

Benzene and Employee Exposure

Benzene Leukemia Lawyers



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Benzene is a known carcinogen. OSHA sets limits of 1 ppm (part per million) time weighted average (TWA) over an 8 hour period and a short term exposure limit (STEL) of 5 ppm (parts per million) for a maximum of 15 minutes.

NIOSH REL (recommended exposure levels) is substantially lower at a time weighted average (TWA) of 0.1 ppm (parts per million) and a short term exposure limit (STEL) of 1ppm (part per million).

A very large study published in the Journal of the National Cancer Institute adds a new, very concerning variable to the issue of Benzene exposure. Benzene exposure is a cumulative toxin. This means that any exposure, no matter how small, accumulates and over time may manifest cancer(s). This new exposure measurement is defined as "ppm benzene years of exposure".



An article in the September issue of Occupational Health and Safety Magazine reported: "workers with a cumulative exposure of benzene in the middle range of 0.348-2.93 ppm benzene years, not only have a statistically increased risk of developing Chronic Myeloid Leukemia but in fact, have a risk factor greater than three times that of unexposed workers".



In an exposure assessment survey of gasoline station attendant's, published in the National Center for Biotechnology Information (NCBI), levels of 0.53 mg/m³ (milligram per cubic meter) was the average yearly personal exposure to benzene estimated. (individual means based on 6.5 repeated samples per employee).

In September of 2006, ECS requested a Phase II Volatile Organic Compound Emissions Test to determine the possible benzene and VOC exposure during typical service station conditions. The following were the conclusions of this study:

“The BTEX emission factors were used to model a concentration exposure that might be expected during application under typical service station conditions. The exposure to benzene would vary from about 0.64 to 2.3 ug/m³. An average range of urban outdoor concentration of benzene is between 0.1 to 3 ppbv. The values from this study are well within that range indicating that there would not be a significant increase in exposure from applying the product.

The concentrations of the liquid composition by purge and trap are similar to samples previously collected from field-testing. The two components in the mechanism of the Formula are vaporization and solubilization. It appears that the mechanism is complex where the lighter, non-water soluble compounds are not just volatilized but are also solubilized within the formula’s solution. The majority of the BTEX components remain in the liquid solution after the 300 second (5 minute) mixing cycle. There is no evidence of conversion to other compounds.”

The FM 186-2 Program is preemptive and a positive action to prevent or reduce these exposures



The FM 186 Program provides vapor suppression to the Maximum Extent Practical.

*Petroleum waste is a presumptive hazardous waste and the users/generators are responsible for proper waste characterization and disposal. Regulations establish that prior knowledge of the waste and the treatment process in which it was generated can be applied in determining a waste's classification. The FM 186 program is an immediate response spill treatment procedure that can be applied as part of prior knowledge in which the waste was generated. Federal and state regulations state that