



# Material Safety Data Sheet

## 1. Product and Company Identification

Product name : **Trifluoromethane**

Chemical formula : CHF<sub>3</sub>

Synonyms : Carbon Trifluoride; Methyl trifluoride; Fluoryl; Freon 23; Freon F-23; Refrigerant 23; R23; Genetron 23; Propellant 23; UN 1984

Company : Med Tech Gases, Inc.  
20 Hall Street  
Medford, MA 02155

Telephone : 800-FINE-GAS

Emergency : 800-424-9300

## 2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Trifluoromethane	75-46-7	99+%

## 3. Hazards Identification

### Emergency Overview

Containers may rupture or explode if exposed to heat.  
May cause central nervous system depression.

### Potential Health Effects

Inhalation : Mild irritation, nausea, vomiting, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, loss of coordination, unconsciousness.

Eye contact : Frostbite, blurred vision.

Skin contact : Blisters, frostbite.

Ingestion : Ingestion of a gas is unlikely.

Chronic Health Hazard : No harm expected.

## 4. First Aid Measures

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

Ingestion : If a large amount is ingested, get 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.

Notes to physician : For inhalation, consider oxygen.

## 5. Fire-Fighting Measures

Suitable extinguishing media : Carbon dioxide, regular dry chemical.  
Large fires: Flood with fine water spray.  
Specific hazards : Negligible fire hazard. Containers may rupture or explode if exposed to heat.  
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 downwind 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 regulation: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

## 8. Exposure Controls / Personal Protection

### Exposure limits

ACGIH : 2.5 mg/m<sup>3</sup> TWA (as F)  
OSHA (final) : 2.5 mg/m<sup>3</sup> TWA F  
OSHA (vacated) : 2.5 mg/m<sup>3</sup> TWA

### Engineering measures/Ventilation

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

### Personal protective equipment

Respiratory protection : Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.  
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 is 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	:	70.01
Vapor pressure	:	33592 mmHg @ 21°C
Specific gravity	:	1.52 @ -100°C (liquid) (water = 1)
Boiling point	:	-84.4°C
Melting point	:	-160°C
Water solubility	:	0.1% @ 25°C
Solvent solubility	:	Soluble: alcohol, acetone, benzene, hydrocarbons, chlorinated solvents, ketones, esters, organic acids Insoluble: glycols, glycerol, phenols

## 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, oxides of carbon, hydrogen fluoride.

## 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.

### Target Organs

TRIFLUOROMETHANE : Central nervous system  
(75-46-7)

### Additional Data

Stimulants such as epinephrine may induce ventricular fibrillation.

## 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 : Trifluoromethane  
Class : 2.2  
UN/ID No. : UN1984  
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 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
TRIFLUOROMETHANE	75-46-7	No	No	Yes	Yes	No	Yes

Not regulated under California Proposition 65.