



Material Safety Data Sheet

1. Product and Company Identification

Product name : **Tetrafluoromethane**

Chemical formula : CF₄

Synonyms : Carbon tetrafluoride; Carbon fluoride (CF₄); Freon 14; Carbon fluoride; FC 14; Perfluoromethane; R 14; R 14 (Refrigerant); Methane, Tetrafluoro-; Tetrafluorocarbon; UN 1982

Company : Specialty Gases of America, Inc
6055 Brent Dr.
Toledo, OH 43611

Telephone : 419-729-7732

Emergency : 800-424-9300

2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Tetrafluoromethane	75-73-0	100%

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following:
Fluorides.

3. Hazards Identification

Emergency Overview

Containers may rupture or explode if exposed to heat.
May cause difficulty breathing.

Potential Health Effects

Inhalation : Nausea, vomiting, symptoms of drunkenness, disorientation, suffocation.
Eye contact : Frostbite.
Skin contact : Irritation.
Ingestion : No information on significant adverse effects.
Chronic Health Hazard : None known.

4. First Aid Measures

Eye contact : Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains. 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.

- Ingestion : If a large amount is swallowed, get immediate medical attention.
 Inhalation : If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.
 Note to physicians : For inhalation, consider oxygen.

5. Fire-Fighting Measures

- Suitable extinguishing media : Regular dry chemical, carbon dioxide.
 Large fires: Use regular foam or flood with fine water spray.
 Specific hazards : Negligible fire hazard.
 Fire fighting : 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 downward evacuation if material is leaking.

6. Accidental Release Measures

- Occupational spill/release : Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.
 Additional advice : None.

7. Handling and Storage

Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

Storage

Store in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

8. Exposure Controls / Personal Protection

Exposure limits

- ACGIH : 2.5 mg/m³ TWA (as F)
 OSHA (final) : 2.5 mg/m³ TWA as F
 OSHA (vacated) : 2.5 mg/m³ TWA

Component Biological Limit Values

- ACGIH : Fluorides in urine: 3 mg/g creatinine, prior to shift (B, Ns); Fluorides in urine: 10 mg/g creatinine, end of shift (B, Ns).

Engineering measures/Ventilation

Based on available information, additional ventilation is not required. Ensure compliance with applicable exposure limits.

Personal protective equipment

- Respiratory protection : The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
 Any powered, air-purifying respirator with a full facepiece and organic vapor and

acid gas cartridge(s).

Any chemical cartridge respirator with a full facepiece and organic vapor and acid gas cartridge(s).

For unknown concentrations or Immediately Dangerous to Life or Health – 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.

Hand protection	:	Wear insulated gloves.
Eye protection	:	For the gas: Eye protection not required, but recommended. For the liquid: 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 is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

9. Physical and Chemical Properties

Form	:	Gas.
Color	:	Colorless.
Odor	:	Odorless.
Molecular weight	:	88.01
Vapor pressure	:	799 mmHg @ -127°C
Vapor density	:	3.05 (air = 1)
Boiling point	:	-128°C
Melting point	:	-187°C
Water solubility	:	0.0015% @ 25°C
Specific gravity	:	1.89 @ -183°C (water = 1)

10. Stability and Reactivity

Stability	:	Stable under normal conditions.
Conditions to avoid	:	Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.
Materials to avoid	:	Metals.
Hazardous decomposition products	:	Thermal decomposition products: halogenated compounds.

11. Toxicological Information

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

Component Carcinogenicity

ACGIH : A4 – Not Classifiable as a Human Carcinogen.

12. Ecological Information

No LOLI ecotoxicity data are available for this product's components.

13. Disposal Considerations

Waste from residues : Dispose in accordance with all applicable regulations.
/ unused products
Contaminated : Return cylinder to supplier.
packaging

14. Transport Information

DOT (US only)

Proper shipping name : Tetrafluoromethane
Class : 2.2
UN/ID No. : UN1982
Labeling : Non-Flammable Gas

15. Regulatory Information

U.S. Federal Regulations

None of this product's components are listed under SARA Section 302/304 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312

Acute: Yes
Chronic: No
Fire: No
Reactive: No
Pressure: Yes

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	RI
TETRAFLUOROMETHANE (related to Fluorides)	75-73-0	No	No	Yes	Yes	No	Yes

Not regulated under California Proposition 65

16. Other Information

Prepared by : Specialty Gases of America, Inc.
For additional information, please visit our website at www.americangasgroup.com.