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: METHYL FLUORIDE

TRADE NAMES/SYNONYMS:  
MTG MSDS 61; FLUOROMETHANE; METHANE, FLUORO-; FREON 41; FLUOROMETHANE (CH3F); CH3F; HALACARBON 41; UN2454; MAT14490

CHEMICAL FAMILY: halogenated, aliphatic

PRODUCT USE: industrial

CREATION DATE: Mar 02 1989  
REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: METHYL FLUORIDE  
CAS NUMBER: 593-53-3  
PERCENTAGE: 100

3. HAZARDS IDENTIFICATION

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

EMERGENCY OVERVIEW:  
COLOR: colorless  
PHYSICAL FORM: gas  
ODOR: sweet odor

MAJOR HEALTH HAZARDS: central nervous system depression, difficulty breathing

PHYSICAL HAZARDS: Flammable gas. May cause flash fire.

POTENTIAL HEALTH EFFECTS:  
INHALATION:
SHORT TERM EXPOSURE: nausea, vomiting, symptoms of drunkenness, suffocation, convulsions, coma
LONG TERM EXPOSURE: no information is available

SKIN CONTACT:
SHORT TERM EXPOSURE: blisters, frostbite
LONG TERM EXPOSURE: no information is available

EYE CONTACT:
SHORT TERM EXPOSURE: frostbite, blurred vision
LONG TERM EXPOSURE: no information is available

INGESTION:
SHORT TERM EXPOSURE: frostbite
LONG TERM EXPOSURE: no information is available

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: If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

EYE CONTACT: Flush eyes with plenty of water.

INGESTION: If a large amount is swallowed, get medical attention.

NOTE TO PHYSICIAN: For inhalation, consider oxygen.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical

Large fires: Flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from
other flammables. Evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Evacuate if fire gets out of control or containers are directly exposed to fire. Evacuation radius: 500 meters (1/3 mile). Consider downwind evacuation if material is leaking.

**FIRE FIGHTING PROTECTIVE EQUIPMENT:** Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

**FLASH POINT:** extremely flammable
**LOWER FLAMMABLE LIMIT:** Not available
**UPPER FLAMMABLE LIMIT:** Not available
**AUTOIGNITION:** Not available

**HAZARDOUS COMBUSTION PRODUCTS:**
Thermal decomposition or combustion products: halogenated compounds, oxides of carbon

### 6. ACCIDENTAL RELEASE MEASURES

**OCCUPATIONAL RELEASE:**

### 7. HANDLING AND STORAGE


**HANDLING:** Use only with adequate ventilation.

### 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

**EXPOSURE LIMITS:**
**METHYL FLUORIDE:**
No occupational exposure limits established.

**VENTILATION:** Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.
EYE PROTECTION: For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

GLOVES: Wear insulated gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
- Any supplied-air respirator with a full facepiece that is operated in a 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.

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:** gas
**COLOR:** colorless
**ODOR:** sweet odor
**MOLECULAR WEIGHT:** 34.03
**MOLECULAR FORMULA:** C-H3-F
**BOILING POINT:** -108 F (-78 C)
**FREEZING POINT:** -224 F (-142 C)
**DECOMPOSITION POINT:** Not available
**VAPOR PRESSURE:** 3810 kPa @ 21.1 C
**VAPOR DENSITY (air=1):** 1.195
**SPECIFIC GRAVITY:** Not applicable
**DENSITY:** 1.4397 g/L @ 20 C
**WATER SOLUBILITY:** 166% @ 15 C
**PH:** Not applicable
**VOLATILITY:** Not applicable
**ODOR THRESHOLD:** Not available
**EVAPORATION RATE:** Not applicable
**VISCOSITY:** 0.01086 cP @ 25 C
**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not applicable
**SOLVENT SOLUBILITY:**
**Soluble:** alcohol, ether, benzene, chloroform
10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

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

INCOMPATIBILITIES: oxidizing materials

HAZARDOUS DECOMPOSITION:
Thermal decomposition or combustion products: halogenated compounds, oxides of carbon

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

METHYL FLUORIDE:
TARGET ORGANS: central nervous system
central nervous system
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.
ADDITIONAL DATA: Stimulants such as epinephrine may induce ventricular fibrillation.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:
FISH TOXICITY: No data available.

INVERTEBRATE TOXICITY: No data available.

ALGAL TOXICITY: No data available.

FATE AND TRANSPORT:
BIODEGRADATION: No data available.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.
14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Methyl fluoride
ID NUMBER: UN2454
HAZARD CLASS OR DIVISION: 2.1
LABELING REQUIREMENTS: 2.1
QUANTITY LIMITATIONS:
PASSENGER AIRCRAFT OR RAILCAR: Forbidden
CARGO AIRCRAFT ONLY: 150 kg

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Methyl fluoride
UN NUMBER: UN2454
CLASS: 2.1

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.


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


STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: AB
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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