



MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards and EC Standards

SECTION 1. PRODUCT IDENTIFICATION

PRODUCT NAME: Hexafluoroethane (Freon 116)

PRODUCT USE: Various

MANUFACTURER:

ADDRESS: SPECTRA GASES, INC.
3434 Route 22 West
Branchburg, NJ 08876, U.S.A.

PHONE: 908/252-9300

FAX: 908/252-0811

WEB SITE: www.spectra-gases.com

SPECTRA GASES EMERGENCY CONTACT: 800/932-0624 8:30 am - 7:00 pm (EST)

24 HOUR EMERGENCY CONTACT, CHEMTREC: 800/424-9300, 202/484-7616

SECTION 2. COMPOSITION and INFORMATION ON INGREDIENTS

EU LABELING/CLASSIFICATION: Hexafluoroethane does not meet the definition of any hazard class as defined by the European Community Council Directives. Additionally, an official classification for this substance has not been published in Commission Directives.

EU Risk Phrases: Not applicable.

Chemical Name	Chemical Synonyms	Chemical Formula	CAS #	EINECS #	% Composition	EU Classification For Components
Hexafluoroethane	Perfluoroethane ; Fluorocarbon 116; Freon 116; R 116; PFC 116	C ₂ F ₆	76-16-4	200-939-8	100%	HAZARD CLASSIFICATION: Not applicable RISK PHRASES: Not Applicable

SECTION 3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Product Description: Hexafluoroethane is a colorless, non-flammable, liquefied gas with a slight ethereal odor. **Health Hazards:** Hexafluoroethane is an asphyxiant and presents a significant health hazard by displacing the oxygen in the atmosphere. Frostbite can be caused by contact with rapidly expanding gases or the liquefied gas. **Flammability Hazards:** This gas is not flammable. However, if involved in a fire, Hexafluoroethane can decompose to produce toxic gases (e.g., hydrogen fluoride, fluorine and carbonyl fluorides). **Reactivity Hazards:** This gas is not reactive. **Environmental Hazards:** Release of this product to the environment is not expected to cause environmental harm. **Emergency Response Considerations:** Emergency responders must wear the proper personal protective equipment suitable for the situation to which they are responding. **WARNING** - If rescue personnel need to enter an area suspected of having a low level of Oxygen, they should be equipped with Self-Contained Breathing Apparatus (SCBA).

HMIS RATINGS: HEALTH HAZARD: = 0; FLAMMABILITY HAZARD: = 0; PHYSICAL HAZARD: = 0

ROUTES OF ENTRY, SYMPTOMS OF ACUTE EXPOSURE: WARNING - If rescue personnel need to enter an area of release of Hexafluoroethane, they should be equipped with Self-Contained Breathing Apparatus (SCBA). High concentration of this gas will create an oxygen-deficient atmosphere, creating the risk of asphyxiation. Acute overexposure to this gas may cause the following health effects:

EYE CONTACT: High-pressure gas may result in airborne objects.

INGESTION: Ingestion of this gas is not a likely route of industrial exposure.

INHALATION: High concentrations of this gas can cause an oxygen-deficient environment. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. The skin of a victim may have a blue color. Under some circumstances of over-exposure, death may occur, due to the displacement of oxygen. The following effects associated with various levels of oxygen are as follows:

CONCENTRATION

of OXYGEN

20.9% Oxygen:

15-19% Oxygen:

12-15% Oxygen:

10-12% Oxygen:

EXPOSURE SYMPTOM

Normal oxygen concentration in air.

Decreased ability to perform tasks. May impair coordination and may induce early symptoms in persons with heart, lung, or circulatory problems.

Breathing increases, especially in exertion. Pulse up. Impaired coordination, perception, and judgment.

Breathing further increases in rate and depth, poor coordination and judgment, lips slightly blue.

SECTION 3. HAZARD IDENTIFICATION (Continued)

INHALATION (continued):**CONCENTRATION****of OXYGEN**

8-10% Oxygen:

6-8% Oxygen:

4-6% Oxygen:

EXPOSURE SYMPTOM (continued)

Mental failure, fainting, unconsciousness, ashen face, blueness of lips, nausea (upset stomach), and vomiting.

