

FORMALDEHYDE

Formaldehyde is used in research and clinical support laboratories throughout Yale University. Any solution containing greater than 0.1% formaldehyde is considered to be a formaldehyde solution and is classified as a carcinogen. Anyone working with formaldehyde where potential exposures may exceed 0.1ppm must be trained annually in accordance with OSHA's formaldehyde standard (29CFR1910.1048). A copy of this standard is available from the OEHS office and at OSHA's web site at www.osha.gov.

OSHA has assigned the following exposure limits for formaldehyde:

8-hr permissible exposure limit (PEL): 0.75ppm

8-hr action limit (AL): 0.5ppm

15-minute short-term exposure limit (STEL): 2ppm

Initial exposure monitoring has been conducted in areas throughout campus to determine whether these limits are exceeded. To date, no areas regularly exceed these levels, and therefore full program compliance has not been required.

If a work area were in excess of any of these limits, a full formaldehyde compliance program, including medical surveillance, more extensive exposure monitoring, establishment of regulated areas, and a respiratory protection program would be required to be in place for your area.

Health Effects

Formaldehyde has been shown to be a nasal and lung carcinogen, and is highly irritating to the skin, eyes, and respiratory system. Direct skin contact can cause white discoloration, and drying, cracking, or scaling. Prolonged and repeated contact can cause numbness and hardening of the skin. It's vapors can cause tearing of the eyes and burning of the nose and throat. It is also a skin sensitizer, and may cause allergic dermatitis or hives on previously exposed persons. Any of these symptoms should be immediately reported to your supervisor and/or Health Services.

Engineering Controls

Local exhaust is the most effective means for controlling exposure where the potential for inhalation of formaldehyde vapors exists. The exhaust must draw the vapors away from the breathing zone and be exhausted to the outside. Since the odor threshold for formaldehyde ranges from 0.2- 0.8 ppm, no formaldehyde odor should be present with the use of effective ventilation.

Personal Protective Equipment

Personal protective equipment (PPE) must be worn to prevent any contact of unprotected skin with formaldehyde. Nitrile exam-style gloves are recommended for most laboratory-scale work with formaldehyde. Utility-grade nitrile or butyl rubber gloves are recommended for larger scale work with formaldehyde when direct contact with formaldehyde is more likely to occur. Tight-fitting chemical goggles should be worn to protect the eyes from splashes and from formaldehyde vapors, and a face shield should be worn as necessary for splash protection. A laboratory coat, apron, or gown should also be worn to protect the clothes and body from contact with formaldehyde. Respiratory protection for formaldehyde is required if the exposures are anticipated to exceed OSHA's exposure limits. Anyone who wears a respirator must be properly trained by OEHS and in accordance with the University's Respiratory Protection Program.

Spills and Emergencies

Area staff, providing that respiratory protection is not required for the cleanup, can clean up small incidental spills which occur during the course of ordinary work. Work from the perimeter inwards, and absorb spilled liquid with paper towels or absorbent. Collect absorbed material into heavy plastic bags, and seal and label them for collection as hazardous chemical waste. If you feel at all uncomfortable, follow the procedure for large spills.

Large spills (i.e., liter quantities and greater) and any incident that causes a potential over-exposure should immediately be communicated to emergency responders. Leave the area and summon emergency assistance by dialing 111 from any Yale telephone.

A copy of Yale University's Formaldehyde Program has been distributed to all affected departments and is also available from the OEHS office or its web site at www.yale.edu/oehs.

Yale University

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