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Occupational Safety & Health Fact Sheet

Lead & The Workplace

CWA Occupational Safety and Health Fact Sheet #3
Lead & the Workplace

For thousands of years, lead has been known to be hazardous. However, for many years, relatively little was done to adequately protect U.S. workers from the hazardous effects of lead exposure. This changed in November 1978, when the Occupational Safety and Health Administration (OSHA) issued an improved lead standard. OSHA estimated that 835,000 workers, including many thousands of CWA members, would be protected by the standard. Affected CWA members are primarily employed in manufacturing and telecommunications cable splicing and outside plant technician jobs.

Health Effects

Lead exposure can result in workers experiencing headaches, fatigue, irritability, nervousness, high blood pressure, sleeplessness, pain in joints, aching muscles, poor appetite, stomach pains, and constipation. If a worker should notice any of these symptoms, she/he should see a doctor.

Even more severe effects of lead exposure such as damage to the nervous system, kidney damage, sterility and birth defects, anemia, and interference with the body's blood forming mechanism may afflict some workers.

Since all of these health problems may either appear slowly or be caused by other reasons, lead can be easily overlooked as the cause. Some workers with these problems will have them for many years, but the health effects will not get much worse. Others will either suddenly or gradually develop the disabling or life threatening effects of lead poisoning.

Lead can enter your body in two ways-- by breathing or swallowing. Up to 70% of the lead dust or fumes that one breathes is/are absorbed into the body; whereas, approximately 30% of the lead one swallows is absorbed into the body.

Medical Tests

The initial preferred medical test to determine the amount of lead in an individual's body is a blood lead level test. This test measures the most recent exposures to lead, not long-term exposure. If high blood levels are identified through the blood level test, a complete physical examination should be conducted to best assess the effects of lead exposure upon the body. Preferably, this exam should be performed by an occupational physician. Such an exam will determine the degree of lead poisoning and functional damage to the body.

Treatment for Lead Poisoning

Lead poisoning is preventable through the development of controls at the workplace. In cases where a worker has been overexposed to lead, exposure should be stopped and controls should be introduced to prevent any recurrence.

In instances where workers have been severely exposed, medical treatment known as

chelation can be given to help the body get rid of the lead. The most common chelating agents are calcium disodium versanate or versine (Ca Na(2) EDTA), penicillamine, and British anti-Lewisite (BAL). Since chelation treatment may have harmful side effects, treatment should only be administered by proper medical personnel in a hospital/clinical setting.

Controlling the Hazard
Lead poisoning can best be controlled by removing the lead from the workplace. However, in many cases, this is not possible. An example would be working on lead encased telecommunications cables.

Lead should be kept out of the air you breathe. Lead usually enters the air as a fume or dust. Fumes are tiny particulates that boil-off when lead is heated. Lead dust/particulates may be formed during carding, grinding, filing, and lead removal operations. Also, a fine film of lead sub-oxide dust can form on the surface of molten lead. This nearly invisible dust can get into the air whenever the surface is agitated. Further, lead dust may gather upon work surfaces during the performance of lead servicing/maintenance/removal work. In these cases, surfaces/materials upon which lead dust has settled should be thoroughly cleaned and lead contaminated materials properly disposed of.

Protective procedures and methods that must be provided by the employer to prevent lead exposure include:

Local Exhaust Ventilation- Local exhaust ventilation uses hoods, ducts, fans, and filters to remove lead fumes and dust at the point where they are produced.

Personal Protective Equipment- This includes the use of gloves, goggles, clothing protection, boots, and where necessary, respirators.

Personal Hygiene- Personal cleaning materials such as waterless cleaners and paper towels must be made available to all workers at their work locations.

All workers who work with lead should be provided and use these protective materials.

OSHA's Lead Standard
OSHA's lead standard, CFR 1910.1025, requires employers with lead operations and processes to conduct industrial hygiene air monitoring to determine the level of lead exposure. The standard sets a permissible exposure level (PEL) of 50 ug/m(3) (micrograms of lead per cubic meter of air) averaged over an eight-hour work shift or period. If the industrial hygiene monitoring results identify lead levels that exceed the permissible exposure limit, the employer must initiate periodic personal sampling or air monitoring tests, as well as instituting engineering, administrative and work practice, as well as personal protective controls to ensure that workers are not exposed to hazardous lead levels. In addition, the employer must provide medical surveillance and, if necessary, medical removal protection for all affected workers. These procedures must be continued until the employer can demonstrate adherence to the OSHA standard.

In addition, the standard includes an "Action Level" of 30 ug/m(3) averaged over an eight-hour period. If the "Action Level" is met or exceeded (as determined by conducting the required industrial hygiene monitoring tests), the employer must institute personal sampling and medical surveillance procedures for all affected workers. Such monitoring must continue to be periodically conducted until the employer demonstrates that lead levels do not meet the "Action Level." Also, medical surveillance procedures must be provided until adherence with the standard is achieved.

Further, the standard provides for engineering controls, administrative controls, safe work practices, better housekeeping, clean lunchrooms, special washing facilities and lockers, employer-supplied personal protective clothing and safety equipment (including respirators), information and training regarding the toxicity of and safe and healthful procedures when working with lead, and, as noted, medical surveillance and medical removal protection for workers removed from the job because of exposure to lead.

The standard's provisions for medical removal protection require employers to provide workers who are determined to have high blood lead levels with full earnings, seniority protection, and other employment rights and benefits for a period up to eighteen months per occasion as though the worker had not been removed from exposure to lead. The lead standard is one of the few OSHA standards that provides for medical removal protection.

What Can You Do?

The key to making the workplace safe for all CWA members is strong, active local safety and health committees. The committee can identify dangerous conditions at the workplace and discuss them with management. If the employer refuses to resolve the safety and/or health hazard(s), the committee can request an OSHA inspection. The committee should always coordinate its activities through the local officers, the CWA Representatives, and negotiated safety and health committees.

In addition, CWA members may obtain information and assistance by contacting the:
CWA Occupational Safety and Health Department
501 Third Street, N.W.
Washington, D.C. 20001-2797Webpage: www.cwasafetyandhealth.org
Phone: (202) 434-1160.

Developed in 1979 and revised in 1991, 1994, 1998, 2000, 2002, 2004, 2009, 2014, and 2017.