



Just the Facts...

JP-8 - Individual

GENERAL INFORMATION	<p>JP-8 is an abbreviation for “jet propellant-8”. It is similar to the fuel that replaces, JP-5, but there are some differences. Both of these fuels are colorless liquids made up of many different substances. The largest constituent by far is “kerosene”, which makes up more than 98% of the total volume of both JP-5 and JP-8. “Aromatic hydrocarbons” (benzene, toluene, and xylene) make up a very small fraction of JP-5 and JP-8 fuels. JP-8 contains less benzene than JP-5. Regular automobile gasoline typically contains more benzene than the kerosene based jet fuels. JP-8 and commercial jet fuel (jet fuel-A) are chemically identical, but have different additives.</p> <p>Since the 1990s, the military services and NATO forces have been changing to a single engine fuel, JP-8, to power diesel engines and turbines in land vehicles, aircraft, vessels, and generators, as well as, to burn in tent heaters and field kitchens. Due to the Navy’s shipboard fire safety concerns, carrier-based aircraft have not made the switch from JP-5.</p> <p>For specific uses (such as a fuel in a high performance jet aircraft engine or the fuel in a tent heater), different chemical additives are blended into the basic JP-8 fuel. These additives include stabilizers, corrosion and ice inhibitors, anti-static agents, and gum and varnish cleaners</p> <p>JP-8 has performance and health advantages over previously used fuels. It is thicker and less volatile than JP-5, and it contains less benzene--a known cancer-causing chemical. However, it evaporates slowly resulting in prolonged skin contact. Some of the chemical additives give additional toxicity to the basic fuel.</p>
ROUTINE USES IN THE DEPLOYED SETTING	<p>Diesel and turbine powered Army land vehicles, aircraft, water vessels, and auxiliary equipment (large generators) use JP-8 as a fuel. Passenger vehicles, drone aircraft, and some small engine use gasoline. The vehicles, aircraft, and vessels using JP-8 include the Abrams M1A1/M1A2 Main Battle Tanks, Bradley Fighting Vehicles, HumVees, as well as, heavy trucks, helicopters, and most Army “boats”. Exposure to JP-8 can occur during use, fueling, maintenance, and repair operations. Additionally, fuel handling and transportation, spill clean-up, and use in stoves, heaters, and generators are other potential sources of JP-8 exposure. During the current deployment, soldiers have been soaking gas plugs in ammo cans filled with JP-8. This may result in skin contact when they retrieve them.</p>
PERSONAL PROTECTIVE EQUIPMENT (PPE) and COUNTERMEASURES AVAILABLE FOR DEPLOYED PERSONNEL	<p>Eye and skin contact should be avoided through the use of protective eyewear, gloves, and protective outer garments that do not absorb the organic liquid. Inhalation exposure can occur from the vapor or aerosol mist during “cold” turbine engine start-up. Nearby personnel should be positioned away from the vapor/aerosol plume. Handling and transfer of fuel should be performed in well-ventilated areas.</p> <p>Aircraft maintenance personnel must wear appropriate respiratory protection and clothing when working with or entering fuel cells.</p> <p>Clothing should be promptly removed if it becomes wet with JP-8. Clothing should be laundered before wearing again.</p>
EXPOSURE LEVELS HISTORICALLY ENCOUNTERED	<p>During aircraft fuel cell maintenance (in an enclosed space), the USAF has found that levels of total JP-8 and benzene (found in JP-8) may exceed worker limits. These unique tasks represent the highest exposure levels for military personnel, and these individuals use appropriate clothing and respiratory protection to limit their exposure. These exposures are not typical of the vast majority of exposures to those who work with JP-8.</p>

<p>SIGNS AND SYMPTOMS OF ACUTE AND CHRONIC EXPOSURE</p>	<p>Generally, the acute and chronic effects of JP-8 are similar to those following exposure to hydrocarbons (kerosene) or solvents (PD 680; Stoddard). JP-8 can irritate the eyes, nose, throat, and lungs. In an extensive USAF-sponsored study, dizziness, lightheadedness, skin irritation, and an objectionable taste in the mouth and odor on the breath were some of the more commonly reported complaints. Difficulty concentrating, balance problems, walking difficulties, forgetfulness, and trouble with gripping objects were mentioned less frequently.</p> <p>This study also found that respiratory illnesses were not increased, and no long-term health hazards were associated with JP-8 exposure.</p>
<p>REVERSIBILITY OF ACUTE AND CHRONIC EFFECTS</p>	<p>The acute effects are reversible when exposure is stopped. USAF study results have not found long-term health hazards from JP-8 exposure.</p>
<p>TREATMENT REQUIRED/AVAILABLE FOR EXPOSURE</p>	<p>Protective eyewear and skin covering should be worn when there is the potential for splashing or contact with the liquid.</p> <p>JP-8 should be immediately rinsed out of the eyes or off the skin with water. Eyes should be rinsed out for 15 minutes.</p>
<p>LONG TERM MEDICAL SURVEILLANCE REQUIREMENTS OF HEALTH EFFECTS MONITORING</p>	<p>Medical surveillance is not required for routine exposure.</p>
<p>SPECIAL RISK COMMUNICATION INFORMATION</p>	<p>Some individuals working with JP-8 note an objectionable taste in the mouth and odor on their breath after exposure. This is temporary and not harmful. It will go away within several hours, but it is an indication that you have been exposed. Precautions taken to decrease your exposure and contact with JP-8 will likely prevent this from recurring.</p>