1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: TRICHLOROETHYLENE

TRADE NAMES/SYNONYMS:
MTG MSDS 199; ACETYLENE TRICHLORIDE; ETHYLENE TRICHLORIDE; 1-CHLORO-2,2-DICHLOROETHYLENE; 1,1-DICHLORO-2-CHLOROETHYLENE; TCE; ETHINYL TRICHLORIDE; TRICHLOROETHENE; 1,1,2-TRICHLOROETHYLENE; 1,1,2-TRICHLOROETHENE; UN 1710; RCRA U228; C2HCl3; MAT23850; RTECS KX4550000

CHEMICAL FAMILY: halogenated, alkenes

CREATION DATE: Jan 24 1989
REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: TRICHLOROETHYLENE
CAS NUMBER: 79-01-6
PERCENTAGE: >99

COMPONENT: INHIBITORS
CAS NUMBER: Not assigned.
PERCENTAGE: <0.1

COMPONENT: AMINES
CAS NUMBER: Not assigned.
PERCENTAGE: <0.1

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=1 REACTIVITY=0

EMERGENCY OVERVIEW:
COLOR: colorless
PHYSICAL FORM: liquid
ODOR: sweet odor
MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, allergic reactions, cancer hazard (in humans)
PHYSICAL HAZARDS: May polymerize. Containers may rupture or explode. May decompose on contact with air, light, moisture, heat or storage and use above room temperature. Releases toxic, corrosive, flammable or explosive gases.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: irritation, changes in blood pressure, nausea, vomiting, stomach pain, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, mood swings, tremors, loss of coordination, visual disturbances, bluish skin color, lung congestion, kidney damage, liver damage, unconsciousness, coma
LONG TERM EXPOSURE: same as effects reported in short term exposure, loss of appetite, weight loss, blood disorders, brain damage, cancer
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation, allergic reactions
LONG TERM EXPOSURE: irritation, allergic reactions, nausea, loss of appetite, weight loss, difficulty breathing, headache, drowsiness, dizziness, joint pain, loss of coordination, visual disturbances, paralysis
EYE CONTACT:
SHORT TERM EXPOSURE: irritation (possibly severe), blurred vision
LONG TERM EXPOSURE: irritation (possibly severe), eye damage
INGESTION:
SHORT TERM EXPOSURE: same as effects reported in short term inhalation
LONG TERM EXPOSURE: same as effects reported in long term inhalation

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

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 ingestion, consider gastric lavage. Consider oxygen.
5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Slight 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.
LOWER FLAMMABLE LIMIT: 7.8% @ 100 C
UPPER FLAMMABLE LIMIT: 52% @ 100 C
AUTOIGNITION: 770 F (410 C)

6. ACCIDENTAL RELEASE MEASURES

AIR RELEASE:
Reduce vapors with water spray. Collect runoff for disposal as potential hazardous waste.

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:

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. 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

STORAGE: 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

EXPOSURE LIMITS:
TRICHLOROETHYLENE:
100 ppm OSHA TWA
200 ppm OSHA ceiling
300 ppm OSHA peak (5 minutes in any 2 hours)
50 ppm (269 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)
200 ppm (1070 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
10 ppm ACGIH TWA
25 ppm ACGIH STEL
25 ppm NIOSH TWA 10 hour(s)
2 ppm NIOSH ceiling 60 minute(s) (used as halogenated anesthetic gas)

VENTILATION: Provide local exhaust 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 a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Escape -
Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted 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 a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** liquid
**COLOR:** colorless
**ODOR:** sweet odor
**MOLECULAR WEIGHT:** 131.39
**MOLECULAR FORMULA:** Cl-C-H-C-Cl₂
**BOILING POINT:** 189 F (87 C)
**FREEZING POINT:** -99 F (-73 C)
**VAPOR PRESSURE:** 58 mmHg @ 20 C
**VAPOR DENSITY (air=1):** 4.53
**SPECIFIC GRAVITY (water=1):** 1.4642
**WATER SOLUBILITY:** 0.1%
**PH:** Not available
**VOLATILITY:** Not available
**ODOR THRESHOLD:** 21 ppm
**EVAPORATION RATE:** 0.69 (carbon tetrachloride=1)
**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not available
**SOLVENT SOLUBILITY:**
Soluble: alcohol, ether, acetone, chloroform, benzene, vegetable oils

10. STABILITY AND REACTIVITY

**REACTIVITY:** May decompose on contact with air, light, moisture, heat or storage and use above room temperature. Releases toxic, corrosive, flammable or explosive gases.

