

1. IDENTIFICATION OF SUBSTANCE/ COMPANY INFORMATION

Product name: Trifluoromethane (Halocarbon R-23)	Concorde Specialty Gases Inc.
Chemical names: Fluoroform, Freon 23, R-23	Eaton Rd Eatontown, NJ 07724
Chemical formula: CF ₃ H	Tel: 732 544-9899 Fax: 732 544-9894

Product Use: For general analytical / synthetical chemical uses
In Case of Emergency: Chemtrec 1-800-949-7937

2. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical name: Trifluoromethane (Halocarbon R-23)
CAS #: 75-46-7 100

3. HAZARDS IDENTIFICATION

Physical state: Gas
Appearance: Colorless gas without odor
Physical State: R-23 is a gas at normal temperature
Emergency overview: Warning! CONTENTS UNDER PRESSURE. Do not puncture or incinerate container. Contact with rapidly expanding gases can cause frostbite.
Route of Entry: Inhalation
Potential acute health effects:
Eyes: No known significant effects or critical hazards
Skin: No known significant effects or critical hazards
Inhalation: Acts as a simple asphyxiant
Ingestion: Ingestion is not a normal route of exposure for gases
Chemical Formula: CF₃H
Melting Point: -155.15°C (-247.27°F)
Boiling Point: -82.2°C (-247.27°F)
Flashpoint: None
Autoignition Temperature: above 750°C (1382°F)
Vapor Pressure: 4.193 MPA at 20°C (68°F)
Medical Conditions: Acute or chronic respiratory conditions may be aggravated by overexposure to this gas.
Solubility in Water: -0.113% by weight at 68°C

4. FIRST AID MEASURES

No action shall be taken involving any personal risk or without suitable training. If fumes are still suspected to be present, the rescuer should wear an appropriate mask or a self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.

Get medical attention if irritation occurs.

Skin contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Frostbite: Try to warm up the frozen tissues and seek medical attention.

Inhalation: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

5. FIRE-FIGHTING MEASURES

Flammability of the product

Fire fighting media and instructions

Special protective equipment for fire fighters: Non-flammable.

Use an extinguishing agent suitable for surrounding fires.

If involved in fire, shut off flow immediately if it can be done without risk. Apply water from a safe distance to cool container and protect surrounding area.

No specific hazard: Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

7. HANDLING AND STORAGE

Do not puncture or incinerate container. High-pressure gas. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over.

Cylinder temperatures should not exceed 52 °C (125 °F).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal protection

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93

Hands: Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protection in case of a large spill: A self-contained breathing apparatus should be used to avoid inhalation of the product.

Consult local authorities for acceptable exposure limits. Trifluoromethane (Halocarbon R-23)

9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight 70.02g/mole	Gas Density (lb/ft ³) 0.179	Boiling Point -83.99°C (-119.2°F)	Specific Volume (ft ³ /lb): 5.58659	Vapor Pressure 635 psig
Critical Temp. 25.7°C (78.3°F)	Density, liquid 2.417 (Air = 1)	Freezing Point -159.99°C (-256°F)	Solubility in H ₂ O v/v@ 20°C (68°F): 0.0594	Evaporation Rate (nBuAc=1): N/A

10. STABILITY AND REACTIVITY

The product is stable. Hazardous decomposition: These products are halogenated compounds, hydrogen fluoride products.

11. TOXICOLOGICAL INFORMATION

Ingredient name Test Result Route Species Trifluoromethane (Halocarbon Not available. Other toxic effects on: No specific information is available in our database regarding the other toxic effects of humans this material for humans. Specific effects: Carcinogenic effects: No known significant effects or critical hazards. Mutagenic effects: No known significant effects or critical hazards. Reproduction toxicity: No known significant effects or critical

hazards.

12. ECOLOGICAL INFORMATION

Products of degradation: These products are carbon oxides (CO, CO₂) and water, halogenated compounds. Toxicity of the products of: The products of degradation are more toxic than the product itself. Biodegradation Environmental fate: Not available. Environmental hazards: No known significant effects or critical hazards.

General No known ecological damage caused by this product.

13. DISPOSAL CONSIDERATIONS

General To atmosphere in a well-ventilated place. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required.

14. TRANSPORT INFORMATION

Liquefied, non-flammable gas, belongs to 2.2 IMO class, UN Number 1984 EmS No 2-09, MFAG table No 350

15. OTHER INFORMATION

To the best of our knowledge, the information contained herein is accurate.

Revised: March, 2009

Concorde Specialty Gases	Eaton Road	Eatontown, NJ 07724
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