



Material Safety Data Sheet Tetrafluoromethane CF4

CF4

1. Chemical Product and Company Identification:

Company: Concorde Specialty Gases Inc.
36 Eaton Rd.
Eatontown, N.J. 07724 USA

Product Name: CF4 – Tetrafluoromethane CF4
Carbon Tetrafluoride
Halocarbon 14

Product Use: For general analytical/synthetic chemical uses.

2. Composition/ Information on Ingredients:

Ingredient Name: Tetrafluoromethane

There are no specific exposure limits for Tetrafluoromethane. Tetrafluoromethane is an asphyxiant. Oxygen levels should be maintained above 19.5%.

3. Hazards Identification:

Emergency Overview: Tetrafluoromethane is an odorless, colorless, nonflammable, liquefied gas. Tetrafluoromethane can cause central nervous system depression after exposure by inhalation. Symptoms of such overexposure can include drowsiness, fatigue and weakness. Inhalation at high concentrations may cause asphyxiation by displacement of oxygen, light headedness, shortness of breath and dizziness in extreme cases, irregular heartbeats, cardiac arrest and death. Contact with this gas may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow and may even have a blue color. The pain after such contact with liquid can quickly subside. This gas is not flammable or reactive in normal response situations. However, if involved in a fire, Tetrafluoromethane can decompose to produce toxic gases. (e.g., hydrogen, fluoride, phosgene).

The effects associated with different levels of oxygen are as follows:

<u>Concentration of Oxygen</u>	<u>Symptoms of Exposure</u>
12-16%	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14%	Emotional upset, abnormal fatigue, disturbed respiration.
6-10%	Nausea and vomiting, collapse or loss of consciousness.
Below 6%	Convulsive movements, possible respiratory collapse and death.

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Email: concorde@sfgas.com www.concordegas.com

4. First aid measures

Rescuers should not attempt to retrieve victims of exposure to Tetrafluoromethane without adequate personal protective equipment. Self contained breathing and personal protective equipment should be used. Remove victim(s) to fresh air as quickly as possible. Trained personnel should administer supplemental oxygen and cardiopulmonary resuscitation, if necessary. In cases of frostbite-like injury, wash with soap and warm water. Contact a physician if irritation or pain persists. Seek immediate medical help.

5. Fire fighting measures

Flammable Properties: Flash Point: N/A Flash Point Method: N/A
Autoignition Temp: N/A Upper Flame Limit (volume % in air): N/A
Lower Flame Limit (volume % in air): N/A Flame Propagation Rate (Solids): N/A OSHA
Flammability Class: Non-combustible gas Extinguishing Media: If involved in a fire, use dry chemical or carbon dioxide for small fires or water spray, fog or regular foam for large fires.
Unusual Fire and Explosion Hazards: Cylinders may explode in heat of fire. Fire may produce irritating or poisonous gases.
Special Fire Fighting Precautions/Instructions: Wear self-contained breathing apparatus. Cool cylinders, exposed to heat of fire, by flooding with water. Apply water from as far a distance as possible.

6. Accidental release measures

IN CASE OF SPILL OR OTHER RELEASE

Always wear recommended personal protective equipment. Evacuate unprotected personnel. Stay upwind. Protected personnel (see section 8) may shut off lead if without risk. Product will destroy itself. Spills and releases may have to be reported to Federal and/or local authorities. See section 15 regarding reporting requirements.

7. Handling and Storage

Normal Handling: Always wear recommended personal protective equipment. Observe precautions on cylinder label. Protect cylinders from physical damage.
Storage Recommendations: Protect cylinders from physical damage, heat and sunlight. Store in an area of low fire risk. For additional information, see Compressed Gas Association Pamphlet, "Safe Handling of Compressed Gases in Containers", 7th Edition, 1984.

8. Exposure controls and personal protection

Engineering Controls: General mechanical ventilation
Personal Protective Equipment Skin Protection: Rubber gloves and coveralls.
Eye Protection: Safety glasses.
Respiratory Protection: Self-contained breathing apparatus or air supplied respirator if needed. Note that an accidental release of CF₄ may reduce the oxygen content of the local atmosphere below 16% (see section 3). Additional Recommendations: None.

