

PKP (Purple-K Powder) Exposure in Navy Aviation: Short- and Long-Term Health Effects

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PKP, also known as potassium bicarbonate dry chemical fire extinguishing agent, is widely used in Navy aviation for flight line, hangar bay, and aircraft fire suppression. While effective at extinguishing fuel fires, exposure to PKP dust can cause both immediate and chronic health symptoms.

Short-Term (Acute) Health Effects

1. Respiratory Irritation:

- Coughing
- Shortness of breath
- Burning sensation in throat and nose
- Chest tightness
- Wheezing (especially in enclosed spaces)

2. Eye Irritation:

- Burning
- Watering
- Redness
- Temporary blurred vision

3. Skin Irritation:

- Dryness
- Itching
- Redness
- Rash (rare but possible)

4. Gastrointestinal Symptoms:

- Nausea
- Metallic or chalk-like taste
- Vomiting (if inhaled in high quantities)

5. Headache and Fatigue:

- Often due to inhalation of fine particulate matter

Long-Term (Chronic) Health Effects

Repeated exposure to PKP—especially in Navy aviation environments involving crash crews, flight deck operations, and hangar bay systems—may contribute to:

1. Chronic Respiratory Problems:

- Chronic cough
- Reactive airway disease
- Exacerbation of asthma
- Chronic sinusitis or rhinitis
- Sensitivity to airborne particulates

2. Lung Irritation Over Time:

- Persistent airway inflammation
- Reduced tolerance for dust, fumes, or smoke

3. Eye Sensitivity:

- Recurring irritation, redness, or dryness

4. Skin Effects:

- Repeated dryness or dermatitis from dust exposure

5. Psychological Impact:

- Stress reactions related to firefighting incidents or PKP discharge events, especially during emergencies.

VA Disability Claim Example Narrative

Below is an example statement that a veteran may include with a VA disability claim regarding PKP exposure:

"I served in U.S. Navy aviation and was repeatedly exposed to PKP (Purple███K dry chemical firefighting agent) during my duties. Exposure occurred during aircraft firefighting drills, hangar bay system discharges, and actual aircraft-related emergencies. During these events, I inhaled airborne PKP dust, which caused immediate coughing, throat irritation, and shortness of breath. Over time, I developed chronic respiratory symptoms that continue to this day. I now experience persistent coughing, sinus inflammation, difficulty breathing around dust or fumes, and recurring headaches. I believe these chronic symptoms are directly connected to repeated PKP exposure during my naval service."

Stressor Statement Example (for psychological or traumatic exposure claims)

"While serving in Navy aviation, I was directly involved in aircraft emergency responses where PKP fire suppression was deployed. During one particular event, an aircraft fire erupted on the flight line, and PKP was discharged heavily in my immediate vicinity. The chaotic environment, fear of explosion, and exposure to choking dust created a highly stressful and traumatic event. Since then, I experience recurring anxiety, intrusive memories of the incident, and heightened reactions to alarms, chemical smells, and emergency situations. This event continues to affect my daily mental well-being."

This document serves as a structured reference for understanding PKP exposure health effects and provides examples of VA claim and stressor statements.