8 minutes, may be fatal in 50-100% of cases; 6 minutes, may be fatal in 25 to 50% of cases; 4-5 minutes, recovery with treatment.

Coma in 40 seconds, followed by convulsion, breathing failure, death.

WARNING: Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

Inhalation of very high concentrations can cause the heart to beat irregularly (arrhythmia) or to stop, which can be fatal.

SKIN CONTACT: Contact with liquid or rapidly expanding gases (which are released under high pressure) may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain caused by frostbite can quickly subside, masking the injury. In addition, the sudden release of a pressurized gas (such as may occur in the event of a valve failure), presents a severe hazard of mechanical injury.

OTHER HEALTH EFFECTS: None**ROUTES OF ENTRY, SYMPTOMS OF CHRONIC EXPOSURE:****ROUTE OF ENTRY:** Inhalation.**TARGET ORGANS:** Heart and central nervous system.**SYMPTOMS:** Chronic exposure to oxygen-deficient atmospheres (below 18% oxygen in air) may affect the heart and nervous system.**MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:** None are anticipated.**CARCINOGENICITY:** is not listed as a carcinogen or as a potential carcinogen on EPA, NIOSH, GERMAN MAK, ACGIH, OSHA, NTP, IARC, or CAL/OSHA Carcinogenicity lists.

SECTION 4. FIRST AID MEASURES

EYE CONTACT: If mechanical injury occurs, cover eye with bandage and seek appropriate medical attention.**INGESTION:** Ingestion is an unlikely route of exposure for this gas.**INHALATION:** Remove victim(s) to fresh air, as quickly as possible. Trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.**SKIN CONTACT:** In case of frostbite, place the frostbitten part in warm water. DO NOT USE HOT WATER. If warm water is not available, or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area in the armpit. Encourage victim to gently exercise the affected part while being warmed. Seek immediate medical attention.**NOTES TO PHYSICIANS:** Administer oxygen, if necessary, and treat symptoms.

SECTION 5. FIRE FIGHTING MEASURES

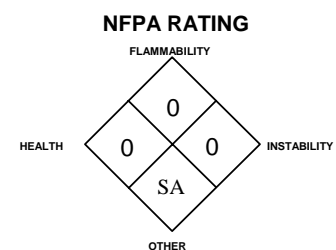
FLASH POINT: Not Applicable**AUTOIGNITION:** Not Applicable**FLAMMABLE RANGE:** Not Applicable**NFPA RATINGS:**

HEALTH: = 0

FLAMMABILITY: = 0

INSTABILITY: = 0

SPECIAL: Simple Asphyxiant

EXTINGUISHING MEDIA: This is a non-flammable, inert gas; use fire-extinguishing media appropriate for the surrounding materials.**SPECIAL FIRE-FIGHTING PROCEDURES:** Non-flammable, inert gas. Use extinguishing media appropriate for surrounding fire.**UNUSUAL FIRE AND EXPLOSION HAZARDS:** This gas does not burn; however, containers, when involved in fire, may rupture or burst in the heat of the fire. Most cylinders have a pressure release device, which will vent contents if the cylinder is exposed to high temperatures. When involved in a fire, this material may decompose and produce toxic gases (e.g., hydrogen fluoride, fluorine and carbonyl fluorides).**EXPLOSION SENSITIVITY TO MECHANICAL IMPACT:** Not sensitive.**EXPLOSION SENSITIVITY TO STATIC DISCHARGE:** Not sensitive.**HAZARDOUS COMBUSTION PRODUCTS:** Hydrogen fluoride, fluorine and carbonyl fluorides.

SECTION 6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: In the event of a release of this product, operator should close the gas source if possible to do so safely. Evacuate area in the event of a significant release. Only trained personnel, wearing Self-Contained Breathing Apparatus (SCBA) should re-enter a contaminated area if oxygen levels are below 19.5% or unknown. If leak is in user's gas handling equipment or system, close cylinder valve, and safely vent high pressure before attempting repairs. If leak is from the cylinder, cylinder valve or the valve pressure relief device (PRD), contact your supplier. The level of oxygen should be above 19.5% before personnel can be allowed in the area without SCBA. Detection systems should be available to monitor for level of oxygen.

