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TechneTrain Inc., Milford, Ohio, specializes in making complex training concepts simple enough for any audience.

Materials needed to conduct a formaldehyde monitoring test can be ordered from TechneTrain. 1.800.852.8314



Editor's note: Thanks to Everly Funeral Home, Fairfax, Virginia, where funeral director and embalmer Jeffrey Walley allowed us to photograph their OSHA-compliant equipment and facilities.

Whether employees are working with chemicals in the maintenance shed or in the embalming room, it is the manager's responsibility to ensure their safety. Review your company's program for meeting OSHA requirements, and learn what the additional requirements are for employees dealing with formaldehyde.

# Protecting employees from hazards, and your firm from OSHA citations

Violations of OSHA hazard communication and formaldehyde regulations constituted nearly one-third of all OSHA citations in funeral service and crematory operations from October 2003 to September 2004.

The Hazard Communication Standard is the OSHA regulation that requires proper evaluation and communication to employees of all hazards involving chemicals used or produced at the workplace.

Formaldehyde is subject to its own regulation above and beyond that standard, which we will deal with in depth after first reviewing the standard for all chemical hazards.

## The hazard communication standard

The foundation for your hazardous materials management program starts with your hazard communication program. Issued on August 24, 1987, the Hazard Communication Standard is intended:

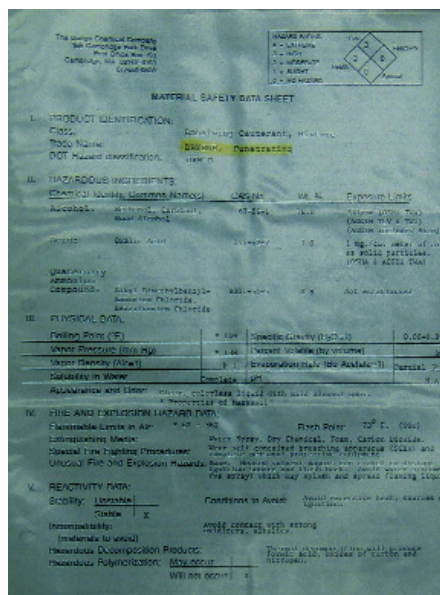
"... to ensure that the hazards of all chemicals produced or imported are evaluated, and that the information concerning their hazards is transmitted to employers and employees. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets and employee training."

## OSHA requirements for hazard communication

Under the provisions of the law, each employee who works with hazardous chemicals will receive information about those chemicals through a comprehensive hazard communication training program.

Chemical manufacturers and importers are required to evaluate the hazards of the chemicals they produce or import, and must transmit the information to employers using those chemicals via labels on containers, Material Safety Data Sheets (MSDS) and training.

The law is designed to ensure that all employees receive the information they need to inform their employees properly, and to design and implement



Everly keeps Material Safety Data Sheets in a binder.

employee protection programs. In addition, it will provide necessary hazard information to employees so they can meaningfully participate in and support the protective measures instituted in their workplaces.

The goal of every hazard communication program is to reduce the incidence of chemical source illnesses and injuries in the workplace.

Employers are required to protect their workers, both by managing the work environment and by providing employees with training regarding any job-related health effects and chemical hazards they may face from toxic substances, and safe work practices with respect to those hazards.

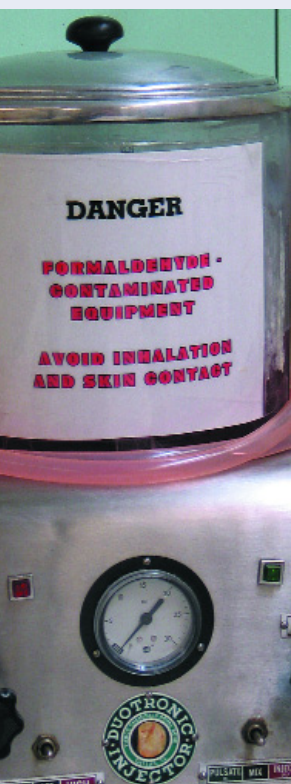
## How OSHA interprets this law

You must train employees before they are exposed to any hazardous chemicals. Training must be done each time a new hazard is introduced into the work area, or whenever an employee is assigned to a new work area.

