



Maine Chapter

Company _____ Job Name _____ Date _____

Weekly Tool Box Talk: **The Bad Side of Benzene**

Benzene is a clear, colorless, flammable liquid that is extracted from crude oil. It is also called Benzol, coal naphtha, cyclohexatriene, phene, phenyl hydride, and pyrobenzol. Benzene is widely used to produce many other chemical compounds. Styrene and cyclohexane are major products of benzene as well as detergents, dyes, insecticides, pharmaceuticals, varnishes and plastics. It is also an excellent solvent, although it should never be used as such due to its extreme flammability . Because it forms explosive mixtures with air, benzene may be used as a fuel component for internal combustion engines and it is an excellent octane enhancer. Benzene is often present at levels from 1/2 percent to 5 percent in gasoline, diesel fuel and aviation gas as a by-product of the refining process. What a useful chemical-but it has drawbacks.

Benzene is acutely toxic if absorbed through the skin or if the vapors are inhaled. Symptoms of exposure to high concentrations of benzene vapors include euphoria, giddiness, breathlessness, and irritability. It may cause irritation of the eyes, nose, and respiratory tract. Contact may also bring on a headache, dizziness, nausea, or a feeling of intoxication. Continued exposure to benzene at high levels will result in convulsions, loss of consciousness, and death due to respiratory failure. Repeated inhalation at low concentrations can lead to severe anemia and other serious blood disorders. Since benzene is a suspected carcinogen, OSHA regulations require very specific controls if employees are exposed above the *permissible exposure limit* (PEL) of one part benzene per million parts of air (1 PPM).

If you think the products you are using may contain benzene, use caution:

1. Obtain the Material Safety Data Sheet (MSDS). This will tell you whether or not the product contains benzene and what protective equipment or practices should be used.
2. Avoid breathing vapors that come from any operations that involve fluid transfer (which is true of all chemicals as well as benzene).
3. If you are in an area where suspected benzene-containing materials are being used, be sure to use proper personal protection. This includes adequate respiratory protection for airborne concentrations, chemical resistant gloves, splash gear and chemical goggles if necessary.
4. Benzene is extremely flammable, and fires or explosions are potential dangers. Like other hydrocarbons, its vapor is heavier than air. The vapors will settle in low lying areas and may travel to a source of ignition and flash back. Dry chemical, foam or carbon dioxide extinguishers should be used to fight a benzene fire, with protective equipment and clothing always used.
5. Artificial respiration and oxygen should be given to victims who have been exposed to benzene and stopped breathing. Exposed skin should be immediately flushed with soap and water, and contaminated clothing removed. A victim who has swallowed benzene and is still conscious should be given water or milk to drink. Get medical assistance immediately if exposure occurs.

Safety Recommendations: _____

Job Specific Topics: _____

M.S.D.S. Reviewed: _____

Attended By: _____