SECTION 7. HANDLING AND STORAGE

STORAGE: Cylinders should be stored upright (with valve protection caps or plugs in place) and firmly secured to prevent falling or being knocked over. Cylinders should be stored in dry, well-ventilated areas. Protect from salt or other corrosive materials. Storage should be away from heavily traveled areas, walkways, elevators, platform edges or other objects or situations that could damage the cylinder wall. Do not store in a manner that will block emergency exits, fire extinguishers or other safety equipment. Do not allow storage temperature to exceed 125°F (52°C). Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time. Store empty cylinders away from full cylinders. Consideration should be taken to install leak detection and alarm equipment for storage areas. **NOTE:** Use only DOT or ASME code cylinders designed for compressed gas storage. Cylinders must not be recharged except by or with the consent of owner.

HANDLING: Releases of Hexafluoroethane can create an oxygen-deficient atmosphere. Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of Hexafluoroethane could occur without any significant warning symptoms, due to oxygen-deficiency. Wearing contact lenses is not recommended when handling this gas.

Cylinder valves should be inspected regularly for physical damage or corrosion (apparent by discoloration or rust). Care should be taken to inspect the following valve locations for corrosion: neck (where valve inserts into cylinder); bonnet nut (where handle attaches to valve body). Close valve after each use and when empty.

Do not drag, roll, slide or drop cylinder. Use a suitable hand truck designed for cylinder movement. Never attempt to lift a cylinder by its cap. Secure cylinders at all times while in use. Use a pressure regulator to safely discharge product from cylinder. Use a check valve to prevent reverse flow into cylinder. Once cylinder has been connected to properly purged process, open cylinder valve slowly and carefully. If user experiences any difficulty operating cylinder valve, discontinue use and contact supplier. Never insert an object (e.g., wrench, screwdriver, etc.) into valve cap openings; doing so may damage valve, causing a leak to occur. Use an adjustable strap-wrench to remove over-tight or rusted caps.

Do not heat cylinders by any means to increase the discharge rate of product from the cylinder. Never apply flame or localized heat directly to any part of the cylinder. Cylinders should not be artificially cooled as certain types of steel undergo property changes when cryogenically cooled, thus making the cylinder unstable.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Relieve pressure before attempting repairs.

SPECIAL PRECAUTIONS: Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of this gas could occur without any significant warning symptoms. All work operations should be monitored in such a way that emergency personnel can be immediately contacted in the event of a release. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, Inc. (telephone 703-412-0900) pamphlet CGA P-1, *Safe Handling of Compressed Gases in Containers*. Local regulations may require specific equipment for storage and use.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Forced ventilation systems for the general work area should be provided. If appropriate, install automatic monitoring equipment to detect the level of oxygen.

EXPOSURE LIMITS:

Chemical Name	CAS #	OSHA PELs ppm	ACGIH TLVs ppm	NIOSH RELs ppm	NIOSH IDLH ppm	DFG MAKs ppm	AIHA WEELs ppm
Hexafluoroethane	76-16-4	NE	NE	NE	NE	NE	NE

NE = Not Established

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EC member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection). Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if oxygen level is below 19.5%, or during emergency response to a release of this product. If respiratory protection is required, follow the requirements of the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent U.S. State standards, standards of Canada, the European Standard EN149, and EU member states.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued)

EYE PROTECTION: Use approved safety goggles or safety glasses, when cylinders are not closed and capped. Be aware that particles or objects propelled by high pressure gas can fly significant distances. Eyewear should be as described in OSHA 29 CFR 1910.133 or by the European Standard EN166.

SKIN PROTECTION: Work (such as leather) gloves are recommended when handling cylinders of this gas. Wear gloves appropriate to the specific operation for which Hexafluoroethane is used. Use triple gloves for spill response. If necessary, refer to U.S. OSHA 29 CFR 1910.138, and the European Standard DIN EN 374, or appropriate Standards of Canada.

