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TETRACHLOROETHYLENE- MATERIAL SAFETY DATA SHEET

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24 Hour EMERGENCY CONTACT

U.S- CHEMTREC 1-800-424-9300

CANADA- CANUTEC 613-996-6666

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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Matheson Tri-Gas, Inc.

The telephone numbers listed below are emergency numbers, please contact your local branch for routine inquiries.

USA

959 Route 46 East
Parsippany, New Jersey
07054-0624 USA
Phone: 973-257-1100

CANADA

530 Watson Street
Whitby, Ontario
L1N 5R9 Canada
Phone: 905-668-3570

SUBSTANCE: TETRACHLOROETHYLENE

SYMBOL: C₂CL₄

TRADE NAMES/SYNONYMS:

PERCHLOROETHYLENE; 1,1,2,2-TETRACHLOROETHYLENE; NEMA; ETHYLENE
TETRACHLORIDE; CARBON DICHLORIDE; PERCLENE; PERC; ANKILOSTIN;
TETRACHLORETHYLENE; PERCHLORETHYLENE; TETRACAP; TETRACHLOROETHENE;
DIDAKENE; PCE; RCRA U210; NCI-C04580; ENT 1,860; STCC 4940355; UN 1897; C₂CL₄;
MAT22900; RTECS KX3850000

CHEMICAL FAMILY: halogenated, aliphatic

CREATION DATE: Jan 24 1989

REVISION DATE: Mar 16 1999

2. COMPOSITION, INFORMATION ON INGREDIENTS

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COMPONENT: TETRACHLOROETHYLENE

CAS NUMBER: 127-18-4

EC NUMBER (EINECS): 204-825-9

EC INDEX NUMBER: 602-028-00-4

PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

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NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=0 REACTIVITY=0

WHMIS CLASSIFICATION: D2

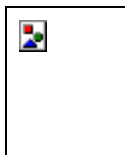
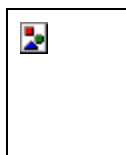
EC CLASSIFICATION (ASSIGNED):

N Dangerous for the Environment

Carcinogen Category 3

R 40-51/53

EC Classification may be inconsistent with independently-researched data.



EMERGENCY OVERVIEW:

Color: colorless

Physical Form: volatile liquid

Odor: faint odor, sweet odor

Major Health Hazards: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, suspect cancer hazard (in animals)

POTENTIAL HEALTH EFFECTS:

INHALATION:

Short Term Exposure: irritation, metallic taste, ringing in the ears, nausea, vomiting, chest pain, difficulty breathing, irregular heartbeat, headache, drowsiness, symptoms of drunkenness, blurred vision, lung congestion, kidney damage, liver damage, coma

Long Term Exposure: asthma, menstrual disorders, reproductive effects, cancer

SKIN CONTACT:

Short Term Exposure: irritation (possibly severe), blisters, symptoms of drunkenness

Long Term Exposure: same as effects reported in short term exposure

EYE CONTACT:

Short Term Exposure: irritation, tearing

Long Term Exposure: same as effects reported in short term exposure

INGESTION:

Short Term Exposure: vomiting, digestive disorders, headache, symptoms of drunkenness

Long Term Exposure: kidney damage, liver damage, cancer

CARCINOGEN STATUS:

OSHA: N

NTP: Y

IARC: Y

4. FIRST AID MEASURES

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INHALATION:

When safe to enter area, remove from exposure. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Keep warm and at rest. Get medical attention immediately.

SKIN CONTACT:

Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.

EYE CONTACT:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

INGESTION:

If vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious,

turn head to side. Get medical attention immediately.

NOTE TO PHYSICIAN:

For inhalation, consider oxygen. For ingestion, consider gastric lavage. Consider oxygen.

5. FIRE FIGHTING MEASURES

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FIRE AND EXPLOSION HAZARDS:

Negligible fire hazard.

EXTINGUISHING MEDIA:

carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING:

Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile).

FLASH POINT:

No data available.

6. ACCIDENTAL RELEASE MEASURES

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SOIL RELEASE:

Dig holding area such as lagoon, pond or pit for containment. Dike for later disposal. Absorb with sand or other non-combustible material.

WATER RELEASE:

Absorb with activated carbon. Remove trapped material with suction hoses. Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Small liquid spills: Absorb with sand or other non-combustible material. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Reportable Quantity (RQ): Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

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Store and handle in accordance with all current regulations and standards. Store in a cool, dry place. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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EXPOSURE LIMITS:

TETRACHLOROETHYLENE:

TETRACHLOROETHYLENE (PERCHLOROETHYLENE):

100 ppm OSHA TWA

200 ppm OSHA ceiling

300 ppm OSHA peak 5 minute(s)/3 hour(s)

25 ppm (170 mg/m³) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

25 ppm (170 mg/m³) ACGIH TWA

100 ppm (685 mg/m³) ACGIH STEL

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

At any detectable concentration -

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Escape -

Any air-purifying respirator with a full facepiece and an organic vapor canister.