**CONDITIONS TO AVOID:** Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

**INCOMPATIBILITIES:** bases, metals, combustible materials, oxidizing materials

**HAZARDOUS DECOMPOSITION:**
Thermal decomposition products: phosgene, halogenated compounds, oxides of carbon

**POLYMERIZATION:** May polymerize. Avoid contact with heat or light and monitor inhibitor content.

11. TOXICOLOGICAL INFORMATION

**TRICHLOROETHYLENE:**
**IRRITATION DATA:** 2 mg/24 hour(s) skin-rabbit severe; 20 mg/24 hour(s) eyes-rabbit moderate
**TOXICITY DATA:** 140700 mg/m³/1 hour(s) inhalation-rat LC50; >20 gm/kg skin-rabbit LD50; 4920 mg/kg oral-rat LD50
**CARCINOGEN STATUS:** NTP: Anticipated Human Carcinogen; IARC: Human Limited Evidence,
Animal Sufficient Evidence, Group 2A; ACGIH: A2 -Suspected Human Carcinogen

LOCAL EFFECTS:
Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:
Moderately Toxic: ingestion
Slightly Toxic: inhalation
Relatively Non-toxic: dermal absorption

TARGET ORGANS: immune system (sensitizer), central nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: heart problems

TUMORIGENIC DATA: Available.
MUTAGENIC DATA: Available.
REPRODUCTIVE EFFECTS DATA: Available.
ADDITIONAL DATA: May cross the placenta. Stimulants such as epinephrine may induce ventricular fibrillation.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:
FISH TOXICITY: 3100 ug/L 96 hour(s) LC50 (Mortality) Flagfish (Jordanella floridae)

INVERTEBRATE TOXICITY: 1700 ug/L 7 hour(s) EC50 (Regeneration) Flatworm (Dugesia japonica)

OTHER TOXICITY: 45000 ug/L 48 week(s) LC50 (Mortality) Clawed toad (Xenopus laevis)

FATE AND TRANSPORT:
BIOCONCENTRATION: 17 ug/L 1-14 hour(s) BCF (Residue) Bluegill (Lepomis macrochirus) 8.23 ug/L

13. DISPOSAL CONSIDERATIONS

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U228. Hazardous Waste Number(s): D040. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 0.5 mg/L. Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Trichloroethylene
ID NUMBER: UN1710
HAZARD CLASS OR DIVISION: 6.1
PACKING GROUP: III
LABELING REQUIREMENTS: 6.1
CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Trichloroethylene
UN NUMBER: UN1710
CLASS: 6.1
PACKING GROUP/CATEGORY: III

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
TRICHLOROETHYLENE: 100 LBS RQ


SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):
ACUTE: Yes
CHRONIC: Yes
FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):
TRICHLOROETHYLENE


STATE REGULATIONS:
California Proposition 65:
Known to the state of California to cause the following:
TRICHLOROETHYLENE
Cancer (Apr 01, 1988)

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: D2

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.
16. OTHER INFORMATION

“RTECS®” is a United States trademark owned and licensed under authority of the U.S. Government, by and through Symyx Software, Inc. Portions ©Copyright 2001, U.S. Government. All rights reserved.

©Copyright 1984-2009 ChemADVISOR, Inc. All rights reserved.

MATHESON TRI-GAS, INC. MAKES NO EXPRESS OR IMPLIED WARRANTIES, GUARANTEES OR REPRESENTATIONS REGARDING THE PRODUCT OR THE INFORMATION HEREIN, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR USE. MATHESON TRI-GAS, INC. SHALL NOT BE LIABLE FOR ANY PERSONAL INJURY, PROPERTY OR OTHER DAMAGES OF ANY NATURE, WHETHER COMPENSATORY, CONSEQUENTIAL, EXEMPLARY, OR OTHERWISE, RESULTING FROM ANY PUBLICATION, USE OR RELIANCE UPON THE INFORMATION HEREIN.