

Issue Date: 04-Oct-2021

Revision Date: 24-Jun-2024

Version 2

1. IDENTIFICATION

Product identifier

Product Name Hexafluoroethane

Other means of identification

SDS # EF-016

Synonyms

F 116; Freon 116; Perfluoroethane; R 116; Refrigerant 116; UN 2193; Freon-116 Perfluoroethane-Airco (Airco); Hexafluoroethane; C2F6; Halocarbon 116.

UN/ID No

UN2193

Recommended use of the chemical and restrictions on use

Recommended Use Industrial and Specialty Gas Applications.

Details of the supplier of the safety data sheet

Supplier Address

EFC Gases & Advanced Materials
3266 Bergey Road
Hatfield, PA 19440
Email: efcsafety@efcgases.com

Emergency telephone number

Company Phone Number 215-443-9600
Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Colorless, liquefied gas

Physical state Gas

Odor Odorless

Classification

Gases under pressure

Liquefied gas

Signal Word

Warning

Hazard statements

Contains gas under pressure; may explode if heated



Precautionary Statements - Storage

Protect from sunlight. Store in a well-ventilated place

3. COMPOSITION/INFORMATION ON INGREDIENTS

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.

Chemical name	CAS No	Weight-%
Hexafluoroethane	76-16-4	100

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

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

Skin Contact 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.

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.

Ingestion If swallowed, get medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Frostbite, suffocation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician For inhalation, consider oxygen.

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 Oxides of carbon, hydrofluoric acid, fluoride gases.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. 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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Wear personal protective clothing and equipment, see Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-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. Environmental Precautions Avoid release to the environment.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on 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

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

Incompatible Materials Reactive metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

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 and Body Protection For the gas: protective clothing and gloves are not required, but recommended. For the liquid: Wear appropriate protective, cold insulating clothing and gloves.

Respiratory Protection Under conditions of frequent use or heavy exposure, respiratory protection may be needed.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Gas	Odor	Odorless
Appearance	Colorless, liquefied gas	Odor Threshold	Not determined
Color	Colorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	
Melting point / freezing point	-94°C / -137°F	
Initial boiling point and boiling range	-79°C / -110°F	
Flash point	No data available	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor Pressure	23028 mmHg	
Vapor Density	4.823	(Air=1)
Relative Density	Not determined	
Water Solubility	Insoluble	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Autoignition temperature	No data available	
Decomposition temperature	Not determined	
Kinematic viscosity	0.0144 cP	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization Will not polymerize.

Conditions to Avoid

Protect from physical damage and heat.

Incompatible materials

Reactive metals.

Hazardous decomposition products

Oxides of carbon, hydrofluoric acid, fluoride gases.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Avoid contact with eyes.
Skin Contact	Avoid contact with skin.
Inhalation	Do not inhale.
Ingestion	Do not ingest.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Hexafluoroethane 76-16-4	-	-	> 500000 ppm (Rat) 4 h

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Please see section 4 of this SDS for symptoms.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity	Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
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Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document Not determined.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Component Information

Not available

Persistence/Degradability

Not determined.

Bioaccumulation

There is no data for this product.

Mobility

Not determined

Other adverse effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No	UN2193
Proper Shipping Name	Hexafluoroethane
Transport hazard class(es)	2.2

IATA

UN number or ID number	UN2193
Proper Shipping Name	Hexafluoroethane
Transport hazard class(es)	2.2

IMDG

UN number or ID number	UN2193
Proper Shipping Name	Hexafluoroethane
Transport hazard class(es)	2.2

15. REGULATORY INFORMATION

International Inventories

Chemical name	TSCA	TSCA Inventory Status	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AICS
Hexafluoroethane	X	ACTIVE	X	X	X	X	X	X	X

Legend:

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*
- ENCS - Japan Existing and New Chemical Substances*
- IECSC - China Inventory of Existing Chemical Substances*
- KECL - Korean Existing and Evaluated Chemical Substances*
- PICCS - Philippines Inventory of Chemicals and Chemical Substances*
- AICS - Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Hexafluoroethane 76-16-4	X		

16. OTHER INFORMATION

<u>NFPA</u>	Health hazards	Flammability	Instability	Special hazards
	3	0	0	-
<u>HMIS</u>	Health hazards	Flammability	Physical hazards	Personal Protection
	-	-	-	Not determined

Issue Date: 04-Oct-2021
Revision Date: 24-Jun-2024
Revision Note: Regulatory review

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet