

PLS (PETROLEUM LUBRICATING SOLVENT / PRESERVATIVE LUBRICATING SOLVENT)

EXPOSURE IN NAVY AVIATION:

SHORT- AND LONG-TERM HEALTH EFFECTS

=====

In Navy aviation, "PLS" typically refers to **Petroleum Lubricating Solvent** or **Preservative Lubricating Solvent**, used for:

- Cleaning and flushing mechanical components
- Preserving metal parts from corrosion
- Lubrication of aircraft mechanisms
- Degreasing parts prior to maintenance
- Removing old lubricants, hydraulic oils, and contaminants

PLS typically contains:

- Aliphatic hydrocarbons
- Petroleum distillates
- Light aromatic hydrocarbons (trace amounts)
- Corrosion-inhibiting additives

Exposure occurs through inhalation of fumes, direct skin contact, or eye contact.

SHORT-TERM (ACUTE) EFFECTS OF PLS EXPOSURE

1. **Respiratory Irritation**

Common symptoms include:

- Burning throat or nose
- Coughing
- Chest tightness
- Shortness of breath

- Headaches

More severe in enclosed areas such as engine bays, rotor bays, or hangars.

2. ****Central Nervous System (CNS) Depression****

Solvent vapors may cause:

- Dizziness
- Headache
- Lightheadedness
- Fatigue
- Slowed reaction time
- Mild confusion

High exposures may cause temporary loss of coordination.

3. ****Skin and Eye Irritation****

PLS is a defatting agent.

Effects include:

- Redness
- Dryness or cracking of skin
- Chemical dermatitis
- Burning or watery eyes from vapor exposure

4. ****Nausea and GI Symptoms****

- Nausea
- Vomiting
- Metallic or chemical taste

Accidental ingestion or aspiration is dangerous and may cause chemical pneumonitis.

5. ****Fire/Vapor Hazards****

PLS vapors are flammable and accumulate in confined spaces.

LONG-TERM (CHRONIC) EFFECTS OF PLS EXPOSURE

1. ****Chronic Dermatitis****

Repeated skin exposure may lead to:

- Persistent irritation
- Cracking or bleeding skin
- Chemical sensitivity

2. ****Neurological Effects****

Long-term solvent exposure can cause:

- Memory problems
- Difficulty concentrating
- Chronic headaches
- Mood changes (irritability, anxiety)
- Sleep disruption

3. ****Respiratory Problems****

Chronic inhalation may contribute to:

- Chronic cough
- Airway hypersensitivity
- Worsening asthma
- Reduced lung function

4. ****Peripheral Neuropathy****

Long-term solvent exposure may cause:

- Tingling or numbness in hands/feet
- Burning sensations
- Reduced motor coordination

5. ****Liver and Kidney Stress****

Prolonged exposure can lead to:

- Elevated liver enzymes
- Kidney irritation or reduced filtration ability

6. ****Potential Carcinogenic Concerns****

Although PLS itself is not formally classified as a carcinogen, older formulations may contain:

- Trace benzene
- Light aromatic hydrocarbons

Chronic exposure may increase risks for:

- Leukemia
- Lymphoma
- Lung cancer (especially with co-exposures like JP-5, MEK, paint fumes)

NAVY AVIATION ROLES AT HIGHEST RISK

- Aviation Structural Mechanics (AM)
- Aviation Machinist's Mates (AD)
- Aviation Electronics Technicians (AT)
- Corrosion control teams
- Engine bay / rotor bay maintenance personnel
- Aircraft preservation crews
- Fuel and hydraulic cleanup personnel

Confined aircraft structures significantly increase exposure.

VA DISABILITY CLAIM WRITEUP EXAMPLE

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

I am submitting this statement in support of my claim for service-connected disability due to long-term occupational exposure to PLS (Petroleum Lubricating Solvent) 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 involved daily use of PLS for aircraft maintenance tasks including degreasing parts, flushing components, cleaning mechanical assemblies, and corrosion control. These tasks were often performed in enclosed aircraft bays, wheel wells, and engine compartments with limited ventilation.

Personal protective equipment was not consistently provided or enforced. As a result, I frequently inhaled PLS vapors and experienced immediate symptoms such as dizziness, headaches, throat irritation, nausea, and fatigue. I also regularly had direct skin contact with PLS, which caused dryness, irritation, and cracking.

Since separating from the Navy, I have continued to experience chronic symptoms consistent with long-term solvent exposure, including persistent headaches, difficulty concentrating, chronic dermatitis, respiratory irritation, and fatigue. Medical evaluations have documented [NEUROLOGICAL SYMPTOMS / CHRONIC DERMATITIS / RESPIRATORY CONDITION / OTHER], all of which align with known long-term effects of petroleum solvent exposure.

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

Signed,

[Veteran Name]

[Date]