Any appropriate escape-type, self-contained breathing apparatus.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

9. PHYSICAL AND CHEMICAL PROPERTIES

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PHYSICAL STATE: liquid

APPEARANCE: clear

COLOR: colorless

PHYSICAL FORM: volatile liquid

ODOR: faint odor, sweet odor

MOLECULAR WEIGHT: 165.83

MOLECULAR FORMULA: CL₂-C-C-CL₂

BOILING POINT: 250 F (121 C)

FREEZING POINT: -2 F (-19 C)

VAPOR PRESSURE: 14 mmHg @ 20 C

VAPOR DENSITY (air=1): 5.83

SPECIFIC GRAVITY (water=1): 1.6227

WATER SOLUBILITY: 0.015%

PH: Not available

VOLATILITY: Not available

ODOR THRESHOLD: 50 ppm

EVAPORATION RATE: 2.8 (butyl acetate=1)

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: alcohol, ether, benzene, chloroform, oils

10. STABILITY AND REACTIVITY

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REACTIVITY:

Stable at normal temperatures and pressure.

CONDITIONS TO AVOID:

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES:

acids, metals, bases, oxidizing materials, combustible materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: phosgene, halogenated compounds, oxides of carbon

POLYMERIZATION:

Will not polymerize.

11. TOXICOLOGICAL INFORMATION

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TETRACHLOROETHYLENE:

IRRITATION DATA:

810 mg/24 hour(s) skin-rabbit severe; 500 mg/24 hour(s) skin-rabbit mild; 162 mg eyes-rabbit mild; 500 mg/24 hour(s) eyes-rabbit mild

TOXICITY DATA:

34200 mg/m³/8 hour(s) inhalation-rat LC50; >10000 mg/kg skin-rabbit LD50 (Dow); 2629 mg/kg oral-rat LD50

CARCINOGEN STATUS: NTP: Anticipated Human Carcinogen; IARC: Human Limited Evidence,

Animal Sufficient Evidence, Group 2A; ACGIH: A3 -Animal Carcinogen; EC: Category 2

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Moderately Toxic: ingestion

Slightly Toxic: inhalation

TARGET ORGANS:

central nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

eye disorders, heart or cardiovascular disorders, kidney disorders, liver disorders, nervous system disorders, skin disorders and allergies

TUMORIGENIC DATA:

Available.

MUTAGENIC DATA:

Available.

REPRODUCTIVE EFFECTS DATA:

Available.

ADDITIONAL DATA:

May be excreted in breast milk. Alcohol may enhance the toxic effects. Stimulants such as epinephrine may induce ventricular fibrillation.

12. ECOLOGICAL INFORMATION

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ECOTOXICITY DATA:

FISH TOXICITY:

8430 ug/L 96 hour(s) LC50 (Mortality) Flagfish (*Jordanella floridae*)

INVERTEBRATE TOXICITY:

7500 ug/L 48 hour(s) EC50 (Immobilization) Water flea (*Daphnia magna*)

ALGAL TOXICITY:

509000 ug/L 96 hour(s) EC50 (Photosynthesis) Diatom (*Skeletonema costatum*)

FATE AND TRANSPORT:

BIOCONCENTRATION:

49 ug/L 1-21 hour(s) BCF (Residue) Bluegill (*Lepomis macrochirus*) 3.43 ug/L

13. DISPOSAL CONSIDERATIONS

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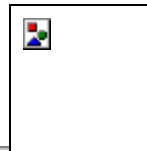
Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U210. Hazardous Waste Number(s): D039. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 0.7 mg/L. Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

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U.S. DOT 49 CFR 172.101. SHIPPING NAME-UN NUMBER; HAZARD CLASS; PACKING GROUP; LABEL:

Tetrachloroethylene-UN1897; 6.1; III; Keep away from food



15. REGULATORY INFORMATION

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U.S. REGULATIONS:

TSCA INVENTORY STATUS: Y

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CERCLA SECTION 103 (40CFR302.4): Y

Tetrachloroethylene (Perchloroethylene): 100 LBS RQ

SARA SECTION 302 (40CFR355.30): N

SARA SECTION 304 (40CFR355.40): N

SARA SECTION 313 (40CFR372.65): Y

Tetrachloroethylene (Perchloroethylene)

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):

ACUTE: Y

CHRONIC: Y

FIRE: N

REACTIVE: N

SUDDEN RELEASE: N

OSHA PROCESS SAFETY (29CFR1910.119): N

STATE REGULATIONS:

California Proposition 65: Y

Known to the state of California to cause the following:

Tetrachloroethylene (Perchloroethylene)

Cancer (Apr 01, 1988)

EUROPEAN REGULATIONS:

EC NUMBER (EINECS): 204-825-9

EC RISK AND SAFETY 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.
S 2	Keep out of reach of children.
S 23	Do not breathe gas, fumes, vapour, or spray.
S 36/37	Wear suitable protective clothing and gloves.

S 61	Avoid release to the environment. Refer to special instructions/Safety data sheets.
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CONCENTRATION LIMITS:C_≥1% X_n R 40

16. OTHER INFORMATION[Up to Table of Contents](#)

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