Lead Exposure in Shooting Ranges

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LEAD can enter the body from inhaling dust and chemicals that contain lead. The most common route of occupational lead exposure is through inhalation. Although adults are more likely to inhale lead, it can also be ingested by workers if good personal hygiene practices, such as but not limited to hand washing before eating.

JUST A FEW LEAD FACTS:

- Pliny identified lead poisoning among ship builders in 79 AD.
- In 1786 Benjamin Franklin gave an account of health effects by lead exposure.
- The major exposure to lead for most adults is found in the workplace.

WORKPLACE EXPOSURE LEVELS

In an effort to reduce and maintain employee exposure at or below the permissible exposure limit (PEL), OSHA's hierarchy of controls requires the implementation of engineering controls. Employers must first determine if lead is present in the workplace. If so, then an exposure assessment (air monitoring) must be conducted in the workplace. Adequate respiratory protection must be provided during the exposure assessment. If employees' airborne exposure is:

- ≥**Action Level** of 30 µg/m^3
  - conduct biological monitoring
  - conduct training
- ≥**Permissible Exposure Level** of 50 µg/m^3
  - install engineering controls
  - use respiratory protection

Surfaces must be maintained as free as practicable of lead. (OSHA does not have an established level for general industry)

Refer to 29 CFR 1910.1025 for additional regulatory information.

ADDITIONAL INFO…

- **Occupational Safety and Health Admin.**
  http://www.osha.gov
- **National Lead Information Center**
  1 (800) 424-LEAD
- **Housing and Urban Development Agency**
  http://www.hud.gov/lea
- **Environmental Protection Agency**
  http://www.epa.gov/lead/

LEAD EXPSOURE PREVENTION STRATEGIES

Engineering Controls

Substitution includes utilization of a material that is less hazardous (i.e. green bullets), or implementing a process change or equipment change to capture lead particles at the point of generation.

Isolation limits workers' exposure to lead by placing workers who are not directly exposed at a greater distance from the source of exposure.

Ventilation of the lead-contaminated work area can help to control airborne lead.

Work Practice Controls

Housekeeping that includes a regular cleaning schedule to remove lead dust and debris will reduce lead exposure. This cleaning can be done by HEPA vacuuming and/or wet cleaning methods.

Good personal hygiene practices will reduce workers' lead exposure and the potential to ingest lead. This also limits the potential for lead to be transported out of the workplace and into workers' homes.

Clean change areas, showers, clean eating facilities, hand-washing facilities, supervision, performance of tasks, periodic inspection and maintenance, and administrative controls are work practice control measures that minimize additional sources of exposure that engineering controls may not capture.

Personal Protective Equipment

Gloves will protect the hands from lead contamination.

Respirator will help prevent the inhalation of airborne lead dust.

Tyvek suits will prevent clothing from becoming contaminated.

For further information, contact the Safety, Health & Environmental Division at (404) 894-3806
http://www.oshainfo.gatech.edu