



## Safety Data Sheet

**Material Name: HEXAFLUOROETHANE**

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### \*\*\*Section 1 - PRODUCT AND COMPANY IDENTIFICATION\*\*\*

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#### Manufacturer Information

Electronic Fluorocarbons, LLC  
3266 Bergey Road  
Hatfield PA 19440

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

**Material Name: HEXAFLUOROETHANE**

#### Trade Names/Synonyms

F 116; FREON 116; PERFLUOROETHANE; R 116; REFRIGERANT 116; UN 2193;  
FREON-116 PERFLUOROETHANE-AIRCO (AIRCO); HEXAFLUOROETHANE;  
C2F6; HALOCARBON 116

#### Chemical Family

halogenated, aliphatic

#### Product Use

Industrial and Specialty Gas Applications.

#### Restrictions on Use

None known.

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### \*\*\*Section 2 - HAZARDS IDENTIFICATION\*\*\*

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**Classification in accordance with paragraph (d) of 29 CFR 1910.1200.**

Gases Under Pressure - Liquefied gas

#### GHS Label Elements

##### Symbol(s)



##### Signal Word

Warning

##### Hazard Statement(s)



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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.

**Disposal**

Dispose in accordance with all applicable regulations.

**Other Hazards**

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

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

CAS	Component Name	Percent
76-16-4	HEXAFLUOROETHANE	100

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**\*\*\*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**

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**



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**Acute**

frostbite, suffocation

**Delayed**

no information on significant adverse effects.

**Note to Physicians**

For inhalation, consider oxygen.

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

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**Extinguishing Media**

**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.

**Special Hazards Arising from the Chemical**

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

**Hazardous Combustion Products**

Oxides of carbon, hydrofluoric acid, fluoride gases

**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.

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

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**Personal Precautions, Protective Equipment and Emergency Procedures**

Wear personal protective clothing and equipment, see Section 8.

**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



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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.

**Environmental Precautions**

Avoid release to the environment.

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

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**Precautions for Safe Handling**

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

**Conditions for Safe Storage, Including any Incompatibilities**

Protect from sunlight.

Store in a well-ventilated place.

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

**Incompatible Materials**

reactive metals

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

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**Component Exposure Limits**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

**EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health Surveillance Measures**

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

**ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)**

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

**Engineering Controls**

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

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

**Eye/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.

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### 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 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.

### Glove Recommendations

Wear insulated gloves.

### \*\*\*Section 9 - PHYSICAL AND CHEMICAL PROPERTIES\*\*\*

Appearance	colorless liquefied gas	Physical State	gas
Odor	odorless	Color	colorless
Odor Threshold	Not available	pH	Not available
Melting Point	-94 °C (-137 °F)	Boiling Point	-79 °C (-110 °F)
Freezing point	Not available	Evaporation Rate	Not available
Boiling Point Range	Not available	Flammability (solid, gas)	Not available
Autoignition	Not available	Flash Point	(Not flammable)
Lower Explosive Limit	Not available	Decomposition	Not available
Upper Explosive Limit	Not available	Vapor Pressure	23028 mmHg at 21 °C
Vapor Density (air=1)	4.823	Specific Gravity (water=1)	Not available
Water Solubility	(Insoluble)	Partition coefficient: n-octanol/water	Not available
Viscosity	0.0144 cp	Solubility (Other)	Not available
Density	5.734 g/L at 24 °C	KOC	200 (Estimate)
Log KOW	2	Physical Form	liquefied gas
Taste	tasteless	Molecular Formula	F3-C-C-F3



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Molecular Weight	138.01		
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### Solvent Solubility

#### Slightly Soluble

alcohol

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

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#### 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 products

Oxides of carbon, hydrofluoric acid, fluoride gases

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### \*\*\*Section 11 - TOXICOLOGICAL INFORMATION\*\*\*

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#### Information on Likely Routes of Exposure

##### Inhalation

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

##### Skin Contact

blisters, frostbite

##### Eye Contact

frostbite, blurred vision

##### Ingestion

frostbite

#### 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



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**Immediate Effects**

frostbite, suffocation

**Delayed Effects**

no information on significant adverse effects.

**Irritation/Corrosivity Data**

No data available.

**Respiratory Sensitization**

No data available.

**Dermal Sensitization**

No data available.

**Component Carcinogenicity**

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

**Germ Cell Mutagenicity**

No data available.

**Tumorigenic Data**

No data available

**Reproductive Toxicity**

No data available.

**Specific Target Organ Toxicity - Single Exposure**

No data available.

**Specific Target Organ Toxicity - Repeated Exposure**

No data available.

**Aspiration hazard**

Not applicable.

**Medical Conditions Aggravated by Exposure**

No data available.

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

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**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 a BCF value of 10.

**Mobility**



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Expected to have moderate mobility in soil.

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### \*\*\*Section 13 - DISPOSAL CONSIDERATIONS\*\*\*

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#### 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

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### \*\*\*Section 14 - TRANSPORT INFORMATION\*\*\*

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#### US DOT Information:

Shipping Name: Hexafluoroethane

Hazard Class: 2.2

UN/NA #: UN2193

Required Label(s): 2.2

#### IMDG Information:

Shipping Name: Hexafluoroethane

Hazard Class: 2.2

UN#: UN2193

Required Label(s): 2.2

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

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#### 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 Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: Yes Chronic Health: No Fire: No Pressure: Yes Reactivity: 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 listed under California Proposition 65**

**Canadian WHMIS Ingredient Disclosure List (IDL)**





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The components of this product are either not listed on the IDL or are present below the threshold limit listed on the IDL.

**WHMIS Classification**

A.

**Component Analysis - Inventory**

HEXAFLUOROETHANE (76-16-4)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

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

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**NFPA Ratings**

Health: 3 Fire: 0 Reactivity: 0

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

**Summary of Changes**

Updated: 05/01/2015

**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; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; 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; LLV - Level Limit Value; 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; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; 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.



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### **Other Information**

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