OTHER PROTECTIVE EQUIPMENT: Use body protection appropriate for task. Safety shoes are recommended when handling cylinders. Transfer of large quantities under pressure may require use of chemically impervious clothing. Information on general protective measures can be found in U.S. OSHA 29 CFR 1910.136.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

MOLECULAR WEIGHT: 138.02

LIQUID DENSITY @ 1.013 bar & -78.2°C: 1608 kg/m³

BOILING POINT @ 1 atm: -78.2°C (-108.8°F)

FREEZING/MELTING POINT @ 1 atm: 100.6°C (213°F)

SPECIFIC VOLUME: 0.119 m³/kg

SPECIFIC VOLUME @ 21.1°C: 0.175 kg/m³

CRITICAL PRESSURE: 29.8 bar

COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

ODOR THRESHOLD: Not determined.

APPEARANCE, ODOR AND STATE: Colorless gas with slight, ethereal odor.

WARNING PROPERTIES FOR THIS GAS: There are no warning properties in the event of a release. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

GAS DENSITY @ 15°C: 5.84 kg/m³

VAPOR DENSITY (air = 1): 4.76

VAPOR PRESSURE @ 21°C: 30.3 mm Hg

SPECIFIC GRAVITY @ 21°C (air = 1): 4.773

SOLUBILITY IN WATER: Insoluble

CRITICAL TEMPERATURE: 19.7°C (67.46°F)

VISCOSITY @ 0°C: 0.0001364 Poise

SECTION 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under conditions of normal pressure and temperature.

CONDITIONS TO AVOID: Cylinders should not be exposed to temperatures in excess of 125°F (52°C).

MATERIALS WITH WHICH GAS IS INCOMPATIBLE: Alkaline materials and oxidizing compounds. Hexafluoroethane can be reactive with magnesium and aluminum at high temperatures.

REACTIVITY:

A) HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen fluoride, fluorine and carbonyl fluoride.

B) HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following are toxicity data currently available for Hexafluoroethane.

LC (Inhalation-Rat) > 20 pph/2 hours

TCLo (Inhalation-Rat) 20 pph/23 hours/37 weeks-intermittent: Blood: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases

IRRITANCY OF PRODUCT: May be slightly irritating to respiratory system.

SENSITIZATION OF PRODUCT: Hexafluoroethane is not known to be a human skin or respiratory sensitizer. Hexafluoroethane may sensitize the heart to epinephrine in the presence of other stimulants and may cause ventricular fibrillation.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of Hexafluoroethane on the human reproductive system.

Mutagenicity: Hexafluoroethane has not been found to cause mutagenic effects in humans.

Embryotoxicity: Hexafluoroethane has not been found to cause embryotoxic effects in humans.

Teratogenicity: Hexafluoroethane has not been found to cause teratogenic effects in humans.

Reproductive Toxicity: Hexafluoroethane has not been found to cause adverse reproductive effects in humans.

*A **mutagen** is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An **embryotoxin** is a chemical that causes damage to a developing embryo (i.e., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A **teratogen** is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A **reproductive toxin** is any substance that interferes in any way with the reproductive process.*

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) have not been determined for Hexafluoroethane.

SECTION 12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The gas will be dissipated rapidly in well-ventilated areas.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Any adverse effect on plants would be related to oxygen-deficient environments or frost from rapidly expanding gases.

EFFECT OF CHEMICAL ON AQUATIC LIFE: There is currently no evidence of adverse effects from exposure to Hexafluoroethane on aquatic life.

MOBILITY: Hexafluoroethane is inert and does not present a hazard of mobility.

PERSISTENCE AND BIODEGRADABILITY: Persistence: Hexafluoroethane can persist in the environment for a very long period of time. The atmospheric lifetime is 10,000 years. The GWP over 20 years is 6200. The GWP over 100 years is 9200. Biodegradation: Hexafluoroethane does not biodegrade.

POTENTIAL TO BIOACCUMULATE: Hexafluoroethane will not bioaccumulate.

OZONE-DEPLETION POTENTIAL: Hexafluoroethane is not a Class I or Class II ozone depleting chemical (40 CFR Part 82).

