

PD-680 EXPOSURE IN NAVY AVIATION:

SHORT- AND LONG-TERM HEALTH EFFECTS

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PD-680 (Type I, II, and III), commonly known as Petroleum Distillate 680 or Stoddard Solvent, is a cleaning and degreasing solvent widely used in U.S. Navy aviation maintenance. It was heavily used for:

- Cleaning aircraft parts
- Degreasing engine components
- Wiping surfaces during inspection and corrosion control
- Fuel cell and line maintenance
- Removing adhesives, hydraulic fluids, and sealants

PD-680 contains a mixture of hydrocarbons, including aliphatic solvents, aromatic compounds, and trace benzene (depending on type and era of issue). These components can create both acute and chronic health effects, especially in enclosed maintenance spaces.

SHORT-TERM (ACUTE) EFFECTS OF PD-680 EXPOSURE

1. Respiratory and Airway Irritation:

- Burning or irritation in nose and throat
- Coughing
- Shortness of breath
- Chest tightness

These symptoms worsen in poorly ventilated shops or aircraft bays.

2. Neurological Symptoms:

PD-680 is a central nervous system depressant.

Acute symptoms include:

- Headaches
- Dizziness or lightheadedness

- Confusion or slowed reaction time
- Fatigue or decreased coordination

High exposures may cause disorientation or temporary unconsciousness.

3. Skin and Eye Irritation:

- Dry, cracked skin
- Chemical dermatitis
- Red, watery eyes

The solvent removes natural oils, increasing skin sensitivity.

4. Gastrointestinal Effects:

- Nausea
- Vomiting
- Chemical taste in mouth

Accidental ingestion can cause severe lung damage if aspirated.

5. Increased Fire and Vapor Hazard:

Highly flammable vapors create additional exposure risks in Navy hangars and ships.

LONG-TERM (CHRONIC) EFFECTS OF PD-680 EXPOSURE

1. Chronic Neurological Effects:

Long-term exposure is linked to:

- Memory impairment
- Trouble concentrating
- Chronic headaches
- Sleep disturbances
- Mood and behavioral changes

2. Peripheral Neuropathy:

Repeated solvent exposure can damage peripheral nerves, causing:

- Numbness or tingling in extremities
- Burning sensations
- Reduced coordination or limb weakness

3. Chronic Respiratory Problems:

Chronic exposure may lead to:

- Persistent cough
- Airway irritation
- Worsening asthma
- Reduced lung function

4. Skin Disorders:

Frequent exposure can cause:

- Chronic dermatitis
- Cracking, painful skin
- Increased sensitivity to solvents

5. Liver and Kidney Effects:

PD-680 hydrocarbons are metabolized through the liver and kidneys.

Chronic, high exposure can cause:

- Elevated liver enzymes
- Kidney irritation or reduced filtering efficiency

6. Potential Carcinogenic Risk:

While PD-680 itself is not officially classified as a carcinogen, older formulations contained:

- Aromatic hydrocarbons
- Trace benzene (a known carcinogen)

Long-term exposure increases risk of:

- Blood cancers (leukemia, lymphoma)
- Lung cancer (especially with co-exposures like paint fumes or JP-5 vapors)

NAVY AVIATION ROLES AT HIGHEST RISK

- Aviation Structural Mechanics (AM)
- Aviation Machinist's Mates (AD)
- Aviation Electronics Technicians (AT)
- Corrosion control teams
- Airframe technicians
- Fuel system repair technicians
- Depot-level painters and artisans

Fuel cell work and enclosed maintenance areas create the highest concentrations of PD-680 vapors.

VA DISABILITY CLAIM WRITEUP EXAMPLE

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****Statement in Support of Claim: PD-680 Exposure – Navy Aviation****

I am submitting this statement in support of my claim for service-connected disability resulting from prolonged exposure to PD-680 petroleum distillate solvent during my service in the United States Navy.

From [YEAR] to [YEAR], I served as an Aviation [RATE/MOS] and was routinely required to use PD-680 to clean and degrease aircraft components, fuel system parts, and corrosion-prone surfaces. PD-680 was used daily during inspections, repairs, and maintenance operations aboard the USS [SHIP] and in hangars and work centers. Tasks often required working with open containers, rags soaked with PD-680, and aerosolized vapors in confined spaces with limited ventilation.

Protective gear such as respirators and chemical-resistant gloves was not consistently provided or enforced. As a result, I frequently inhaled PD-680 vapors and experienced immediate symptoms including dizziness, headaches, throat irritation, nausea, and impaired coordination during maintenance duties.

Since leaving the Navy, I have continued to suffer from chronic symptoms consistent with long-term solvent exposure, including memory and concentration difficulties, ongoing headaches, chronic skin irritation, and respiratory issues. Medical evaluations have documented [NEUROPATHY / CHRONIC DERMATITIS / CHRONIC RESPIRATORY CONDITION / COGNITIVE IMPAIRMENT / OTHER], all of which are known long-term effects of petroleum distillate solvent exposure such as PD-680.

Given my rate, my daily use of PD-680, the lack of adequate protective measures, and the continuation of symptoms after military service, I believe my current medical conditions are directly related to occupational exposure during Navy aviation service. I respectfully request that the VA recognize this disability as service-connected.

Signed,

[Veteran Name]

[Date]