Formaldehyde Safety



Key Takeaways:

– Understanding formaldehyde’s physical properties.
– Identifying products that contain formaldehyde.
– Identifying the routes of exposure for formaldehyde, and describe the health effects of short- and long-term exposure.
– Learning why you should not rely on your senses to alert you to the presence of formaldehyde.
– Understanding permissible exposure limit (PEL), action level, and short term exposure limit (STEL), and explain how these are used in the monitoring process.
– Recognizing the controls that workers use to protect themselves from hazardous contact with formaldehyde.
– Evaluating the best work practices that help keep workers safe when handling formaldehyde.
– Learning first aid procedures for the various types of formaldehyde exposures.

Course Description

Across the world, more than 46 billion pounds of formaldehyde are produced annually. Because it is a medical preservative and sterilizing agent, the stuff is everywhere so the risk of exposure is more prevalent than ever before.

One of the most common industrial chemicals used today is formaldehyde; classified as a volatile organic compound. Also, formaldehyde is an irritant to many workers and a known human carcinogen. Typically, it is found in liquid form.

Formaldehyde’s flashpoint is at 185 degrees Fahrenheit, which means that at this temperature and above, the formaldehyde solution produces enough vapor to create an ignitable mixture with air to produce a flame when around an ignition source; at that temp it readily catches fire. So little as an electric switch can explode.

If formaldehyde is combined with certain chemicals, it can be incredibly dangerous or even explosive, in some cases. Formaldehyde is dangerous other chemical compounds and should not be mixed with strong oxidizing agents.

The Occupational Safety & Health Administration (OSHA) describes that “…formaldehyde is a sensitizing agent that can cause a negative immune system response on exposure. It is highly irritating to the eyes, nose, and throat and can make anyone exposed cough and wheeze. Ingestion of formaldehyde can be fatal, and long-term exposure to low levels in the air or on the skin can cause asthma-like respiratory problems and

skin irritation such as dermatitis and itching. Concentrations of 100 ppm are immediately dangerous to life and health (IDLH). The National Institute for Occupational Safety and Health (NIOSH) considers 20 ppm of formaldehyde to be IDLH."

At worksites that formaldehyde is a hazard, signs need to be posted to warn employees of the danger to health and of fire and explosion. Also, every container of materials containing more than 0.1% formaldehyde should be visibly labeled in accordance with the Hazard Communication standard.

As well as posted signs and labels, other exposure controls include local exhaust ventilation, general ventilation equipment, air monitoring equipment, and alarms in areas where formaldehyde is commonly used or regularly stored.

Personal Protective Equipment (PPE) is needed while working around the possibility of permissible formaldehyde exposure levels. Your company can require safety clothing, chemical safety goggles, gloves, and respirators, and whenever working with formaldehyde, this gear must be readily available for those who want to use it.

While you have the potential to be exposed to formaldehyde, follow these safe work practices to minimize your exposure.
– Use the Safety Data Sheet to learn the hazards of formaldehyde and how to protect yourself.
– Maintain immediate access to, and know how to use, an emergency escape breathing apparatus in the event of a spill or release.
– Signal necessary alarms and immediately report all detectable formaldehyde leaks to your supervisor as prescribed in your company's emergency action plan.
– Memorize your company's emergency evacuation plan, including alarms.
– Stay upwind from all formaldehyde leaks.
– Follow company's procedures for safe removal of formaldehyde contaminated clothing.

In the case that an accidental spill and release occurs, you should first evacuate the affected area of all personnel. If there is a large spill or large release, stay away from contaminated areas. When a large spill occurs, sound the alarm, evacuate, and isolate the area.

Use a non-combustible absorbent material such as earth or dry sand to clean up small spills that involve less than one gallon. After the spill is absorbed, place the absorbent material in a chemical waste container.

Don't forget to rinse and repeat for all manner of exposures. In the case that formaldehyde splashes into your eyes, flush them immediately with large amounts of water for 15 to 20 minutes. While you flush, lift the lower and upper lid, then get medical attention immediately. When high concentration formaldehyde solutions contacts your skin, quickly flush the contaminated skin with water, proceeding to wash with soap and water. In the case that high concentration formaldehyde solutions penetrate through your clothing, immediately remove the clothing and flush your skin with water.

In the circumstance that a person inhales large amounts of formaldehyde, move everyone that is exposed to fresh air at once. Keep them warm and at rest. As soon as possible, call 911 or follow your company's established emergency response procedure to get medical attention.

When formaldehyde is swallowed, give the conscious victim milk, activated charcoal, or water to drink. Again, keep them warm and at rest. As well, keep the head of the victim lower than the hips if they're vomiting. Immediately get medical attention.