SECTION 13. DISPOSAL CONSIDERATIONS

UNUSED PRODUCT / EMPTY CONTAINER: Do not dispose of unused product. Return used product in cylinders to: Spectra Gases, Inc., 80 Industrial Drive, Alpha, NJ 08865 or Spectra Gases, Inc., 1261 Activity Drive, Vista, CA 92083.

DISPOSAL INFORMATION: Residual product may be safely released in a well-ventilated area. This shall be done in accordance with U.S. Federal, State and local regulations, regulations of the provinces of Canada or EU member states.

SECTION 14. TRANSPORT INFORMATION

U.S. SHIPPING INFORMATION:

U.S. DOT PROPER SHIPPING NAME: Hexafluoroethane or Refrigerant gas R 116

HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)

UN IDENTIFICATION NUMBER: UN 2193

U.S. DOT SHIPPING LABEL(S) REQUIRED: Class 2.2 (Non-Flammable Gas)

PLACARD (When required): Not Applicable

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position in a well-ventilated truck (never transport in passenger compartment of a vehicle). Ensure cylinder valve is properly closed, valve outlet cap has been reinstalled, and valve protection cap is secured before shipping cylinder.

CAUTION: Compressed gas cylinders shall not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with the owner's written consent is a violation of Federal law (49 CFR 173.301).

NAERG (NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK) #: 126

CANADIAN SHIPPING INFORMATION:

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This gas is classified as Dangerous Goods, per regulations of Transport Canada. The use of the above U.S. DOT information from the U.S. 49 CFR regulations is allowed for shipments that originate in the U.S. For shipments via ground vehicle or rail that originate in Canada, the following information is applicable.

ROPER SHIPPING NAME: Hexafluoroethane compressed or Refrigerant gas RC 116, compressed

HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)

UN IDENTIFICATION NUMBER: UN 2193

PACKING GROUP: Not Applicable

HAZARD SHIPPING LABEL(S) REQUIRED: Class 2.2 (Non-Flammable Gas)

SPECIAL PROVISIONS: None

EXPLOSIVE LIMIT & LIMITED QUANTITY INDEX: 0.125

ERAP INDEX: None

PASSENGER CARRYING SHIP INDEX: None

PASSENGER CARRYING ROAD OR RAIL VEHICLE INDEX: 75

SECTION 14. TRANSPORT INFORMATION (Continued)
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INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA):

IATA DESIGNATION: This gas is classified as dangerous goods, per the International Air Transport Association.

UN IDENTIFICATION NUMBER: UN 2193

PROPER SHIPPING NAME/DESCRIPTION: Hexafluoroethane *or*
Refrigerant gas RC 116

HAZARD CLASS or DIVISION: 2.2 (Non-Flammable Gas)

HAZARD LABEL(S) REQUIRED: Class 2.2 (Non-Flammable Gas)

PACKING GROUP: None

PASSENGER and CARGO AIRCRAFT PACKING INSTRUCTION: 200

PASSENGER and CARGO AIRCRAFT MAXIMUM NET QUANTITY PER PKG: 75 kg

PASSENGER and CARGO AIRCRAFT LIMITED QUANTITY PACKING INSTRUCTION: None

PASSENGER and CARGO AIRCRAFT LIMITED QUANTITY MAXIMUM NET QUANTITY PER PKG: None

CARGO AIRCRAFT ONLY PACKING INSTRUCTION: 200

CARGO AIRCRAFT ONLY MAXIMUM NET QUANTITY PER PKG: 150 kg

SPECIAL PROVISIONS: None

ERG CODE: 2L

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO):

IMO DESIGNATION: This gas is classified as dangerous goods, per the International Maritime Organization.

UN No.: 2193

PROPER SHIPPING NAME: Hexafluoroethane *or* Refrigerant gas RC 119

HAZARD CLASS NUMBER: 2.2

PACKING GROUP: None

SPECIAL PROVISIONS: None

LIMITED QUANTITIES: 120 mL

PACKING INSTRUCTIONS: P200

EmS: F-C, S-V

STOWAGE CATEGORY: Category A

MARINE POLLUTANT: This gas is not designated by the IMO to be a Marine Pollutant.

