

**Freon™ 116 refrigerant**

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Freon™ 116 refrigerant
Tradename/Synonym	:	Perfluoroethane R-116 FC-116 PFC-116
Product Grade/Type	:	ASHRAE Refrigerant number designation: R-116
Product Use	:	Refrigerant, For professional users only.
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	The Chemours Company FC, LLC 1007 Market Street Wilmington, DE 19899 United States of America
Product Information	:	1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	:	1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category
Gases under pressure Liquefied gas

**Freon™ 116 refrigerant**

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941

Label content

Pictogram

:



Signal word

: Warning

Hazardous warnings

: Contains gas under pressure; may explode if heated.

Hazardous prevention
measures

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

Other hazards

Misuse or intentional inhalation abuse may lead to death without warning.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing., May cause cardiac arrhythmia.

Rapid evaporation of the liquid may cause frostbite.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Perfluoroethane (FC-116)	76-16-4	100 %

**Freon™ 116 refrigerant**

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941

SECTION 4. FIRST AID MEASURES

General advice	: Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	: If inhaled, remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Skin contact	: Wash off immediately with plenty of water for at least 15 minutes. Treat for frostbite if necessary by gently warming affected area. Get medical attention if irritation develops and persists.
Eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
Ingestion	: Is not considered a potential route of exposure.
Most important symptoms/effects, acute and delayed	: Anaesthetic effects Light-headedness irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness
Protection of first-aiders	: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: No applicable data available.



Freon™ 116 refrigerant

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941

- Specific hazards : Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
- Further information : Cool containers/tanks with water spray. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Evacuate personnel to safe areas.
- Environmental precautions : No applicable data available.
- Spill Cleanup : Evaporates.
- Accidental Release Measures : Ventilate area, especially low or enclosed places where heavy vapours might collect. Self-contained breathing apparatus (SCBA) is required if a large release occurs. Avoid open flames and high temperatures.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid breathing high concentrations of vapour. Avoid skin and eye contact with liquid or cold vapors. Use sufficient ventilation to keep employee exposure below recommended limits.
- Handling (Physical Aspects) : Vapours are heavier than air and may spread along floors. Contact with chlorine or other strong oxidizing agents should also be avoided.

**Freon™ 116 refrigerant**

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941

Dust explosion class	: Not applicable
Storage	: Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Do not drag, slide or roll cylinders. Store in a clean, dry place. Do not heat above 52° C (125° F). For further information see Section 10 of the safety data sheet. The product has an indefinite shelf life when stored properly.
Storage period	: > 10 yr
Storage temperature	: < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls	: Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.
Personal protective equipment	
Respiratory protection	: Under normal manufacturing conditions, no respiratory protection is required when using this product.
Hand protection	: Additional protection: Impervious gloves
Eye protection	: Wear safety glasses with side shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.
Protective measures	: Self-contained breathing apparatus (SCBA) is required if a large release occurs.
Exposure Guidelines	
Exposure Limit Values	
Perfluoroethane	
No applicable data available.	

**Freon™ 116 refrigerant**

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : gaseous
Form : Liquefied gas
Color : colourless

Odor : slight, ether-like

Odor threshold : No applicable data available.

pH : neutral

Melting point/range : No applicable data available.

Boiling point/boiling range : Boiling point
-78.1 °C (-108.6 °F)

Flash point : Method: Tag open cup - TOC
does not flash

Evaporation rate : No applicable data available.

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : Not applicable

Lower explosion limit : Not applicable

Vapor pressure : 30,341 hPa at 19.7 °C (67.5 °F)

Vapor density : 4.8 at 25°C (77°F) and 1013 hPa (Air=1.0)

Density : 1.605 g/cm³ at -78 °C (-108 °F)
(as liquid)

**Freon™ 116 refrigerant**

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941

Specific gravity (Relative density)	: No applicable data available.
Water solubility	: No applicable data available.
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Ignition temperature	: >870 °C
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.
% Volatile	: 100 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Decomposes on heating.
Chemical stability	: The product is chemically stable. Stable under recommended storage conditions.
Possibility of hazardous reactions	: Polymerization will not occur.
Conditions to avoid	: Avoid open flames and high temperatures.
Incompatible materials	: Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts
Hazardous decomposition products	: Decomposition products are hazardous., This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride.

**Freon™ 116 refrigerant**

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941

SECTION 11. TOXICOLOGICAL INFORMATION

Perfluoroethane (FC-116)

- Inhalation 4 h LC50 : > 500000 ppm , Rat
- Inhalation No Observed Adverse Effect Concentration : 200000 ppm , Dog
Cardiac sensitization
- Repeated dose toxicity : Inhalation
Rat
- Method: OECD Test Guideline 412
No toxicologically significant effects were found.
- Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.
- Teratogenicity : Animal testing showed no developmental toxicity.
- Further information : Cardiac sensitisation threshold limit : 1129943.5 mg/m3

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity



Freon™ 116 refrigerant

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941

Perfluoroethane (FC-116)

96 h LC50	:	Pimephales promelas (fathead minnow) 82.3 mg/l
96 h EC50	:	Algae 37.5 mg/l
48 h EC50	:	Daphnia magna (Water flea) 47.4 mg/l

Environmental Fate

Perfluoroethane (FC-116)

Bioaccumulation	:	Bioaccumulation is unlikely.
Additional ecological information	:	no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product	:	Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.
----------------------------------	---	--

Contaminated packaging	:	Empty pressure vessels should be returned to the supplier.
------------------------	---	--

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	:	2193
	Proper shipping name	:	Hexafluoroethane
	Class	:	2.2
	Labelling No.	:	2.2
IATA_C	UN number	:	2193
	Proper shipping name	:	Hexafluoroethane
	Class	:	2.2
	Labelling No.	:	2.2
IMDG	UN number	:	2193

**Freon™ 116 refrigerant**

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941

Proper shipping name : HEXAFLUOROETHANE
Class : 2.2
Labelling No. : 2.2

SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s) : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

NJ Right to Know Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Perfluoroethane

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Carbon monoxide

SECTION 16. OTHER INFORMATION

Chemours™ and the Chemours Logo are trademarks of The Chemours Company. Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.

Revision Date : 10/09/2015

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.

Significant change from previous version is denoted with a double bar.



FreonTM 116 refrigerant

Version 3.0

Revision Date 10/09/2015

Ref. 130000017941