

**MATHESON**

ask. . .The Gas Professionals™

**Safety Data Sheet**

Material Name HEXAFLUOROETHANE

SDS ID: MAT10860

**\*\*\*Section 1 - IDENTIFICATION\*\*\*****Product Identifier:** HEXAFLUOROETHANE**Trade Names/Synonyms**

MTG MSDS 46; F 116; FREON 116; PERFLUOROETHANE; R 116; REFRIGERANT 116; UN 2193; FREON-116  
PERFLUOROETHANE-AIRCO (AIRCO); HEXAFLUOROETHANE-MATHESON (MATHESON GAS  
PRODUCTS); C2F6; HALOCARBON 116

**Chemical Family**

halogenated, aliphatic

**Recommended Use**

Industrial and Specialty Gas Applications

**Restrictions on Use**

None known.

**Manufacturer Information**

MATHESON TRI-GAS, INC.  
150 Allen Road, Suite 302  
Basking Ridge, NJ 07920

General Information: 1-800-416-2505  
Emergency #: 1-800-424-9300 (CHEMTREC)  
Outside the US: 703-527-3887 (Call collect)

**\*\*\*Section 2 - HAZARDS IDENTIFICATION\*\*\*****Classification in accordance with 29 CFR 1910.1200**

Gas under pressure, Liquefied gas

**GHS LABEL ELEMENTS****Symbol(s)****Signal Word**

WARNING

**Hazard Statement(s)**

Contains gas under pressure; may explode if heated.  
May displace oxygen and cause rapid suffocation.

**Precautionary Statement(s)****Prevention**

None needed according to classification criteria.

**Response**

None needed according to classification criteria.

**Storage**

Protect from sunlight. Store in a well-ventilated place.

# Safety Data Sheet

Material Name HEXAFLUOROETHANE

SDS ID: MAT10860

## Disposal

Dispose in accordance with all applicable regulations.

## Potential Environmental Effects

May cause frostbite upon sudden release of liquefied gas. May cause asphyxia.

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

CAS	Component	Percent
76-16-4	HEXAFLUOROETHANE	100

### \*\*\*Section 4 - FIRST AID MEASURES\*\*\*

#### Description of Necessary 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

Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

##### Ingestion

If swallowed, get medical attention.

#### Most Important Symptoms/Effects

##### Acute

frostbite, suffocation

##### Delayed

No information on significant adverse effects.

#### Indication of Immediate Medical Attention and Special Treatment

For inhalation, consider oxygen.

### \*\*\*Section 5 - FIRE FIGHTING MEASURES\*\*\*

#### Suitable Extinguishing Media

regular dry chemical, carbon dioxide  
Large fires: Use water spray, fog or regular foam.

#### Unsuitable Extinguishing Media

Do not direct water at source of leak or safety devices; icing may occur.

#### Specific Hazards Arising from the Chemical

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

#### Hazardous Combustion Products

**Combustion:** oxides of carbon, hydrofluoric acid, fluoride gases

# Safety Data Sheet

Material Name HEXAFLUOROETHANE

SDS ID: MAT10860

## Fire Fighting Measures

Move container from fire area if it can be done without risk. Damaged cylinders should be handled only by specialists. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with water spray until well after the fire is out. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Stay away from the ends of tanks. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. 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.

## Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

## \*\*\*Section 6 - ACCIDENTAL RELEASE MEASURES\*\*\*

### Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

### Methods and Materials for Containment and Cleaning Up

Do not touch or walk through spilled material. Stop leak if possible without personal risk. Do not direct water at spill or source of leak. Keep unnecessary people away, isolate hazard area and deny entry. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. If possible, turn leaking containers so that gas escapes rather than liquid. Prevent entry into waterways, sewers, basements, or confined areas. Allow substance to evaporate. Ventilate the area. Stay upwind and keep out of low areas.

## \*\*\*Section 7 - HANDLING AND STORAGE\*\*\*

### Precautions for Safe Handling

Observe good hygiene and safety practices when handling this product. Wear appropriate chemical resistant clothing. Wash thoroughly after handling.

### Conditions for Safe Storage, including any Incompatibilities

Store and handle in accordance with all current regulations and standards. Protect from sunlight. Store in a well-ventilated place. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

**Incompatibilities** reactive metals

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

### Component Exposure Limits

ACGIH, EU, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

### Component Biological Limit Values

There are no biological limit values for any of this product's components.

### Appropriate Engineering Controls

Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

### Individual Protection Measures, such as Personal Protective Equipment

#### Eyes/Face Protection

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.