EUROPEAN SHIPPING INFORMATION:**EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS**

BY ROAD (ADR): This gas is classified by the Economic Commission for Europe to be dangerous goods. Additional information is as follows:

UN NO.: 2193

NAME and DESCRIPTON: Hexafluoroethane *or* Refrigerant gas RC 116

CLASS: 2

CLASSIFICATION CODE: 2A

PACKING GROUP: Not Applicable

LABELS: 2.2

SPECIAL PROVISIONS: None

LIMITED QUANTITIES: LQ1

PACKING INSTRUCTIONS: P200

MIXED PACKING PROVISIONS: MP9

HAZARD IDENTIFICATION No.: 20

SECTION 15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:**EPA - ENVIRONMENTAL PROTECTION AGENCY:**

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1990
(40 CFR Parts 117 and 302)

Reportable Quantity (RQ): Not Applicable

SARA TITLE III: Superfund Amendment and Reauthorization Act

SECTIONS 302/304: Emergency Planning and Notification (40 CFR Part 355)

Extremely Hazardous Substances: Hexafluoroethane is not listed.

Threshold Planning Quantity (TPQ): Not Applicable

Reportable Quantity (RQ): Not Applicable

SECTION 15. REGULATORY INFORMATION (Continued)**U.S. FEDERAL REGULATIONS (continued):****EPA - ENVIRONMENTAL PROTECTION AGENCY (continued):****SECTIONS 311/312:** Hazardous Chemical Reporting (40 CFR Part 370)

IMMEDIATE HEALTH: No PRESSURE: Yes

DELAYED HEALTH: No

REACTIVITY: No

FIRE: No

SECTION 313: Toxic Chemical Release Reporting (40 CFR 372)

Releases of Hexafluoroethane do not require reporting under Section 313.

CLEAN AIR ACT:**SECTION 112 (r):** Risk Management Programs for Chemical Accidental Release (40 CFR Part 68)

Threshold Planning Quantity (TPQ): Not Applicable

TSCA: Toxic Substances Control Act

Hexafluoroethane is listed on the TSCA Inventory.

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:**29 CFR Part 1910.119:** Process Safety Management of Highly Hazardous Chemicals.

Threshold Planning Quantity (TPQ): Not Applicable

U.S. STATE REGULATORY INFORMATION:**CALIFORNIA PROPOSITION 65:** Hexafluoroethane is not a listed substance which the State of California requires warning under this statute.**CANADIAN FEDERAL REGULATIONS:****CANADIAN DSL INVENTORY STATUS:** Hexafluoroethane is listed on the Canadian DSL Inventory (as Ethane, Hexafluoro-).**OTHER CANADIAN REGULATIONS:** Hexafluoroethane is categorized as a Controlled Product, Hazard Class A, as per the Controlled Product Regulations. Hexafluoroethane is not on the CEPA Priorities Substances Lists.**EUROPEAN ECONOMIC COMMUNITY REGULATIONS:****EC LABELING AND CLASSIFICATION:** Hexafluoroethane does not meet the definition of any hazard class as defined by the European Community Council Directive 67/548/EEC. Additionally, an official classification for this substance has not been published in Commission Directives 93/72/EEC, 94/69 EC, or and 96/54/EC.**EC CLASSIFICATION:** Not applicable.**EC RISK PHRASES:** Not applicable.**EC SAFETY PHRASES:** Not applicable.**EUROPEAN COMMUNITY ANNEX II HAZARD SYMBOL:** Not applicable.**SECTION 16. OTHER INFORMATION**

Information contained in this Material Safety Data Sheet is provided to our customers so they may comply with 29 CFR 1910.1200, Hazard Communication Standard, the Canadian WHMIS Standard, and the requirements of the European Community Directives. The intent of this Material Safety Data Sheet is to provide end users of this product with the health and physical hazards associated with possible exposure to this product. All statements, technical data and recommendations are based on readily available texts and data that Spectra Gases, Inc., believes to be reliable and accurate. Spectra Gases, Inc., makes no warranties, guarantees or representations of any kind with respect to this product or this data. It is the responsibility of the user to obtain and use the most recent version of this MSDS.

For Definition of Terms used in Spectra MSDSs see Spectra Gases, Inc. website: www.spectra-gases.com. Or contact your Customer Service Representative.

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