Healthcare: Formaldehyde Safety



What's at Stake?

Consider the following story…

During a busy shift, an OB technician helped with many crash deliveries and operations. Consequently, surgical instruments and trays that should have been washed, piled up on the sink counter and eventually knocked over a gallon jug of 4% formaldehyde. The employee was in and out of the utility room, doing the dishes between surgeries, and noticed that her throat was sore.

Toward the end of her shift, she discovered the formaldehyde spill. By the end of her shift, she had difficulty breathing and reported to the emergency room. The next day, her throat had swollen nearly closed. She went to two other clinics that day and the day after. The doctors tried to open her throat with medicine, but it irritated her stomach. Eventually, she saw a toxicologist who put her on medical removal from work.

What's the Danger?

- Formaldehyde is a sensitizing agent that can cause an immune system response upon initial exposure. Sensitization is an allergic reaction to a chemical agent due to previous contact with that material. Once sensitized, the allergic reaction is often more severe than after the initial contact and may not be limited to the site of exposure.
- Typical allergic reactions to formaldehyde include headache, skin rashes, and irritation of the eyes, nose and upper respiratory system.
- 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.
- Formaldehyde is a carcinogen – specifically, lung cancer and nasopharyngeal cancer.
- Ingestion of formaldehyde can be fatal.

How to Protect Yourself

Keep yourself in the know:

1. Routes of exposure

    - Inhalation of gas or vapor
    - Absorb through skin
    - Ingestion

2. Signs of exposure

- Watery eyes
- Burning sensations in eyes, nose and throat
- Skin rashes
- Nausea
- Coughing
- Chest tightness

Protect yourself on the job:

1. Check for ventilation – local exhaust, general exhaust.
2. If you can, substitute for less a hazardous chemical or use smaller amounts.
3. Don't eat or drink, chew gum, use lip balms, or cosmetics in a or area where formaldehyde is used.
4. Pay attention to safety data sheets, signs, and labels.
   - Make sure you've read the SDS prior to using formaldehyde.
   - Label all mixtures, solutions, or materials according to regulations.
   - For instance, materials capable of releasing formaldehyde at levels above 0.5 ppm during normal use, must contain the words "potential cancer hazard" on the label.
5. Know the location of emergency equipment
   - Locate safety showers, emergency eye wash stations, and spill kits BEFORE an incident.
   - Don't block emergency equipment or emergency exits.
6. Inspect PPE before use, checking for holes, cracks and damage.
   - Lab coat or coveralls should be worn.
   - Nitrile gloves are the best choice, but neoprene gloves work as well. Be sure to change gloves frequently and wash your hands after you remove your gloves.
   - Goggles and face shield are required if there's a potential splash hazard.
   - A respirator may be required.
   - Store all PPE away from sources of formaldehyde. Formaldehyde vapors can permeate the lab coat or glove material, reducing its barrier-properties.

Be empowered! Know your employer's responsibility.

Employers must:

1. Train all workers exposed to formaldehyde concentrations of 0.1 ppm or greater at the time of initial job assignment, annually, and whenever a new exposure to formaldehyde is introduced into the work area.
2. Identify all workers who may be exposed to formaldehyde at or above the action level or STEL (short-term exposure limit) through monitoring and determine their exposure.
3. Provide medical surveillance for all workers:
   - Exposed to formaldehyde at concentrations at or above the action level or exceeding the short-term exposure limit.
   - Who develop signs and symptoms of overexposure; and for all
   - Workers exposed to formaldehyde in emergencies.
1. Employers must reassign workers who suffer significant adverse effects from formaldehyde exposure. Workers must be assigned to jobs with significantly less or no exposure until their condition improves.
2. Lastly, employers are required to keep medical records and allow access as directed.
   - Retain exposure records for 30 years.
   - Retain medical records for 30 years after employment ends; and
   - Allow access to medical and exposure records to current and former workers or

their designated representatives upon request.

Final Word

Although commonly used in many, many industries, work with formaldehyde comes with many potential hazards and should be treated with great care when in use.