



Material Safety Data Sheet

1. Product and Company Identification

Product name : **Carbonyl Fluoride**

Chemical formula : C-F₂-O

Synonyms : Carbonic Difluoride, Carbon Difluoride Oxide, Carbon Fluoride Oxide, Carbon Oxyfluoride, Carbonyl Difluoride, Fluorophosgene, Difluoroformaldehyde, Difluorooxomethane, Difluorophosgene, Fluoroformyl Fluoride

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
Carbonyl Fluoride	353-50-4	100%

3. Hazards Identification

Emergency Overview

Containers may rupture or explode if exposed to heat. May react on contact with water.
Harmful if inhaled, respiratory tract burns, skin burns, eye burns.

Potential Health Effects

Inhalation : Irritation (possibly severe), vomiting, chest pain, difficulty breathing, dizziness, bluish skin color, lung congestion.

Eye contact : Irritation (possibly severe), frostbite, blurred vision.

Skin contact : Irritation (possibly severe), blisters, frostbite.

Ingestion : Frostbite.

Chronic Health Hazard : Not applicable.

4. First Aid Measures

General advice : None.

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

Skin contact : Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing and shoes before reuse. Destroy contaminated shoes.

Ingestion : If a large amount is swallowed, 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.

5. Fire-Fighting Measures

- Suitable extinguishing media : Regular dry chemical, carbon dioxide, water, regular foam.
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 downwind evacuation if material is leaking.

6. Accidental Release Measures

- Personal precautions : None.
- Environmental precautions : None.
- Methods for cleaning up : 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. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).
- 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. Keep separated from incompatible substances.

8. Exposure Controls / Personal Protection

Exposure limits

- 2 ppm (5 mg/m³) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)
- 5 ppm (15 mg/m³) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
- 2 ppm ACGIH TWA
- 5 ppm ACGIH STEL
- 2 ppm (5 mg/m³) NIOSH recommended TWA 10 hour(s)
- 5 ppm (15 mg/m³) NIOSH recommended STEL

Engineering measures

Not available.

Personal protective equipment

- Respiratory : Under conditions of frequent use or heavy exposure, respiratory protection may

protection	be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand mode or other positive-pressure mode. For unknown concentrations or immediately dangerous to life or health – Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
Hand protection	: Wear appropriate chemical resistant gloves.
Eye protection	: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
Skin and body protection	: Wear appropriate chemical resistant clothing.
Ventilation	: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

9. Physical and Chemical Properties

Form	: Gas.
Color	: Colorless.
Odor	: Pungent odor.
Molecular weight	: 66.01
Vapor pressure	: Not available.
Vapor density	: Not available.
Specific gravity	: 1.139 @ -114 C (water = 1)
Boiling point	: -117 F (-83 C)
Freezing point	: -173 F (-114 C)
Water solubility	: Decomposes.

10. Stability and Reactivity

Stability	: Stable at normal temperatures and conditions.
Conditions to avoid	: Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.
Materials to avoid	: Amines.
Hazardous decomposition products	: Thermal decomposition products: miscellaneous decomposition products.

11. Toxicological Information

Toxicity Data

360 ppm/1 hour(s) inhalation-rat LC50

Acute Health Hazard

Ingestion	: Not available.
Inhalation	: Toxic.
Skin	: Not available.

12. Ecological Information

Not available.

13. Disposal Considerations

Waste from residues / unused products : Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U033.
Contaminated packaging : Return cylinder to supplier.

14. Transport Information

DOT (US only)

Proper shipping name : Carbonyl Fluoride
Class : 2.3
UN/ID No. : UN2417
Labeling : 2.3; 8
Additional Shipping Description : Toxic-Inhalation Hazard Zone B

Further information

Cylinders should be transported in a secure upright position in a well ventilated truck.

15. Regulatory Information

OSHA Process Safety (29 CFR 1910.119) Hazard Class(es)
2500 LBS TQ.

TCSA

Material is listed in TSCA inventory.

SARA Title III Section 302 Extremely Hazardous Substances (40 CFR 355.30)
Not regulated.

SARA Title III Section 304 Extremely Hazardous Substances (40 CFR 355.40)
Not regulated.

SARA Title III SARA Sections 311/312 Hazardous Categories (40 CFR 370.21)

Acute: Yes
Chronic: No
Fire: No
Reactive: Yes
Sudden Release: Yes

SARA Title III Section 313 (40 CFR 372.65)
Not regulated.

16. Other Information

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