

FREON (CHLOROFLUOROCARBON & HYDROFLUOROCARBON REFRIGERANTS)

EXPOSURE IN NAVY AVIATION:

SHORT- AND LONG-TERM HEALTH EFFECTS

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Freon (including CFC-12, R-12, R-114, HFC-134a, and related refrigerants) has been widely used in U.S. Navy aviation systems such as:

- Aircraft environmental control systems (ECS)
- Avionics cooling systems
- Aircraft liquid cooling units
- Support equipment refrigeration units

Exposure occurs during maintenance of cooling units, line breaks, leak testing, and accidental releases.

Freon is colorless, has a faint odor, and can displace oxygen, creating both toxic and asphyxiation hazards.

SHORT-TERM (ACUTE) EFFECTS OF FREON EXPOSURE

1. Respiratory Effects:

- Throat irritation
- Coughing
- Chest tightness
- Shortness of breath

High concentrations displace oxygen, causing asphyxiation risk.

2. Neurological Symptoms:

Freon vapors can affect the central nervous system.

Symptoms include:

- Dizziness or lightheadedness

- Headaches
- Confusion or impaired coordination
- Nausea
- Fainting (in oxygen-deficient spaces)

3. Cardiac Sensitization:

Freon can increase the heart's sensitivity to adrenaline.

This may cause:

- Irregular heartbeat
- Palpitations
- Risk of ventricular arrhythmia during high exposure

4. Skin & Eye Exposure:

- Frostbite-like burns from liquid Freon contact (due to rapid evaporation and freezing)
- Eye irritation from vapor exposure

5. Asphyxiation Risk:

In confined spaces, Freon vapor displaces oxygen and may cause:

- Rapid-onset confusion
- Blue lips and fingernails
- Loss of consciousness
- Death if not removed from exposure

LONG-TERM (CHRONIC) EFFECTS OF FREON EXPOSURE

1. Chronic Neurological Effects:

Long-term high exposure may lead to:

- Memory difficulties
- Reduced concentration
- Chronic headaches

- Mood changes (irritability, anxiety)

2. Lung and Airway Sensitivity:

Repeated exposure can contribute to:

- Chronic cough
- Airway irritation
- Worsening asthma-like symptoms

3. Heart Sensitization (Persistent):

Some individuals develop long-term sensitivity to stimulants or arrhythmias after significant Freon exposure.

4. Liver and Kidney Stress:

High, repeated exposures to refrigerants may contribute to:

- Mild liver enzyme elevation
- Kidney filtration stress

Severe organ injury is uncommon but documented in high-exposure occupations.

5. Reproductive Effects:

Some refrigerants have been associated (in animal studies) with:

- Lower sperm quality
- Menstrual changes

Human data is limited but considered possible.

6. Frostbite Scarring:

Skin contact with liquid Freon can cause:

- Lasting sensitivity
- Scarring
- Chronic pain in affected areas

NAVY AVIATION ROLES AT HIGHEST RISK

- Aviation Electronics Technicians (AT)
- Aviation Machinist's Mates (AD)
- Environmental control system maintainers
- Avionics cooling technicians
- Support equipment (SE) maintainers
- Depot-level refrigeration unit repair personnel

Working in enclosed bays or fuel cells increases inhalation risk substantially.

VA DISABILITY CLAIM WRITEUP EXAMPLE

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****Statement in Support of Claim: Freon Exposure – Navy Aviation****

I am submitting this statement in support of my claim for service-connected disability resulting from repeated exposure to Freon refrigerants during my service in the United States Navy.

From [YEAR] to [YEAR], I served as an Aviation [RATE/MOS] assigned to the USS [SHIP] and multiple naval air stations. My duties required frequent maintenance on aircraft environmental control systems, avionics cooling systems, and support equipment refrigeration units. These tasks routinely exposed me to Freon refrigerants due to leaks, line breaks, purge operations, and system servicing.

Personal protective equipment was not consistently enforced, and many of these systems were located in confined or poorly ventilated spaces. As a result, I often inhaled Freon vapors and experienced immediate symptoms including dizziness, headaches, throat irritation, nausea, shortness of breath, and episodes of confusion while performing maintenance duties.

Following separation from service, I have continued to suffer from chronic symptoms consistent with long-term refrigerant exposure, including persistent headaches, memory problems, difficulty concentrating, chronic respiratory irritation, and sensitivity to exertion or stimulants. Medical evaluations have documented [ARRHYTHMIA / CHRONIC RESPIRATORY CONDITION / NEUROCOGNITIVE IMPAIRMENT / OTHER], all conditions associated with significant exposure to refrigerant vapors such as Freon.

Given the nature of my responsibilities, my repeated exposure to Freon during daily aircraft maintenance tasks, and the persistence of symptoms after military service, I believe my current medical conditions are directly related to my occupational exposure in Navy aviation. I respectfully request that the VA recognize this disability as service-connected.

Signed,

[Veteran Name]

[Date]