U.S. Environmental Protection Agency

EPA Newsroom

EPA-OSHA FACT SHEET: Environmental Information from Ground Zero at the World Trade Center Site

Much of the monitoring data collected to date on and around the World Trade Center site indicates relatively low levels of asbestos and other potential contaminants. Nevertheless, workers should take precautions to protect themselves from any potential exposure.

The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) are making every effort to protect the health of workers at the World Trade Center site. EPA and OSHA are providing real-time analysis in the immediate vicinity of the debris pile at ground zero, checking for compounds such as benzene, sulphur dioxide and carbon monoxide that are associated with fires. This information helps response workers on the scene determine what level of respiratory protection is appropriate to use. EPA is also collecting data from 16 fixed air monitors in and around ground zero, which provide critical information about levels of asbestos at the site.

Crews working on the rubble pile at the World Trade Center site should wear respirators, which have been provided by EPA, OSHA and other government agencies, and take appropriate precautions to protect against potential environmental hazards. OSHA is fit-checking respirators for workers involved in the rescue and recovery.

To reduce worker exposure to the dust, EPA has set up washing stations for response workers at ground zero. These stations provide shelter, shade and a place for workers to wash off and change into clean clothing before going home. Vehicles and heavy equipment departing the zone are being washed down prior to departure as well. Signs informing rescuers of the need to wear protective gear are posted throughout the washing areas.

Asbestos Monitoring Data – Ambient Air Samples:
OSHA has analyzed 67 air samples in the area where crews are actively working on the World Trade Center Site. None of these samples exceeded OSHA's permissible exposure limit of 0.1 f/cc as an 8-hour time-weighted average.

EPA has collected and analyzed a total of **442** air samples for asbestos from its 16 fixed air monitoring stations, which are located in the area surrounding the World Trade Center site. Only **27** were above 70 structures per millimeter squared, the AHERA standard, which is based upon assumptions of long-term exposure. ("AHERA" is the Asbestos Hazard Emergency Response Act, which is used to determine whether children may re-enter a school building after an asbestos removal or abatement.)

Asbestos Monitoring Data – Bulk Dust and Debris Samples:
EPA and OSHA have also sampled dust at the site and in the surrounding area for asbestos. Of **177** bulk samples collected by EPA and OSHA, **48** contained more than one percent asbestos, the level EPA and OSHA use to define asbestos-containing material. The existence of dust that contains more than one percent of asbestos does not in itself constitute a significant health hazard – ambient air samples are more accurate measures of actual exposure potential, and asbestos is primarily considered hazardous after long-term exposure – but dust

samples do provide important information about potential exposure. Asbestos was used as a fire-proofing material in a portion of one of the World Trade Center towers.

Dioxin:
EPA took samples at four stations on Sept. 16 and analyzed them for dioxin. Levels were at or just above EPA's standard for action based upon an assumption of a continuous 30-year exposure. EPA is monitoring closely, but sees no cause for concern by workers or the public based upon short-term exposure to these levels. EPA and OSHA recommend that workers at the site use respirators they have been provided, which will protect them from exposure to dioxins.

Metals:
OSHA has taken 53 samples of metals such as lead, iron oxide, zinc oxide, copper and beryllium. None of the levels found for these metals have exceeded OSHA limits.

Volatile Organic Compounds (VOCs):
EPA and OSHA have closely monitored levels of VOCs in the plume of smoke coming from the site, mainly to assist response workers in determining the appropriate level of respiratory protection. Four samples exceeded the OSHA standard of 0.5 parts per million (ppm) for an eight-hour day, but did not approach a level of immediate concern to workers. The sample taken September 22 had a level of 3.2 ppm. One sample taken on September 26 had a level of 11 ppm, which fell to 2.6 ppm on September 29. The sample taken September 30 found 5.1 ppm. EPA and OSHA are continuing to monitor these emissions closely, but expect them to decrease significantly as the remaining fires under the debris pile are extinguished.

Carbon Monoxide:
OSHA has taken nine personal samples of carbon monoxide for workers on the debris pile; results range from 1 ppm to 15 ppm – well below the OSHA standard (50 ppm permissible exposure limit). As a precaution, FEMA is bringing in a medical team to handle any potential health complaints from workers on the site.

Silica:
OSHA has collected more than 40 samples from the disaster site and analyzed them for crystalline silica. The overwhelming majority have shown no detectable levels of silica. The highest result was less than half the OSHA limit.

Freon:
Freon, which is commonly used as a coolant in refrigerators and air conditioners, was stored in the basement of the World Trade Center. The freon containers have been located and are reported to be intact. The freon will be recycled after it is removed.

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