Material Name: SULFUR HEXAFLUORIDE

Manufacturer Information
MATHESON TRI-GAS, INC.                   General Information: 1-800-416-2505
150 Allen Road, Suite 302                   Emergency #: 1-800-424-9300 (CHEMTREC)
Basking Ridge, NJ  07920                   Outside the US: 703-527-3887 (Call collect)

Chemical Family
inorganic, gas

Synonyms
MTG MSDS 81; SULFUR FLUORIDE; SULPHUR HEXAFLUORIDE; ELEGAS; UN 1080; F6S; RTECS:
WS4900000

Product Use
industrial

Usage Restrictions
none known

EMERGENCY OVERVIEW

Color: colorless

Physical Form: gas

Odor: odorless

Health Hazards: difficulty breathing

Physical Hazards: Containers may rupture or explode if exposed to heat.
**POTENTIAL HEALTH EFFECTS**

**Inhalation**

**Short Term:** nausea, vomiting, difficulty breathing, dizziness, fatigue, emotional disturbances, tingling sensation, suffocation, convulsions, coma

**Long Term:** no information on significant adverse effects

**Skin**

**Short Term:** frostbite

**Long Term:** no information is available

**Eye**

**Short Term:** frostbite

**Long Term:** no information is available

**Ingestion**

**Short Term:** no information on significant adverse effects

**Long Term:** no information is available

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

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2551-62-4</td>
<td>SULFUR HEXAFLUORIDE</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.

*** Section 5 - FIRE FIGHTING MEASURES ***

See Section 9 for Flammability Properties

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Flammable Properties

Negligible fire hazard. Containers may rupture or explode if exposed to heat.

Extinguishing Media

carbon dioxide, regular dry chemical

Large fires: Use regular foam or 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. 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, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

Thermal Decomposition Products

Combustion: fluorinated compounds, oxides of sulfur, sulfur compounds, hydrogen fluoride, hydrogen sulfide

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

Occupational spill/release

Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

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

Handling Procedures

Avoid breathing gas. Use only with adequate ventilation.

Storage Procedures

** * Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION * **

Component Analysis

SULFUR HEXAFLUORIDE (2551-62-4)

ACGIH: 1000 ppm TWA

OSHA (final): 1000 ppm TWA; 6000 mg/m³ TWA

OSHA (vacated): 1000 ppm TWA; 6000 mg/m³ TWA

NIOSH: 1000 ppm TWA; 6000 mg/m³ TWA

Component Biological Limit Values

SULFUR HEXAFLUORIDE (2551-62-4)

ACGIH: Fluorides in urine: 3 mg/g creatinine, prior to shift (B,Ns); Fluorides in urine: 10 mg/g creatinine, end of shift (B,Ns)

Ventilation

Provide local exhaust 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.

Protective Materials

leather

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.

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 ** **

<table>
<thead>
<tr>
<th>Physical State:</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color:</td>
<td>colorless</td>
</tr>
<tr>
<td>Odor:</td>
<td>odorless</td>
</tr>
<tr>
<td>Melting/Freezing Point:</td>
<td>-50.5 °C</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>not flammable</td>
</tr>
<tr>
<td>LEL:</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>16548 mmHg @ 20 °C</td>
</tr>
<tr>
<td>Vapor Density (air = 1):</td>
<td>5.1</td>
</tr>
<tr>
<td>Water Solubility:</td>
<td>slightly soluble</td>
</tr>
<tr>
<td>Log KOW:</td>
<td>see Section 12</td>
</tr>
<tr>
<td>Auto Ignition:</td>
<td>Not available</td>
</tr>
<tr>
<td>Sublimation Point:</td>
<td>-63.9 °C</td>
</tr>
<tr>
<td>Volatility by Volume:</td>
<td>100 %</td>
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<tr>
<td>Molecular Formula:</td>
<td>F6-S</td>
</tr>
</tbody>
</table>

Solvent Solubility

**Soluble:** alcohol, ether, potassium hydroxide solutions, transformer oil

**Slightly Soluble:** ethanol
** ** Section 10 - STABILITY AND REACTIVITY ** **

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

Materials to Avoid

combustible materials, metals, oxidizing materials

Combustion: fluorinated compounds, oxides of sulfur, sulfur compounds, hydrogen fluoride, hydrogen sulfide

Possibility of Hazardous Reactions

Will not polymerize.

** ** Section 11 - TOXICOLOGICAL INFORMATION ** **

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

Component Carcinogenicity

SULFUR HEXAFLUORIDE (2551-62-4)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Irritation

No human or animal test data available.

Medical Conditions Aggravated by Exposure

None known.

Tumorigenic

No data available.
Mutagenic

No data available.

Reproductive Effects

No data available.

** Section 12 - ECOLOGICAL INFORMATION **

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

** Section 13 - DISPOSAL CONSIDERATIONS **

Disposal Methods

Dispose in accordance with all applicable regulations.

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: Sulfur hexafluoride

UN/NA #: UN1080  Hazard Class: 2.2

Required Label(s): 2.2

TDG Information

Shipping Name: Sulfur hexafluoride

UN #: UN1080  Hazard Class: 2.2

Required Label(s): 2.2
**Section 15 - REGULATORY INFORMATION**

**U.S. Federal Regulations**

None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), 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**

Acute Health: Yes  Chronic Health: No  Fire: No  Pressure: Yes  Reactive: No

**U.S. State Regulations**

The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
<th>RI</th>
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<tbody>
<tr>
<td>SULFUR HEXAFLUORIDE</td>
<td>2551-62-4</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Not regulated under California Proposition 65

**Canada WHMIS**

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

**SULFUR HEXAFLUORIDE (2551-62-4)**

1 %

**Component Analysis - Inventory**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>US</th>
<th>CA</th>
<th>EU</th>
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<tbody>
<tr>
<td>SULFUR HEXAFLUORIDE</td>
<td>2551-62-4</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
**Section 16 - OTHER INFORMATION**

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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End of Sheet MAT22300