Safety Data Sheet

Material Name: Methyl Fluoride

** **Section 1 - IDENTIFICATION** **

Manufacturer Information
Electronic Fluorocarbons
3266 Bergey Road
Hatfield PA 19440

General Information: 1-215-443-9600
Emergency #: 1-800-535-5053
Outside the US: 1-352-323-3500 (Call collect)

Product Identifier: HALOCARBON 41

Trade Names/Synonyms
METHYL FLUORIDE; MTG MSDS 61; FLUOROMETHANE; METHANE, FLUORO-; FREON 41;
FLUOROMETHANE (CH3F); CH3F; UN2454

Chemical Family
halogenated, aliphatic

Product Use
industrial

Restrictions on Use
none known

** **Section 2 - HAZARDS IDENTIFICATION** **

GHS Classification
Flammable gas, Category 1
Gas under pressure, Liquefied gas

GHS LABEL ELEMENTS
Symbol(s)

Signal Word
DANGER

Hazard Statement(s)
Extremely flammable gas
Contains gas under pressure; may explode if heated

Precautionary Statement(s)
Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Store in a well-ventilated place.
Protect from sunlight.

** **Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS** **

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>593-53-3</td>
<td>HALOCARBON 41</td>
<td>100</td>
</tr>
</tbody>
</table>
Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Fluorides.

**Section 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**
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.

**Eyes**
Flush eyes with plenty of water.

**Ingestion**
If a large amount is swallowed, get medical attention.

**Note to Physicians**
For inhalation, consider oxygen.

**Symptoms: Immediate**
suffocation

**Symptoms: Delayed**
No data available.

**Section 5 - FIRE FIGHTING MEASURES**

See Section 9 for Flammability Properties

**Specific Hazards Arising from the Chemical**
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.

**Unsuitable Extinguishing Media**
None known.

**Protective Equipment and Precautions for Firefighters**
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.
**Fire Fighting Measures**

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.

**Hazardous Combustion Products**

Combustion: halogenated compounds, oxides of carbon

***Section 6 - ACCIDENTAL RELEASE MEASURES***

**Personal Precautions**

Wear personal protective clothing and equipment, see Section 8.

**Environmental Precautions**

Avoid release to the environment.

**Methods for Containment**

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Reduce vapors with water spray.

**Cleanup Methods**

Stop leak if safe to do so - Prevent entry into waterways, drains, or confined areas. Eliminate all ignition sources if safe to do so. All equipment used when handling the product must be grounded. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Damaged cylinders should be handled only by specialists.

***Section 7 - HANDLING AND STORAGE***

**Handling Procedures**

Use only with adequate ventilation.

**Storage Procedures**


**Incompatibilities** oxidizing materials
**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

Component Exposure Limits

**HALOCARBON 41 (593-53-3)**

- **ACGIH:** 2.5 mg/m³ TWA (as F, related to Fluorides)
- **OSHA (Final):** 2.5 mg/m³ TWA (as F); 2.5 mg/m³ TWA (dust, related to Fluorides)
- **OSHA (Vacated):** 2.5 mg/m³ TWA (related to Fluorides)

Component Biological Limit Values

**HALOCARBON 41 (593-53-3)**

- **ACGIH:** 2 mg/L Medium: urine Time: prior to shift Parameter: Fluoride (background, nonspecific); 3 mg/L Medium: urine Time: end of shift Parameter: Fluoride (background, nonspecific, related to Fluorides)

**Engineering Controls**

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT**

**Eyes/Face**

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.

**Protective Clothing**

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

**Glove Recommendations**

Wear insulated gloves.

**Respiratory Protection**

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.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**
Safety Data Sheet

Material Name: HALOCARBON 41

Physical State: Gas
Color: colorless
Odor: sweet odor
pH: Not available
Boiling Point: -78 °C
Decomposition: Not available
Vapor Pressure: 3810 kPa @ 21.1 °C
Density: 1.4397 g/L @ 20 °C
Log KOW: Not available
Viscosity: 0.01086 cP @25 °C
Molecular Formula: C-H3-F

Solvent Solubility
Soluble: alcohol, ether, benzene, chloroform

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**Section 10 - STABILITY AND REACTIVITY**

Chemical Stability
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.