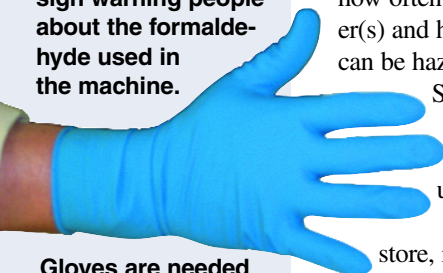
A substance-specific Material Safety Data Sheet must be available for all substances, and products must be properly labeled. Giving an employee an MSDS to read



No, Jeffrey Walley is not auditioning for the “War of the Worlds” remake, he’s modeling the mask he uses when he needs more protection than that afforded by safety goggles and a simple mask over the mouth and nose.



On the embalming equipment is a large sign warning people about the formaldehyde used in the machine.



Gloves are needed to protect the hands during embalming.

does not satisfy the intent of the law with regard to training. The training:

- must cover the hazards of the chemicals in the work area,
- must review how the employer controls these hazards through its hazard communication program,
- must allow employees to ask questions,
- could include a short test, for documentation purposes, and,
- in some states, must be repeated every year.

Employers are responsible for protecting their employees from all hazardous chemicals known to be present, including any that contractors bring on-site. To ensure such chemicals are addressed, contracts should include provisions for obtaining Material Safety Data Sheets and require that all contractors’ materials be labeled.

Companies must have a right-to-know program, as outlined on page XX.

### Making your hazardous chemical inventory

To identify which chemicals in your workplace need to be included in a hazardous chemical inventory, first study the label on each product. This must be done on all containers, regardless of size. Hazardous chemicals can be found in containers ranging in size from 2 ounces to a 55-gallon drum. The warning words to look for: HAZARD; WARNING; DANGER; CAUTION.

If any one of these warnings appear, the chemical must be listed on your inventory. Manufacturers’ labels are not consistent, and the warning information will not always be found in the same place on the label. Inspect each label carefully to determine if the product is hazardous.

To conduct a workplace inventory, walk through and identify chemicals by department, and list all chemicals or hazardous materials observed. Consult the purchasing department for a list of any additional chemicals, and review Industrial Hygiene Accident Reports, if any.

Evaluate your building materials for asbestos. Include PCBs in transformers, if any are on site. Be sure to consider any by-products or intermediates given off by operations performed in the workplace.

Once you have identified which products contain hazardous chemicals, you should include the complete chemical trade name, the name of the manufacturer, how often the chemical is used, the size of the container(s) and how much is stored on your list. If a product can be hazardous, you must have a Material Safety Data

Sheet on file. To obtain an MSDS, you must contact the manufacturer or distributor in writing. In requesting an MSDS, be sure to use the exact trade name.

If a product can be purchased at a retail store, it may not need to be put on your list, and an MSDS may not be needed. However, a product needs to be listed if it is used more frequently or in a

different manner than normal.

### Personal protective equipment

Wherever hazards of processes or environment could cause injury or impairment in the function of any part of the body if absorbed, inhaled or touched, personal protective equipment must be worn. This may include protective equipment for eyes, face, head and extremities, protective clothing, respiratory devices and protective shields and barriers.

This equipment must be selected, provided and maintained by the employer. Where employees provide their own protective equipment, the employer is responsible for assuring its adequacy, including proper maintenance and sanitation of the equipment. All personal protective equipment must be of safe design and construction for the work to be performed.

Appropriate respirators must be used where there is atmospheric contamination by harmful dusts, fogs, fumes, mists, gases, smokes, sprays or vapor that is not controlled by accepted engineering means (i.e., enclosure, ventilation, substitution of less toxic materials).

The employer must provide respirators that are applicable and suitable for the purpose intended, and is responsible for establishing and maintaining a respiratory protective program. The employee must use the provided respiratory protection in accordance with instructions and training received.



### Dealing with formaldehyde

Formaldehyde is a sensitizing agent that can cause an immune system response upon initial exposure. It is also a human carcinogen linked to nasal cancer and lung cancer.

Formaldehyde can be inhaled as a gas or vapor, or absorbed through the skin as a liquid. Acute exposure is highly irritating to the eyes, nose and throat, and can cause coughing and wheezing. Subsequent exposure may cause severe allergic reactions of the skin, eyes and respiratory tract.

