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MATERIAL SAFETY DATA SHEET (MSDS)

TETRACHLOROETHYLENE LR (PERCHLOROETHYLENE)

1 - Chemical Product

MSDS Name:Tetrachloroethylene
Synonym:Ethylene tetrachloride; Tetrachlorethylene; Perchloroethylene; Perchloroethylen

Cas NO:127-18-4

Product Coad: SS0118900500

Molecular Formula: C₂Cl₄
Molecular Weight: 165.812

2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content	EINECS#
127-18-4	Tetrachloroethylene	99.0	204-825-9

3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Possible risks of irreversible effects. Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

Potential Health Effects

Eye:Contact with eyes may cause severe irritation, and possible eye burns.

Skin:May cause severe irritation and possible burns.

Ingestion: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.

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. Wash clothing before reuse. 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 to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.Get medical aid.

Notes to Physician:

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. Containers may explode in the heat of a fire.Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

Extinguishing Media:Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.

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. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Flush down the spill with a large amount of water. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

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 breathing vapors from heated material. Avoid contact with skin and eyes. Keep container tightly closed. Keep away from flames and other sources of high temperatures that may cause material to form vapors or mists.

Storage:Keep away from heat and flame. Store in a cool, dry place. Keep containers tightly closed.

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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.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Appearance: clear, colorless

Odor: sweetish odor

pH: Not available.

Vapor Pressure: 15.8 mm Hg

Viscosity: 0.89 mPa s 20 deg C

Boiling Point: 121 deg C

Freezing/Melting Point: -22.3 deg C

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

Decomposition Temperature: 150 deg C

Solubility in water: Nearly insoluble in water.

Specific Gravity/Density: 1.623

10 - STABILITY AND REACTIVITY

Chemical Stability:Stable under normal temperatures and pressures.

Conditions to Avoid:Incompatible materials, excess heat.

Incompatibilities with Other Materials:Strong bases, metals, liquid oxygen, dinitrogen tetroxide.

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

Hazardous Polymerization: Will not occur.

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, rat: LC50 = 34200 mg/m³/8H; Oral, mouse: LD50 = 8100 mg/kg; Oral, rat: LD50 = 2629 mg/kg.

Carcinogenicity:Tetrachloroethylene - ACGIH: A3 - Animal Carcinogen California: carcinogen; initial date 4/1/88 NIOSH: occupational carcinogen NTP:

Suspect carcinogen OSHA: Possible Select carcinogen IARC: Group 2A carcinogen Other:

See actual entry in RTECS for complete information.

12 - ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: Rainbow trout: LC50 = 5.28 mg/L; 96 Hr.; Static Condition, 12 degrees CFish: Fathead Minnow: LC50 = 18.4 mg/L; 96 Hr.; Flow-through

conditionFish: Bluegill/Sunfish: LC50 = 12.9 mg/L; 96 Hr.; Static ConditionBacteria: Phytobacterium phosphoreum: EC50 = 120.0 mg/L; 30 minutes;

Microtox test

13 - DISPOSAL CONSIDERATIONS

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

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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

Dangerous Goods Code: 6.1(15C)

UN Number: 1897

15 - REGULATORY INFORMATION
European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN N

Risk Phrases:

R 40 Possible risks of irreversible effects.

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

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.

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16. Other Information

Product Use: Laboratory Reagent.

In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

DISCLAIMER:

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
 - **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
 - **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness 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.
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