Possibility of Hazardous Reactions
Will not polymerize.

Incompatible Materials
oxidizing materials

Hazardous Decomposition
Combustion: halogenated compounds, oxides of carbon

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**Section 11 - TOXICOLOGICAL INFORMATION**

Acute and Chronic Toxicity
Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and no selected endpoints have been identified.

RTECS Acute Toxicity (selected)
The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

Product Toxicity Data
No data available.

Immediate Effects
suffocation

Delayed Effects
No data available.

Irritation/Corrosivity Data
No animal testing data available for skin or eyes.

RTECS Irritation
The components of this material have been reviewed and RTECS publishes no data as of the date on this document.
Safety Data Sheet

Material Name: HALOCARBON 41

Target Organs
HALOCARBON 41 (593-53-3)
central nervous system

Respiratory Sensitizer
No data available.

Dermal Sensitizer
No data available.

Carcinogenicity
Component Carcinogenicity
HALOCARBON 41 (593-53-3)
ACGIH: A4 - Not Classifiable as a Human Carcinogen (related to Fluorides)

Mutagenic Data
No data available.

RTECS Mutagenic
The components of this material have been reviewed, and RTECS publishes data for one or more components.

Reproductive Effects Data
No data available.

Tumorigenic Data
No data available.

RTECS Tumorigenic
The components of this material have been reviewed, and RTECS publishes data for one or more components.

Specific Target Organ Toxicity - Single Exposure
simple asphyxiant

Specific Target Organ Toxicity - Repeated Exposure
No data available.

Aspiration Hazard
Not applicable.

Medical Conditions Aggravated by Exposure
None known.

Additional Data
Stimulants such as epinephrine may induce ventricular fibrillation.

* * *Section 12 - ECOLOGICAL INFORMATION* * *

Component Analysis - Aquatic Toxicity
No LOLI ecotoxicity data are available for this product's components.

Fish Toxicity
No data available.

Invertebrate Toxicity
No data available.

Algal Toxicity
No data available.

Persistence and Degradability
No data available.

Bioaccumulative Potential
No data available.

Mobility in Environmental Media
No data available.
** **Section 13 - DISPOSAL CONSIDERATIONS** **

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

**Component Waste Numbers**
The U.S. EPA has not published waste numbers for this product's components.

** **Section 14 - TRANSPORT INFORMATION** **

**US DOT Information**
Shipping Name: Methyl fluoride
UN/NA #: UN2454  Hazard Class: 2.1
Required Label(s): 2.1

**IMDG Information**
Shipping Name: Methyl fluoride
UN #: UN2454  Hazard Class: 2.1

** **Section 15 - REGULATORY INFORMATION** **

**Component Analysis**
**U.S. Federal Regulations**
None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

**SARA 311/312 Hazardous Categories**
Acute Health: Yes  Chronic Health: No  Fire: Yes  Pressure: Yes  Reactive: No

**U.S. State Regulations**
The following components appear on one or more of the following state hazardous substances lists:

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<td>Yes¹</td>
<td>No</td>
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Not regulated under California Proposition 65

**Component Analysis - Inventory**

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<tr>
<td>HALOCARBON 41</td>
<td>593-53-3</td>
<td>Yes</td>
<td>NSL</td>
<td>EIN</td>
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<td>Yes</td>
<td>No</td>
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<td>Yes</td>
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** **Section 16 - OTHER INFORMATION** **

**NFPA Ratings**
Health: 1  Fire: 4  Reactivity: 0
Hazard Scale: 0 = Minimal  1 = Slight  2 = Moderate  3 = Serious  4 = Severe
Safety Data Sheet

Material Name: HALOCARBON 41

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Other Information

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