Exposure Guidelines

No OSHA PEL or ACGIH TLV has been established for this substance.
Limit established by Workplace Environmental Exposures Level (AIHA)
Biological Exposure Index (ACGIH)
Other Exposure Limits for Potential Decomposition Products: None

9. Physical and chemical properties:

Appearance: Colorless gas
Physical State: Gas
Molecular Weight: 88.0
Chemical Formula: CF₄
Odor: Odorless
Specific Gravity (Air =1): 3.038

10. Stability and reactivity

Normal Stable (Conditions to Avoid): Stable under normal conditions.
Incompatibilities: May react violently with chemically active metals such Alkali and alkaline earth metals like sodium, potassium and barium, powdered magnesium, powdered aluminum and organometallics.
HAZARDOUS DECOMPOSITION PRODUCTS: Tetrafluoromethane can undergo thermal decomposition forming to hydrochloric and hydrofluoric acids, carbonyl fluoride and phosgene.
Hazardous Polymerization: Will not occur.
Solubility in Water (weight %): Slight
Boiling Point: (At 1 atm): -198.5 ° F (-128.1 ° C)
Vapor Pressure: Not applicable (gas)
Evaporation Rate: Not applicable
Flashpoints: Not applicable
PH: Not applicable
Melting Point -298.5 ° F (-183.6 ° C)
Vapor Density at 70°F (Air = 1): 3.04
% Volatile: Not applicable (gas)

11. Toxicological Information

INHALATION: Tetrafluoromethane is narcotic at high concentrations and may cause myocardial sensitization and ventricular fibrillation.
SKIN AND EYE: May cause minor irritation.
OTHER: No OSHA PEL or ACGIH TLV has been established for this substance.

12. Ecological Information

Not Applicable. Tetrafluoromethane does not contain any Class I or Class II ozone depleting chemicals.

13. Disposable Considerations

Do not attempt to dispose of residual waste or unused quantities. Return the shipping container

properly labeled with any valve outlet plugs or caps secured and valve protection cap in place to the authorized distributor for proper disposal. For Hazardous Materials Emergency (Spill, Leak, Fire, Exposure or accident). Call Chemtrec at (800) 424-9300. Outside the U.S. call (703) 527-3887

14. Transportation Information

DOT/IMO SHIPPING NAME: Tetrafluoromethane, Compressed or Refrigerant Gas R14
US DOT Hazard Class: Class 2.2
US DOT ID Number: UN1982
SHIPPING LABEL(s): NONFLAMMABLE GAS
C.A.S Registry No.: 75-73-0
For additional information on shipping regulations regarding this material, contact Concorde Specialty Gases, Inc.

15. Regulations

Toxic Substances Control Act (TSCA)
TSCA Inventory Status: Material is listed on the TSCA inventory.
Other TSCA Issues: None
Sara Title III/CERCLA
“Reportable Quantities” (Rqs) and/or “Threshold Planning Quantities” (TPQ’s) exist for the following ingredients:
Ingredient Name Sara, CERCLA RZ (IB) Sara, EHA TPQ (IB)
No ingredients listed in this action.
Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center: 1-800-424-8802 and to your local Emergency Planning Committee.
Section 311 Hazard Class: Immediate. Pressure.
SARA 313 Toxic Chemicals: The following ingredients are SARA 313 “Toxic Chemicals.”
CAS numbers and weight percents are found in Section 9 & 14.
Ingredient Name: “No ingredients listed in this section”
Additional Regulatory Information: None.
WHMIS Classification (Canada): Class A. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
Foreign Inventory Status: Canadian DSL (Domestic Substances List)
EINCES (European Inventory of Existing Commercial Chemical Substances)

16 Other information:

Although reasonable care has been taken in the preparation of this document, neither Concorde Specialty Gases, Inc. nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user.

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