



BENZENE (C₆H₆)

Agent Information:

Benzene (benzol, coal tar naphtha, phenyl hydride and cyclohexatriene) is a highly volatile and flammable liquid industrial chemical. It has the potential to cause mass casualties. As a vapor, benzene is heavier than air and may accumulate in low-lying areas. Benzene's sweet aroma generally provides adequate warning of hazardous concentrations for acute exposure.

Signs and Symptoms:

Signs and symptoms vary, depending on the route and level of exposure. Benzene is mildly irritating to the skin, eyes and respiratory tract. Benzene may cause central nervous system depression and arrhythmias to acutely exposed persons. Long-term exposure to benzene may cause anemia, alterations to the immune system, and leukemia. The effects of acute exposure to high concentrations of benzene (neurological, dermal, respiratory, gastrointestinal) are evident immediately after exposure.

Route of Exposure:

Benzene is absorbed rapidly and extensively after inhalation and ingestion. It is absorbed less extensively through intact skin; however, percutaneous absorption may contribute to total body burden.

Protective Measures:

Persons exposed only to benzene vapor do not pose substantial risks of secondary contamination to others. Persons whose clothing or skin is contaminated with liquid benzene can cause secondary contamination by direct contact or through off-gassing vapor. PPE includes hooded PAPR, biochem suit, gloves, boots, etc.

Lab Samples Requested for Evaluation:

Serum (red / black top tube), whole blood (purple top tube) and urine samples.

Prophylaxis:

Appropriate PPE to avoid secondary contamination.

Treatment:

There is no specific antidote for benzene, just supportive care. If ingested, consider gastric lavage with activated charcoal. For liquid exposures, decontaminate with soap and water. Treatment consists of supporting respiratory, cardiovascular, and neurological functions. Attempt to minimize the victim's excitation, since excessive catecholamine can induce life-threatening arrhythmias due to benzene's myocardium sensitizing effect. Administer benzodiazepines for seizures.

Reporting:

Report suspect cases immediately to Delaware's Division of Public Health, Epidemiology Branch: 1-888-295-5156 (24/7 coverage).

Contact Information:

Delaware's Division of Public Health: 1-888-295-5156. For additional information, view the Centers for Disease Control and Prevention (CDC) website for Emergency Preparedness and Response at www.bt.cdc.gov.