

MATERIAL SAFETY DATA SHEET

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: 1,1,2,2-TETRACHLOROETHANE

TRADE NAMES/SYNONYMS:

MTG MSDS 160; S-TETRACHLOROETHANE; ACETYLENE TETRACHLORIDE; SYM-TETRACHLOROETHANE; 1,1-DICHLORO-2,2-DICHLOROETHANE; ETHANE, 1,1,2,2-TETRACHLORO-; TETRACHLOROETHANE; SYMMETRICAL TETRACHLOROETHANE; CELLON; BONOFORM; STCC 4940354; RCRA U209; UN 1702; C2H2Cl4; MAT26400; RTECS KI8575000

CHEMICAL FAMILY: halogenated, aliphatic

CREATION DATE: Jan 24 1989

REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: 1,1,2,2-TETRACHLOROETHANE

CAS NUMBER: 79-34-5

PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

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



EMERGENCY OVERVIEW:

COLOR: colorless to yellow

PHYSICAL FORM: liquid

ODOR: sweet odor

MAJOR HEALTH HAZARDS: harmful if inhaled, respiratory tract irritation, skin irritation, eye irritation, central nervous system depression

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, rash, nausea, stomach pain, difficulty breathing, headache, drowsiness, symptoms of drunkenness, disorientation, tingling sensation, lung congestion, kidney damage, liver damage, convulsions, coma

LONG TERM EXPOSURE: no information on significant adverse effects

SKIN CONTACT:

SHORT TERM EXPOSURE: same as effects reported in short term inhalation, irritation, rash

LONG TERM EXPOSURE: same as effects reported in short term exposure

EYE CONTACT:

SHORT TERM EXPOSURE: irritation, tearing, eye damage

LONG TERM EXPOSURE: same as effects reported in short term exposure

INGESTION:

SHORT TERM EXPOSURE: same as effects reported in short term inhalation, symptoms of drunkenness, liver damage, coma

LONG TERM EXPOSURE: no information on significant adverse effects

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. 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 inhalation, consider oxygen. For ingestion, consider gastric lavage. Consider oxygen.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Slight fire hazard.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam

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

FIRE FIGHTING: Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for

surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

FLASH POINT: No data available.

6. ACCIDENTAL RELEASE MEASURES

WATER RELEASE:

Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

OCCUPATIONAL RELEASE:

Stop leak if possible without personal risk. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. 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. Keep separated from incompatible substances. Store in a cool, dry place. Keep in the dark.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

1,1,2,2-TETRACHLOROETHANE:

5 ppm (35 mg/m³) OSHA TWA (skin)

1 ppm (7 mg/m³) OSHA TWA (skin) (vacated by 58 FR 35338, June 30, 1993)

1 ppm ACGIH TWA (skin)

1 ppm (7 mg/m³) NIOSH recommended TWA 10 hour(s) (skin)

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. 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 and acid gas canister having an N100, R100, or P100 filter.

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 to yellow

ODOR: sweet odor

MOLECULAR WEIGHT: 167.85

MOLECULAR FORMULA: C-H-Cl₂-C-H-Cl₂

BOILING POINT: 295 F (146 C)

FREEZING POINT: -33 F (-36 C)

VAPOR PRESSURE: 8 mmHg @ 20 C

VAPOR DENSITY (air=1): 5.79

SPECIFIC GRAVITY (water=1): 1.5953

WATER SOLUBILITY: 0.28% @ 25 C

PH: Not available

VOLATILITY: 100%

ODOR THRESHOLD: <3 ppm

EVAPORATION RATE: 0.65 (butyl acetate=1)

VISCOSITY: 1.7 cP @ 20 C

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: methanol, ethanol, benzene, acetone, ether, chloroform, carbon tetrachloride, petroleum ether, dimethylformamide, carbon disulfide, oils

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

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

HAZARDOUS DECOMPOSITION:

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

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

1,1,2,2-TETRACHLOROETHANE:

TOXICITY DATA: 4500 mg/m³/2 hour(s) inhalation-mouse LC₅₀; 200 mg/kg oral-rat LD₅₀

CARCINOGEN STATUS: IARC: Human Inadequate Evidence, Animal Limited Evidence, Group 3;

ACGIH: A3 -Confirmed Animal Carcinogen

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Toxic: inhalation, ingestion

TARGET ORGANS: central nervous system, liver

TUMORIGENIC DATA: Available.

MUTAGENIC DATA: Available.

ADDITIONAL DATA: Alcohol may enhance the toxic effects.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: 12000 ug/L 96 hour(s) LC₅₀ (Mortality) Sheepshead minnow (*Cyprinodon variegatus*)

INVERTEBRATE TOXICITY: 23000 ug/L 48 hour(s) EC₅₀ (Immobilization) Water flea (*Daphnia magna*)

ALGAL TOXICITY: 6440 ug/L 96 hour(s) EC₅₀ (Photosynthesis) Diatom (*Skeletonema costatum*)

FATE AND TRANSPORT:

BIOCONCENTRATION: 8 ug/L 1-14 hour(s) BCF (Residue) Bluegill (*Lepomis macrochirus*) 9.62 ug/L

ENVIRONMENTAL SUMMARY: Moderately toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U209. Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Tetrabromoethane
ID NUMBER: UN2504
HAZARD CLASS OR DIVISION: 6.1
PACKING GROUP: III
LABELING REQUIREMENTS: 6.1
MARINE POLLUTANT: 1,1,2,2-TETRACHLOROETHANE



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Tetrabromoethane
UN NUMBER: UN2504
CLASS: 6.1
PACKING GROUP/CATEGORY: III

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
1,1,2,2-TETRACHLOROETHANE: 100 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C): Not regulated.

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):
1,1,2,2-TETRACHLOROETHANE

OSHA PROCESS SAFETY (29 CFR 1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65:

Known to the state of California to cause the following:

1,1,2,2-TETRACHLOROETHANE

Cancer (Jul 01, 1990)

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

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