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Lead Fact Sheet

Lead is a naturally occurring, soft, bluish-gray heavy metal. Although nearly 50% of lead used today comes from recycled materials such as car batteries, its most common source is the mineral Galena (lead sulfide) that forms as pockets or veins in carbonate rock. The State of Missouri produces nearly 90% of lead extracted from mining operations in the U.S.

Lead has been in use since ancient times. A lead statue discovered in Turkey has been dated to around 6500 BC. The Romans had indoor plumbing that was made from sheets of lead rolled into pipe. Plumbum, the Latin word for lead, is also the origin of the word plumber and the metal's elemental symbol (Pb). Industrial emissions, combustion of leaded gasoline and widespread use of lead-based paint have all contributed to a vast amount of air, water and soil pollution in the 20th Century.

Lead-Containing Materials

Due to its abundance, low cost and physical properties (low melting point, corrosion resistance, waterproof nature and malleability) lead and lead compounds have been utilized in a variety of products including:

- ammunition & fishing sinkers
- paint & varnish
- ceramic glaze, glass & crystal
- pipes, faucets & solders
- caulking & oakum
- x-ray shielding
- plastics
- batteries
- cable covers
- gasoline
- metal flashing
- tank liners
- brass, bronze & pewter alloys
- pesticides
- folk medicines (Mexico)
- cosmetics & hair dyes (India)
- imitation pearls
- crayons (China)

Regulatory agencies have banned the use of lead compounds in some products linked to public health disease or environmental damage, such as gasoline additives, soldered food cans, household paints and toys. Lead-acid batteries account for about two thirds of the lead still used in the U.S. today.

What are the hazards?

Health Affects

The inhalation or ingestion of lead-containing particles can result in “lead poisoning” which has been associated with a number of short term (acute) and long term (chronic) adverse health affects. Depending on the amount of exposure (dose) immediate symptoms may not always be apparent or may resemble other illnesses and result in a misdiagnoses. A simple blood test is the best way to determine if one has been exposed to lead.

Acute, short term health affects may include:

- cramps (lead colic)
- loss of libido
- irritability and moodiness
- birth defects
- headaches
- miscarriage
- insomnia
- stillbirth
- tiredness
- constipation
- nausea
- in children: hyperactivity, lower IQ, slowed growth & hearing loss

Chronic, long term health affects may include:

- muscle & joint soreness
- anemia
- fine tremors
- infertility
- numbness
- kidney damage
- hypertension

Lead can stay in the body for years and is stored in bone or soft tissue including the liver and kidneys. During periods of high calcium demand such as pregnancy, menopause and aging, lead stored in bone tissue can be released back into the bloodstream. Lead is also able to cross the placenta and blood/brain barrier.

Exposure Risks

Exposure to lead can occur almost anywhere. However, in terms of reducing one’s risk, the two areas of greatest concern are the workplace and the home. On the job, high exposures have been associated with lead smelters; construction work that involves sanding, grinding, blasting, torch-cutting or welding surfaces covered with lead paint; auto shops and plumbers who use lead solders; artists and ceramic workers who use lead glazes, and with

indoor firing ranges. Studies have shown that lead dust can also be carried on coveralls or other work clothing resulting in contamination of worker's cars, homes and family.

At home, the most common exposure to lead comes from deteriorating paints that were applied before 1978. Children under the age of seven are at greatest risk of ingesting lead through hand to mouth contact after touching contaminated surfaces or soil. Other potential sources of exposure in the home include leaded crystal, dinnerware glazes, lead water pipes and pipe joint solder, faucets with brass fittings, vinyl mini-blinds made in China, folk medicines and calcium supplements made from animal bone.

How can I protect myself?

Protective Measures – General

EH&S requires the use of strict control measures whenever construction, renovation or maintenance activities may disturb lead-based paint or other lead-containing materials on campus. Numerous local, state and federal laws and regulations also mandate control methods designed to protect workers, children and the environment from exposure to lead.

Housing and Dining Services provides tenants of family housing in Escondido Village (EV) with a copy of the EPA pamphlet entitled "Protect Your Family From Lead In Your Home" and a notification letter that includes safety information and protocols for reporting potential hazards. Blood lead testing for EV children is also provided free of charge.

Protective Measures – Individual

Use the following measures to protect you and others from exposure to lead at work and at home.

- Report damage or deterioration of painted surfaces at work to your supervisor, building manager, Facilities Zone Manager or EH&S.
- Presume all paints and varnishes applied before 1980 contain lead including finishes on old toys, furniture and playground equipment.
- Consider having your young children tested for lead even if they appear healthy.
- A healthy, low fat diet for children will inhibit absorption of lead.
- Wash children's hands and toys often.
- Regularly clean horizontal surfaces that children can reach, such as floors and window sills, with TSP or other phosphorus-based cleaner.
- Avoid exposure to lead dust when remodeling or renovating your home.
- Repair peeling, chipping or chalking paint; keep paint chips out of the soil.
- Do not dry sand, grind or burn painted surfaces; use wet sanding methods to prepare surfaces for re-painting and wash your hands prior to eating, drinking or smoking.
- Do not use a vacuum to pickup paint chips unless the vacuum has a HEPA filter.
- Plant shrubs, ground cover or other physical barrier along the exterior drip line of your home to keep children and pets away from potentially contaminated soil.

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