: +91-80-2337 8354, Fax: +91-80-2357 4827

Tetrachloroethylene, spectrophotometric grade, 99+%

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: Tetrachloroethylene, spectrophotometric grade, 99+%

Catalog Numbers:

T064

Synonyms:

Perchloroethylene

Company Identification:

LEONID CHEMICALS

62/A-2 2nd Stage, Industrial Suburb

Yeshwanthpur, Bangalore -22, INDIA

Ph- +91-80-23378354

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS #	:	127-18-4
Chemical Name	:	Tetrachloroethylene, spectrophotometric grade
%	:	99+%
EINECS#	:	204-825-9
Hazard Symbols	:	XN N
Risk Phrases	:	40

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Limited evidence of a carcinogenic effect. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Potential Health Effects

Eye:

Causes mild eye irritation. Causes redness and pain.

Skin:

Causes severe skin irritation. May be absorbed through the skin.

Ingestion:

Aspiration hazard. May cause central nervous system depression, kidney damage, and liver damage. Symptoms may include: headache, excitement, fatigue, nausea, vomiting, stupor, and coma. May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation:

Inhalation of vapor may cause respiratory tract irritation. May cause central nervous system effects including vertigo, anxiety, depression, muscle incoordination, and emotional instability.

Chronic:



Possible cancer hazard based on tests with laboratory animals. Prolonged or repeated skin contact may cause defatting and dermatitis. May cause respiratory tract cancer. May cause adverse nervous system effects including muscle tremors and incoordination. May cause liver and kidney damage. May cause reproductive and fetal effects.

SECTION 4 - FIRST AID MEASURES

Eyes:

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

Skin:

Get medical aid if irritation develops or persists. Flush skin with plenty of soap and water.

Ingestion:

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

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.

Notes to Physician:

SECTION 5 - FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing Media:

Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Flush down the spill with a large amount of water. Provide ventilation.

SECTION 7 - HANDLING and STORAGE

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not reuse this container. Avoid prolonged or repeated contact with skin. Avoid breathing vapors from heated material. Avoid contact with skin and eyes. Keep container tightly closed. Avoid ingestion and inhalation. Use only in a chemical fume hood. Keep away from flames and other sources of high temperatures that may cause material to form vapors.

Storage:

Keep away from heat and flame. Store in a cool, dry place. Do not store in direct sunlight. Keep containers tightly closed.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Clear liquid

Color: APHA: 10 max

Odor: sweetish odor

pH: Not available.

Vapor Pressure: 18 mbar @20 deg C

Viscosity: 0.89 mPas 20 deg C

Boiling Point: 121 deg C @ 760.00mm Hg

Freezing/Melting Point: -22 deg C

Autoignition Temperature: Not available.

Flash Point: Not available.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

Decomposition Temperature: >150 deg C

Solubility in water: 0.015 G/100ML WATER (20 °C)
Specific Gravity/Density: 1.6230g/cm³
Molecular Formula: Cl₂C=CCl₂
Molecular Weight: 165.83

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, light, excess heat, temperatures above 150 °C.

Incompatibilities with Other Materials:

Strong bases, metals, strong oxidizing agents, liquid oxygen, nitric acid, sodium hydroxide, dinitrogen tetroxide.

Hazardous Decomposition Products:

Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 127-18-4: KX3850000

LD50/LC50:

CAS# 127-18-4: Draize test, rabbit, eye: 162 mg Mild; Draize test, rabbit, eye: 500 mg/24H Mild; Draize test, rabbit, skin: 810 mg/24H Severe; Draize test, rabbit, skin: 500 mg/24H Mild; Inhalation, mouse: LC50 = 5200 ppm/4H; Inhalation, mouse: LC50 = 35000 mg/m³/4H; Inhalation, mouse: LC50 = 20200 mg/m³/6H; Inhalation, rat: LC50 = 34200 mg/m³/8H; Inhalation, rat: LC50 = 4100 ppm/6H; Oral, mouse: LD50 = 8100 mg/kg; Oral, mouse: LD50 = 6400 mg/kg; Oral, rat: LD50 = 2629 mg/kg.