#### Skin Protection

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

# Safety Data Sheet

Material Name HEXAFLUOROETHANE

SDS ID: MAT10860

## 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.

### 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\*\*\*

<b>Physical State:</b> Gas	<b>Appearance:</b> colorless liquefied gas
<b>Color:</b> colorless	<b>Physical Form:</b> liquefied gas
<b>Odor:</b> odorless	<b>Odor Threshold:</b> Not available
<b>Taste:</b> tasteless	<b>pH:</b> Not available
<b>Melting/Freezing Point:</b> -94 °C	<b>Boiling Point:</b> -79 °C
<b>Flash Point:</b> Not flammable	<b>Decomposition:</b> Not available
<b>Evaporation Rate:</b> Not available	<b>LEL:</b> Not available
<b>UEL:</b> Not available	<b>Vapor Pressure:</b> 23028 mmHg @ 21 °C
<b>Vapor Density (air = 1):</b> 4.823	<b>Density:</b> 5.734 g/L @ 24 °C
<b>Water Solubility:</b> insoluble	<b>Log KOW:</b> 2.0
<b>KOC:</b> 200 (estimate)	<b>Auto Ignition:</b> Not available
<b>Viscosity:</b> 0.0144 cP @25 °C	<b>Molecular Weight:</b> 138.01
<b>Molecular Formula:</b> F3-C-C-F3	

## Other Property Information

No additional information is available.

## Solvent Solubility

Slightly Soluble: alcohol

## \*\*\*Section 10 - STABILITY AND REACTIVITY\*\*\*

### Reactivity

No reactivity hazard is expected.

### Chemical Stability

Stable at normal temperatures and pressure.

### Possibility of Hazardous Reactions

Will not polymerize.

### Conditions to Avoid

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

### Incompatible Materials

reactive metals

### Hazardous Decomposition

Combustion: oxides of carbon, hydrofluoric acid, fluoride gases

# Safety Data Sheet

Material Name HEXAFLUOROETHANE

SDS ID: MAT10860

## \*\*\*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.

### Information on Likely Routes of Exposure

#### Inhalation

nausea, vomiting, dizziness, drowsiness, headache, loss of coordination, disorientation, tingling sensation, suffocation, convulsions, coma

#### Ingestion

frostbite

#### Skin Contact

blisters, frostbite

#### Eye Contact

frostbite, blurred vision

#### Immediate Effects

frostbite, suffocation

#### Delayed Effects

No information on significant adverse effects.

#### Medical Conditions Aggravated by Exposure

No data available.

#### Irritation/Corrosivity Data

No data available.

#### RTECS Irritation

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

#### Respiratory Sensitization

No data available.

#### Dermal Sensitization

No data available.

#### Carcinogenicity

#### Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

#### Mutagenic Data

No data available.

#### Reproductive Effects Data

No data available.

#### Tumorigenic Data

No data available.

#### Specific Target Organ Toxicity - Single Exposure

No data available.

#### Specific Target Organ Toxicity - Repeated Exposure

No data available.

# Safety Data Sheet

Material Name HEXAFLUOROETHANE

SDS ID: MAT10860

## Aspiration Hazard

Not applicable.

### \*\*\*Section 12 - ECOLOGICAL INFORMATION\*\*\*

#### Component Analysis - Aquatic Toxicity

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

#### Persistence and Degradability

Not expected to undergo hydrolysis in the environment.

#### Bioaccumulative Potential

Bioconcentration potential in aquatic organisms is low based on BCF value of 10.

#### Mobility

Expected to have moderate mobility in soil.

### \*\*\*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:** Hexafluoroethane

**UN/NA #:** UN2193 **Hazard Class:** 2.2

**Required Label(s):** 2.2

#### IMDG Information

**Shipping Name:** Hexafluoroethane

**UN #:** UN2193 **Hazard Class:** 2.2

**Required Label(s):** 2.2

### \*\*\*Section 15 - REGULATORY INFORMATION\*\*\*

#### Component Analysis

##### U.S. Federal Regulations

None of this products 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:** No **Pressure:** Yes **Reactive:** No

##### U.S. State Regulations

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

Component	CAS	CA	MA	MN	NJ	PA
HEXAFLUOROETHANE	76-16-4	No	No	No	Yes	No

Not regulated under California Proposition 65

##### Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
HEXAFLUOROETHANE	76-16-4	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

# Safety Data Sheet

Material Name HEXAFLUOROETHANE

SDS ID: MAT10860

## \*\*\*Section 16 - OTHER INFORMATION\*\*\*

**NFPA Ratings: Health: 3 Fire: 0 Reactivity: 0**

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

### 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

Matheson Tri-Gas, Inc. makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Matheson Tri-Gas, Inc. shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.

End of Sheet MAT10860