

TOP 6 WORKPLACE CONTAMINANTS TO NOT IGNORE

Employers are rightfully focused on protecting workers from COVID-19, but it's important to be aware of other workplace contaminants and conduct industrial hygiene sampling when necessary. Our team of industrial hygienists created this guide to help you determine high risk industries for each contaminant, when to sample and special considerations.



Lead



Hex Chrome



Silica



Benzene



Beryllium



Formaldehyde

Workplace Contaminant #1: Lead



Lead exposure is common for workers in metal and battery manufacturing and recycling, shooting ranges, older home remodeling and artists. The effects of lead exposure include fatigue, weakness, memory loss, pain or tingling in the hands and/or feet or nausea.

When to sample:

- When monitoring results indicate an employee has an inhalation exposure at or above the action level but at or below the permissible exposure limit (PEL), monitoring must be repeated within six months of the most recent monitoring.
- When monitoring results indicate an employee has an inhalation exposure above the PEL, monitoring must be repeated within three months of the most recent monitoring.
- Whenever there has been a production, process, control, or personnel change which may result in new or additional exposure to lead.

Special considerations:

- If any employee is exposed at or above the action level for 30 or more days per year engineering and work practice controls must be implemented first.
- Must have a written compliance program.
- Medical surveillance must be made available to anyone occupationally exposed to lead at or above the action level for 30 or more days per year.
- Provide handwashing facilities or shower if exposure is greater than the PEL.

Workplace Contaminant #2: Silica



Silica exposure is common for masons, roofers, stone and sheet metal workers, anyone who manufactures or uses concrete, gypsum or plaster products, roofers, sheet metal workers and those who work in automotive repair shops and medical/dental labs. Workers who are overexposed to silica may develop silicosis, lung cancer, pulmonary tuberculosis, COPD and autoimmune disease.

When to sample:

- When monitoring results indicate an employee has an inhalation exposure at or above the action level, but at or below the PEL, monitoring must be repeated within six months of the most recent monitoring.
- When monitoring results indicate an employee has an inhalation exposure above the PEL, monitoring must be repeated within three months of the most recent monitoring.
- Whenever there has been a production, process, control, or personnel change which may result in new or additional exposure to silica.

Special considerations:

- Regulate and demarcate areas that are reasonably expected to be greater than the PEL.
- Engineering and work practice controls must be implemented first.
- Must have a written exposure control plan.
- No dry sweeping or brushing allowed in areas that contain silica.
- Medical surveillance must be made available to anyone occupationally exposed to silica at or above the action level for 30 day per year or more.
- Rotating employees to different jobs to achieve compliance with the PEL is prohibited.

How to sample: When sampling for silica, the lab must be accredited to ANSI/ISO/IEC Standard 7025:2005 and one of the following approved sampling methods must be used: OSHA ID-142, NMAM 7500, NMAM 7602, MNAM 7603, MSHA P-2, or MSHA P-7.

Workplace Contaminant #3:

Beryllium



Welders, ceramic artists, tool and die makers, and workers who manufacture electronics and alloys have the potential for beryllium exposure. The effects of overexposure include weakness, exhaustion, anorexia, weight loss, chest pain, cough, cyanosis and eye irritation.

When to sample:

- When monitoring results indicate an employee has an inhalation exposure at or above the action level, but at or below the PEL, monitoring must be repeated within six months of the most recent monitoring.
- When monitoring results indicate an employee has an inhalation exposure above the PEL, monitoring must be repeated within three months of the most recent 8-hour time weighted average monitoring.
- When monitoring results indicate an employee has an inhalation exposure above the short term exposure limit (STEL).
- Whenever there has been a production, process, control, personnel, or work practice change which may result in new or additional exposure to beryllium.

Special considerations:

- Regulate and demarcate areas that are reasonably expected to be greater than the PEL.
- Must have a written exposure control plan.
- Engineering and work practice controls must be implemented first.
- Employer must provide readily accessible washing facilities to remove beryllium from the hands, face, and neck in all beryllium work areas.

Workplace Contaminant #4: Hexavalent Chromium



Welders who work with stainless steel, brazers and thermal cutters, and workers in steel manufacturing, electroplating, wood preservation and textile dyeing have the potential for hexavalent chromium over exposure. The side effects include lung cancer, respiratory tract irritation and damage, shortness of breath and allergic contact dermatitis.

When to sample:

- When monitoring results indicate an employee has an inhalation exposure at or above the action level, but at or below the PEL, monitoring must be repeated within six months of the most recent monitoring.
- When monitoring results indicate an employee has an inhalation exposure above the PEL, monitoring must be repeated within three months of the most recent monitoring.
- Whenever there has been a production, process, control, or personnel change which may result in new or additional exposure to hexavalent chromium.

Special considerations:

- Regulate and demarcate areas that are reasonably expected to be greater than the PEL and/or STEL.
- Must have a written exposure control plan.
- Engineering and work practice controls must be implemented first.
- Rotating employees to different jobs to achieve compliance with the PEL is prohibited.

Workplace Contaminant #5:

Benzene



Employees who work in steel and rubber manufacturing/processing, at gas stations or in shoe manufacturing/repair are most at risk for benzene overexposure. Effects of over exposure include eye and/or skin irritation, dizziness, headache, nausea and dermatitis.

When to sample:

- When monitoring results indicate an employee has an inhalation exposure at or above the action level, but at or below the PEL, monitoring must be repeated annually.
- When monitoring results indicate an employee has an inhalation exposure above the PEL, monitoring must be repeated every six months.
- Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to benzene.
- Whenever spills, leaks, ruptures or other breakdowns occur, that may lead to employee exposure, the employer needs to monitor after the cleanup of the spill or repair of the leak, rupture or other breakdown, to ensure that exposures have returned to the level that existed prior to the incident.

Special considerations:

- A written compliance program is required when exposures are over the PEL.
- Regulate and demarcate areas that are reasonably expected to be greater than the PEL and/or STEL.

Workplace Contaminant #6: Formaldehyde



Workers in plastic and resin manufacturing, construction workers using resin, morticians, agricultural workers and beauticians using dyes and smoothing products are more likely to encounter overexposure to formaldehyde. Coughing, wheezing, respiratory tract irritation, lacrimation and nasal cancers are the side effects of overexposure.

When to sample:

- When monitoring results indicate an employee has an inhalation exposure at or above the action level, but at or below the PEL, monitoring must be repeated within six months of the most recent monitoring.
- When monitoring results indicate an employee has an inhalation exposure at or above the STEL, monitoring must be repeated at least once a year, under worst conditions.

Special considerations:

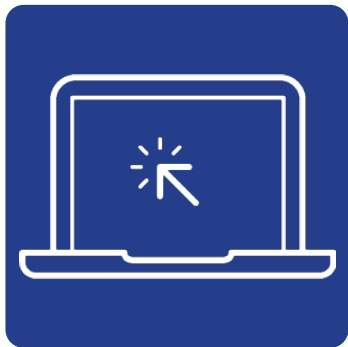
- Regulate and demarcate areas that are reasonably expected to be greater than the PEL and/or STEL and post appropriate signage.
- All employees who are assigned to workplaces where there is exposure to formaldehyde must participate in an annual training program, unless there is objective data that shows the employees are not exposed to concentrations at or above 0.1 ppm.

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