Carcinogenicity:

Tetrachloroethylene, spectrophotometric grade -

ACGIH: A3 - Animal Carcinogen

California: carcinogen; initial date 4/1/88

NIOSH: potential occupational carcinogen

NTP: Suspect carcinogen

OSHA: Possible Select carcinogen

IARC: Group 2A carcinogen

Other:

See actual entry in RTECS for complete information.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

Water danger/protectio: WGK = 3Fish toxicity:LC50 (96hr) fathead minnow, American flagfish 6.8, 17 mg/l respectively - flowthrough bioassay.LC50 (17 day) guppy 18 mg/l .Invertebrate toxicity: EC50 (30 min) Photobacterium phosphoreum 120 ppm Microtox test.EC50 (24hr) Daphnia magna 0.5 mg/l(Dictionary of Substances and Their

Effects 1992).

SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

SECTION 14 - TRANSPORT INFORMATION

IATA

Shipping Name: TETRACHLOROETHYLENE

Hazard Class: 6.1

UN Number: 1897

Packing Group: III

IMO

Shipping Name: TETRACHLOROETHYLENE

Hazard Class: 6.1

UN Number: 1897

Packing Group: III

RID/ADR

Shipping Name: TETRACHLOROETHYLENE

Hazard Class: 6.1

UN Number: 1897

Packing group: III

USA RQ: CAS# 127-18-4: 100 lb final RQ; 45.4 kg final RQ

SECTION 15 - REGULATORY INFORMATION

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN N

Risk Phrases:

R 40 Limited evidence of a carcinogenic effect.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 36/37 Wear suitable protective clothing and gloves.

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

WGK (Water Danger/Protection)

CAS# 127-18-4: 3

United Kingdom Occupational Exposure Limits

CAS# 127-18-4: OES-United Kingdom, TWA 50 ppm TWA; 345 mg/m³ TWA

CAS# 127-18-4: OES-United Kingdom, STEL 100 ppm STEL; 689 mg/m³ STEL

United Kingdom Maximum Exposure Limits

Canada

CAS# 127-18-4 is listed on Canada's DSL List.

CAS# 127-18-4 is listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 127-18-4: OEL-ARAB Republic of Egypt:TWA 5 ppm (35 mg/m³);Skin
OEL-AUSTRALIA:TWA 50 ppm (335 mg/m³);STEL 150 ppm;CAR
OEL-BELGIUM:TWA 50 ppm (339 mg/m³);STEL 200 ppm (1368 mg/m³)
OEL-CZECHOSLOVAKIA:TWA 250 mg/m³;STEL 1250 mg/m³
OEL-DENMARK:TWA 30 ppm (200 mg/m³);Skin
OEL-FINLAND:TWA 50 ppm (335 mg/m³);STEL 75 ppm (520 mg/m³);Skin
OEL-FRANCE:TWA 50 ppm (335 mg/m³)
OEL-GERMANY:TWA 50 ppm (345 mg/m³);Carcinogen
OEL-HUNGARY:STEL 50 mg/m³;Skin;Carcinogen
OEL-JAPAN:TWA 50 ppm (340 mg/m³)
OEL-THE NETHERLANDS:TWA 35 ppm (240 mg/m³);Skin
OEL-THE PHILIPPINES:TWA 100 ppm (670 mg/m³)
OEL-POLAND:TWA 60 mg/m³
OEL-RUSSIA:TWA 50 ppm;STEL 10 mg/m³
OEL-SWEDEN:TWA 10 ppm (70 mg/m³);STEL 25 ppm (170 mg/m³)
OEL-SWITZERLAND:TWA 50 ppm (345 mg/m³);STEL 100 ppm;Skin
OEL-THAILAND:TWA 100 ppm;STEL 200 ppm
OEL-UNITED KINGDOM:TWA 50 ppm (335 mg/m³);STEL 15 ppm
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

US FEDERAL

TSCA

CAS# 127-18-4 is listed on the TSCA inventory.

SECTION 16 - ADDITIONAL INFORMATION

MSDS Creation Date: 10/09/1996 Revision #0 Date: Original.

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