

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: CHLOROFORM

TRADE NAMES/SYNONYMS:

MTG MSDS 109; TRICHLOROMETHANE; METHANE TRICHLORIDE; R 20; FREON 20; METHYL TRICHLORIDE; TRICHLOROFORM; R 20 (REFRIGERANT); METHENYL TRICHLORIDE; RCRA U044; UN 1888; CHCl₃; MAT04770; RTECS FS9100000

CHEMICAL FAMILY: halogenated, hydrocarbons

CREATION DATE: Jan 24 1989

REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: CHLOROFORM
CAS NUMBER: 67-66-3
PERCENTAGE: >99

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

3. HAZARDS IDENTIFICATION

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

EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: volatile liquid

ODOR: sweet odor and taste

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, liver damage, central nervous system depression, kidney damage, suspect cancer hazard (in animals)



POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, changes in blood pressure, nausea, vomiting, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, hyperactivity, loss of coordination, dilated pupils, blood disorders, heart damage, kidney damage, liver damage, convulsions, unconsciousness, coma

LONG TERM EXPOSURE: nausea, vomiting, diarrhea, loss of appetite, headache, disorientation, tremors, blurred vision, blood disorders, kidney damage, liver damage

SKIN CONTACT:

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

LONG TERM EXPOSURE: same as effects reported in long term inhalation

EYE CONTACT:

SHORT TERM EXPOSURE: irritation, visual disturbances

LONG TERM EXPOSURE: irritation

INGESTION:

SHORT TERM EXPOSURE: irritation, changes in blood pressure, nausea, vomiting, diarrhea, stomach pain, chest pain, difficulty breathing, muscle cramps, dilated pupils, bluish skin color, kidney damage, liver damage, unconsciousness

LONG TERM EXPOSURE: kidney damage, liver damage, cancer

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: For ingestion, consider gastric lavage. Consider oxygen. Avoid epinephrine. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.

EXTINGUISHING MEDIA: regular dry chemical, regular foam, water

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. Fight large fires from a protected location or safe distance. Stay away from the ends of tanks. Dike for later disposal. Do not scatter spilled material with high-pressure water streams.

FLASH POINT: No data available.

6. ACCIDENTAL RELEASE MEASURES

SOIL RELEASE:

Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers. Dike for later disposal. Absorb with sand or other non-combustible material. Collect with absorbent into suitable container.

WATER RELEASE:

Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers. Remove trapped material with suction hoses. Collect spilled material using mechanical equipment. Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

OCCUPATIONAL RELEASE:

Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Small dry spills: Move containers away from spill to a safe area. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. 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. Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ (U.S. EPA SARA Section 302). SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355 Part B). Store in a cool, dry place. Store in a well-ventilated area. Keep separated from incompatible substances. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

CHLOROFORM:

50 ppm (240 mg/m³) OSHA ceiling

2 ppm (9.78 mg/m³) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

10 ppm ACGIH TWA

2 ppm (9.78 mg/m³) NIOSH recommended STEL 60 minute(s)

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 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

APPEARANCE: clear

COLOR: colorless

PHYSICAL FORM: volatile liquid

ODOR: sweet odor and taste

MOLECULAR WEIGHT: 119.38

MOLECULAR FORMULA: C-H-Cl₃

BOILING POINT: 144 F (62 C)

FREEZING POINT: -83 F (-64 C)

VAPOR PRESSURE: 160 mmHg @ 20 C

VAPOR DENSITY (air=1): 4.12

SPECIFIC GRAVITY (water=1): 1.4832

WATER SOLUBILITY: 0.82% @ 20 C

PH: Not available

VOLATILITY: 100%

ODOR THRESHOLD: 200 ppm

EVAPORATION RATE: 11.6 (butyl acetate=1)

VISCOSITY: .563 cP @ 20 C

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: alcohol, ether, acetone, benzene, ligroin, naphtha, petroleum ether, carbon tetrachloride, carbon disulfide, oils, organic solvents

10. STABILITY AND REACTIVITY

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: metals, combustible materials, oxidizing materials, halogens, bases

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: oxides of chlorine, carbon, phosgene, chlorine, acid halides

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

CHLOROFORM:

IRRITATION DATA: 10 mg/24 hour(s) open skin-rabbit mild; 500 mg/24 hour(s) skin-rabbit mild; 148 mg eyes-rabbit; 20 mg/24 hour(s) eyes-rabbit moderate

TOXICITY DATA: 6000 mg/m³/6 hour(s) inhalation-rat LC50; >20 gm/kg skin-rabbit LD50; 300 mg/kg oral-rat LD50

CARCINOGEN STATUS: NTP: Anticipated Human Carcinogen; IARC: Human Inadequate Evidence, Animal Sufficient Evidence, Group 2B; ACGIH: A3 -Confirmed Animal Carcinogen

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Toxic: ingestion

Moderately Toxic: inhalation

TARGET ORGANS: central nervous system, liver, kidneys

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: history of alcoholism, eye disorders, heart problems, kidney disorders, liver disorders, respiratory 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

ECOTOXICITY DATA:

FISH TOXICITY: 66800 ug/L 96 hour(s) LC50 (Mortality) Rainbow trout, donaldson trout (Oncorhynchus mykiss)

INVERTEBRATE TOXICITY: 32000 ug/L 96 hour(s) NOEC (Mortality) Pink shrimp (america) (Penaeus duorarum)

ALGAL TOXICITY: >3200000 ug/L 48 hour(s) (Population Growth) Cryptomonad (Chilomonas paramecium)

OTHER TOXICITY: 270 ug/L 7 hour(s) EC50 (Teratogenesis) Spring peeper (Hyla crucifer)

FATE AND TRANSPORT:

BIOCONCENTRATION: 690 Ci/mol 6 hour(s) BCF (Residue) Green algae (Selenastrum capricornutum) 13.9 Ci/mol

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U044. Hazardous Waste Number(s): D022. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 6.0 mg/L.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Chloroform

ID NUMBER: UN1888

HAZARD CLASS OR DIVISION: 6.1

PACKING GROUP: III

LABELING REQUIREMENTS: 6.1



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Chloroform

UN NUMBER: UN1888

CLASS: 6.1

PACKING GROUP/CATEGORY: III

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

Chloroform: 10 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B):

Chloroform: 10000 LBS TPQ

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C):

Chloroform: 10 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):

Chloroform

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

STATE REGULATIONS:

California Proposition 65:

Known to the state of California to cause the following:

Chloroform

Cancer (Oct 01, 1987)

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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