

Issue Date: 15-Nov-2023

Revision Date: 25-Jun-2024

Version 2

1. IDENTIFICATION

Product identifier

Product Name Tetrafluoromethane (R14)

Other means of identification

SDS # EF-021**Synonyms** PFC-14, Halocarbon14, Perfluoromethane, Carbon tetrafluoride.**UN/ID No** UN1982

Recommended use of the chemical and restrictions on use

Recommended Use For industrial use.

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 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 PFC-14, Halocarbon14, Perfluoromethane, Carbon tetrafluoride.

Chemical name	CAS No	Weight-%
Tetrafluoromethane	75-73-0	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	Contact with liquid: 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 a large amount is swallowed, get medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Frostbite, difficulty breathing, suffocation, irregular heartbeat.

Indication of any immediate medical attention and special treatment needed

Notes to Physician For inhalation, consider oxygen.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon dioxide, regular dry chemical.

Large Fire Use regular foam or flood with fine water spray.

Unsuitable Extinguishing Media None known.

Specific Hazards Arising from the Chemical

Negligible fire hazard.

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

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

For Emergency Responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Avoid release to the environment. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Stop leak if you can do it without risk. Keep unnecessary people away, isolate hazard area and deny entry.

Methods for Clean-Up Do not enter confined spaces unless adequately ventilated. Damaged cylinders should be handled only by specialists.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store and handle in accordance with all current regulations and standards. Keep container tightly closed and in a well-ventilated place. Protect from physical damage. Protect from sunlight. Keep separated from incompatible substances.

Incompatible Materials Metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Tetrafluoromethane 75-73-0	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F

Appropriate engineering controls

Engineering Controls Provide local exhaust or process enclosure ventilation to maintain levels below the recommended exposure limit. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear splash resistant safety goggles with a faceshield. Refer to 29 CFR 1910.133 for eye and face protection regulations.

Skin and Body Protection Wear mechanical hazard protection gloves when handling cylinder. Suitable protective clothing. Refer to 29 CFR 1910.138 for appropriate skin and body protection.

Respiratory Protection Ensure adequate ventilation, especially in confined areas. Keep self-contained breathing apparatus readily available for emergency use. Self-contained breathing apparatus is recommended, where unknown exposure may be expected, e.g., during maintenance activities on installation systems. Refer to 29 CFR 1910.134 for respiratory protection requirements.

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 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	-187°C / -304.6°F	
Initial boiling point and boiling range	-128°C / 198.4°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	799 mmHg @ 21.1°C (69.98°F) 23331.35 kPa (25°C)	
Vapor Density	3.05	(Air=1)
Relative Density	1.89	
Water Solubility	0.014%	
Solubility in other solvents	Not determined	
Partition Coefficient	1.18	
Autoignition temperature	No data available	
Decomposition temperature	Not determined	
Kinematic viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

Other information

Molecular weight 88.0

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

Metals.

Hazardous decomposition products

Halogenated compounds. Oxides of carbon.

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

Not determined

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.

Persistence/Degradability

Not determined.

Bioaccumulation

There is no data for this product.

Mobility

Chemical name	Partition coefficient
Tetrafluoromethane 75-73-0	1.18

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 UN1982
Proper Shipping Name Tetrafluoromethane
Transport hazard class(es) 2.2

IATA
UN number or ID number UN1982
Proper Shipping Name Tetrafluoromethane
Transport hazard class(es) 2.2

IMDG
UN number or ID number UN1982
Proper Shipping Name Tetrafluoromethane
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
Tetrafluoromethane	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/ELI NCS - 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 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)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Tetrafluoromethane		X		

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
Tetrafluoromethane 75-73-0	X		X

16. OTHER INFORMATION**NFPA**

Health hazards

Flammability

Instability

Special hazards

-

-

-

-

HMIS

Health hazards

Flammability

Physical hazards

Personal Protection

-

-

-

Not determined

Issue Date:

15-Nov-2023

Revision Date:

25-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