
Workplace Exposures

By Drew Hinton, CSP, CHMM, EMT

Typically, when we think of the term “*exposure*”, we think of chemicals. When we think of the word “*chemical*”, we think of hazardous substances that will severely harm you right away. However, these two terms, when combined, can mean so much more than that! The average worker in the United States is exposed to dozens (if not hundreds) of various substances every day, ranging from welding fumes and silica dust to indoor air quality issues, such as mold and pollens. Each substance has a unique set of characteristics that define how it will affect you within the next few minutes, hours, days, or even years. Below we will discuss how to handle workplace exposures and what should be documented.

Exposure vs. Contamination

Two words I commonly hear incorrectly interchanged are ***exposure*** and ***contamination***. These two terms refer to separate events, so it’s important to understand the difference.

- Exposure means having a substance **AROUND** you, but not on and/or inside you. Exposure means you are in the immediate vicinity of a substance, but the hazard has not made it into your body. For example, when a person has an X-ray and they abide by all required safety precautions, they are *exposed* to radiation, but not *contaminated* with it.
- Contamination means having a substance get **ON** or **INSIDE** you. You can be externally contaminated and/or internally contaminated. Examples of external contamination are when a substance comes into contact with a person’s skin, hair, or clothing. Internal exposure occurs when a substance is swallowed, inhaled, and/or enters through an open wound.

Which of these two events should you report to your employer? **Both!**

What Can You Be Exposed To?

You can be exposed to a variety of different hazards in the workplace, including, but not limited to:

- Biological
 - Hepatitis B
 - HIV
 - SARS-CoV-2
- Chemical
 - Sulfuric Acid
 - Anhydrous Ammonia
 - Hexavalent Chromium
- Physical
 - Occupational Noise
 - Extreme Heat/Cold
 - Radiation
- Ergonomic
 - Excessive Repetition
 - Excessive Force
 - Awkward Postures
- Safety
 - Falls from Heights
 - Slippery Floors
 - Frayed Electrical Cords

Who Is at Risk of Exposure?

Your anticipated level of exposure depends on your job and the related tasks that you will be performing. For example, the typical office worker will usually be limited in exposures due to the nature of their work. Millwrights and other field service employees, on the other hand, can be exposed to a number of different hazards (such as “carbon black”, chemical fumes, and respirable crystalline silica) since their job tasks (and job locations) change from day to day. If you’re an emergency medical responder for your organization trained in CPR and basic first aid, you have a risk of being exposed to bloodborne pathogens and other potentially infectious materials (OPIMs) while treating a patient(s) during a medical emergency.

What is Considered Your Work Environment?

When reporting a workplace exposure and/or contamination to your employer, it's important to understand what is considered your "work environment". To help you better understand this, OSHA defines your work environment as:

"the establishment and other locations where one or more employees are working or are present as a condition of their employment. The work environment includes not only physical locations, but also the equipment or materials used by the employee during the course of his or her work."

For employees who travel as a part of their job, it is considered your "work environment" and is therefore work-related :

"if, at the time of the exposure/contamination, you were engaged in work activities in the interest of the employer. Examples of such activities include travel to/from customer contacts, conducting job tasks, and entertaining/being entertained to transact, discuss, or promote business." (29 CFR 1904.5(b)(6))

One exception to this is if you are exposed and/or contaminated in your hotel room while traveling for work, that typically is **NOT** considered your work environment. It's essentially considered your "home away from home" unless you are conducting business-related work in your hotel room (e.g., sending emails, preparing work expense reports, etc.) and that caused or contributed to your exposure and/or contamination. (29 CRR 1904.5(b)(6)(i))

What to Do If You've Been Exposed or Contaminated

If you believe you've been exposed and/or contaminated with a hazardous substance (e.g., methanol, COVID-19, etc.), immediately notify your immediate supervisor and your organization's EHS Dept. so that an investigation can be conducted and you can ensure you receive the appropriate medical consultation and/or medical treatment (if needed). For example, if you are helping perform first aid on an arm laceration and you get their blood on an exposed part of your body, it's important that your organization is notified of this workplace exposure so that they can get the necessary information from the source and exposed employees, as well as conduct any necessary follow-up testing for bloodborne

pathogens, such as Hepatitis B, Hepatitis C, and/or HIV (with prior written consent from both individuals).

Why Is Reporting Important?

There's an old adage that "*the dose makes the poison*". What this means is that how much of a given substance you are exposed to is a major determining factor in how toxic it is to your body. Some chemicals may be toxic in very low amounts, such as VX (a chemical warfare agent that is lethal with only a 10 mg drop on the skin); others may take large amounts to be considered



toxic, such as carbon dioxide (CO₂), which has a permissible exposure limit (PEL) of 10,000 PPM. In addition, some chemicals have acute (short-term) health effects, whereas others have chronic (long-term) health effects. For example, mesothelioma related to asbestos exposure *typically* takes between 20 and 50 years to develop after your first asbestos exposure, so odds are that you may not even be working for the company by the time any signs and/or symptoms of mesothelioma develop.

This is where the phrase "***If it's not documented, it didn't happen...***" comes in! If you report the workplace exposure/contamination when it occurs, then it can *potentially* be covered by your organization's worker's compensation policy. However, if it's never reported to the employer, it will be very difficult for you to prove that it's related to a workplace exposure. It's also important to note that just because you have a documented workplace exposure **DOES NOT** mean that any subsequent illnesses that occur will be covered by your organization's worker's compensation policy – the work-relatedness will have to be evaluated and determined by a physician or other licensed health care professional (PLHCP).

If you think you may have potentially been exposed and/or contaminated with a hazardous substance(s), provide the following information to your immediate supervisor and company EHS representative:

- **WHO and/or WHAT was exposed and/or contaminated?**
 - Consider all personnel, as well as contaminated equipment, machinery, etc.
- **WHAT were you exposed to and/or contaminated with?**
 - Be specific with the name of the substance.

- **HOW MUCH were you exposed to and/or contaminated with?**
 - Be as precise as possible.
- **WHY were you exposed to and/or contaminated with it?**
 - What were you doing at that time?
- **WHEN were you exposed and/or contaminated?**
 - Be sure to indicate whether it's A.M. or P.M.
- **WHERE were you exposed to and/or contaminated with it at?**
 - Use location names and/or addresses.
- **WHAT body part(s) were exposed and/or contaminated?**
 - Be sure to properly decontaminate afterwards.

AVOID THE SAFETY SAND TRAP COURTESY OF CADDYSHACK

By Stacey Godbold, Sospes EHS Software



I know what you're thinking, how can Caddyshack teach me a thing or two about safety? You'd be surprised what you can learn from Carl, Ty, and Al.... even if it's what not to do.

[Read Now!](#)

If you have any questions pertaining to workplace exposures or how to reduce your risk(s) within your organization, contact Arrow Safety and we'll be glad to help!

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