

METHYLENE CHLORIDE (DICHLOROMETHANE)

EXPOSURE IN NAVY AVIATION:

SHORT- AND LONG-TERM HEALTH EFFECTS

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Methylene chloride—also known as dichloromethane (DCM)—has historically been used in Navy aviation for:

- Paint stripping and coating removal
- Cleaning and degreasing aircraft components
- Adhesive removal
- Chemical depainting in depot-level maintenance
- Solvent applications in corrosion-control work

Methylene chloride evaporates rapidly, producing high vapor concentrations—especially dangerous in aircraft hangars, wheel wells, paint booths, fuselage bays, or enclosed maintenance spaces.

SHORT-TERM (ACUTE) HEALTH EFFECTS OF METHYLENE CHLORIDE

1. Severe Central Nervous System (CNS) Effects:

- Headaches
- Dizziness
- Lightheadedness
- Confusion or disorientation
- Fatigue or drowsiness
- Loss of coordination

High exposures may lead to unconsciousness.

2. Respiratory Irritation:

- Burning throat
- Coughing

- Chest tightness
- Shortness of breath

3. Eye & Skin Irritation:

- Redness and burning of the eyes
- Skin irritation or chemical burns
- Dry or cracked skin with repeated contact

4. Heart Sensitization:

Methylene chloride metabolizes into carbon monoxide in the body.

This may cause:

- Rapid heartbeat
- Chest pain
- Increased arrhythmia risk

This is especially dangerous for individuals with heart conditions.

5. Nausea & Gastrointestinal Effects:

- Nausea or vomiting
- Chemical taste in mouth

6. Asphyxiation Risk:

In enclosed areas, vapor buildup may displace oxygen, leading to:

- Confusion
- Blue lips/fingertips
- Loss of consciousness

LONG-TERM (CHRONIC) HEALTH EFFECTS OF METHYLENE CHLORIDE

1. Cancer Risk (Known Carcinogen):

Methylene chloride is classified as a ****probable human carcinogen****.

Associated cancers include:

- Liver cancer
- Lung cancer
- Breast cancer
- Brain cancer

2. Chronic Neurological Damage:

Repeated exposure can cause:

- Memory impairment
- Difficulty concentrating
- Chronic headaches
- Mood changes (anxiety, irritability, depression)
- Sleep disturbances

3. Heart and Blood Effects:

Due to carbon monoxide formation:

- Chronic CO exposure symptoms
- Reduced exercise tolerance
- Palpitations or arrhythmias

4. Liver and Kidney Toxicity:

Long-term exposure may cause:

- Elevated liver enzymes
- Fatigue
- Jaundice (rare but serious)
- Kidney irritation or reduced function

5. Respiratory Conditions:

Chronic inhalation can contribute to:

- Persistent cough
- Airway sensitivity

- Worsening asthma
- Reduced lung capacity

6. Reproductive Effects:

Studies suggest possible:

- Reduced fertility
- Increased miscarriage risk
- Developmental effects in high-exposure scenarios

NAVY AVIATION ROLES AT HIGHEST RISK

- Corrosion control teams
- Aircraft paint stripping and refinishing crews
- Aviation Structural Mechanics (AM)
- Depot-level paint and coatings personnel
- Fuel cell and wheel well maintenance personnel
- Airframe technicians

Enclosed aircraft structures greatly increase vapor concentration.

VA DISABILITY CLAIM WRITEUP EXAMPLE

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****Statement in Support of Claim: Methylene Chloride Exposure – Navy Aviation****

I am submitting this statement in support of my claim for service-connected disability due to long-term occupational exposure to methylene chloride (dichloromethane) 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 included aircraft paint stripping, corrosion control, surface preparation, and cleaning of aircraft components. These tasks required frequent use of methylene chloride-based paint strippers and solvents, often in confined areas such as wheel wells, aircraft bays, and hangars with limited ventilation.

Personal protective equipment such as respirators and chemical-resistant gloves was not consistently provided or enforced. Because of this, I frequently inhaled methylene chloride vapors and experienced immediate symptoms including dizziness, headaches, throat irritation, nausea, and episodes of impaired coordination. I also had repeated skin contact with the solvent, causing irritation and dryness.

Since separating from the Navy, I have experienced chronic symptoms consistent with long-term exposure to methylene chloride, including persistent headaches, memory and concentration problems, respiratory irritation, fatigue, and heart palpitations. Medical evaluations have documented [RESPIRATORY CONDITION / NEUROLOGICAL SYMPTOMS / LIVER ENZYME ISSUES / CARDIAC IRRITABILITY / OTHER], all of which are associated with chronic exposure to chlorinated solvents such as methylene chloride.

Given the nature of my duties, the frequency of exposure, the inadequate protective measures, and the persistence of my symptoms after military service, I believe my current health conditions are directly related to my occupational exposure as a Navy aviation technician. I respectfully request that the VA recognize these disabilities as service-connected.

Signed,

[Veteran Name]

[Date]