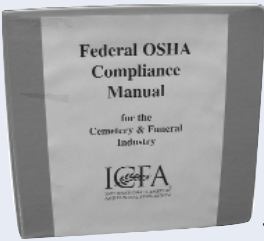
Airborne formaldehyde can cause irritation of the respiratory tract, the severity of which worsens as concentrations increase. Ingestion of formaldehyde can be fatal, and long-term exposure to low levels on the skin can cause skin irritation, such as dermatitis and itching.

Embalmers are exposed to formaldehyde at concentrations averaging up to 9 parts per million during embalming.

Short-term exposures at levels up to 5 ppm cause eye, nose and throat irritation. At levels from 10 to 20 ppm, formaldehyde exposure causes cough, chest tightness and unusual heart beat. Exposures from 50 to 100 ppm cause fluid on the lungs, followed by death. Concentrations of 100 parts per million are immediately dangerous to health or life.

Long-term exposure to low levels of formaldehyde may cause respiratory difficulty, eczema and sensitization.

The fact that formaldehyde is the subject of its own



The easy-to-read Federal OSHA Compliance Manual for the Cemetery and Funeral Industry, prepared for the ICFA by Techno-Train, can be purchased by calling the ICFA at 1.800.645.7700.

## A 9-step program you must follow

Your company must set up a right-to-know program and training sessions. The steps involved in this process:

1. Make a chemical inventory of all materials you use that contain hazardous ingredients or that can create hazards during use.
2. Obtain a Material Safety Data Sheet (MSDS) for each chemical, and maintain an MSDS file, which must be accessible to all workers on each shift. Cross-reference the list in #1 to the MSDS file.
3. Review all the MSDS sheets, and assess each for potential hazards, required protective equipment and specific training needs.
4. Prepare your written program. Keep this on file in the program manager's office.
5. Trained employees should understand what the right-to-know law says, how to read an MSDS and the types of hazards they might encounter.
6. Train your employees about the specific hazards in their workplace. You, or an industrial hygienist, should determine hazards by reviewing all of the MSDSs in #3.
7. Have employees sign a log after the training session, indicating that they attended and received the information.
8. Check labels on all listed materials to ensure that they meet the labeling requirements. Add any additional necessary information to labels prior to making such products available for use.
9. Train new employees before they start work. □

## OCCUPATIONAL SAFETY

federal regulation, Formaldehyde Standard 29 CFR 1910.1048, emphasizes the need to protect employees from exposure. The requirements of the Formaldehyde Standard are in addition to the provisions of the Hazard Communication Standard.

### Formaldehyde Protection Program

Employers are required by law to take preventive measures to protect employees from formaldehyde exposures, and must develop a Formaldehyde Protection Program, as follows:

**Employ engineering controls.** As the first step, engineering controls must be used to the maximum extent practical to eliminate or reduce employee exposures to acceptable levels. Engineering controls include enclosing and/or providing appropriate ventilation systems for operations.

Approved laboratory hoods or local exhaust ventilation can be used for all jobs involving the use of formaldehyde in embalming or other preparation.

**Monitor exposure limits.** Limits for employee exposure must be determined, and air monitoring or formal exposure assessment must be conducted. Monitoring is required unless it can be objectively documented that the operation cannot result in concentrations above the action level or short-term exposure limit under all expected conditions. Previously evaluated operations must be assessed if there is any change in procedure that may result in increased exposure.

**Provide personal protective equipment.** When engineering and work practice controls cannot reduce and maintain employee exposure to formaldehyde at or below the personal exposure limit, you must provide your employees with the proper protective equipment.

It is the employer's responsibility to select, provide and maintain this equipment, and to ensure that employees use it. Where the potential for skin and eye contact with formaldehyde exists, impervious clothing, gloves, aprons and chemical splash goggles must be worn. Showers and eyewash stations must be provided if splashing is likely.

Where airborne concentrations exceed allowable limits, respirators must be used. Respirator cartridges must be changed on a scheduled basis to prevent "bleed through."

**Provide additional training.** In addition to the applicable training requirements for hazard communication, personnel working with formaldehyde must receive annual information specifically about formaldehyde and training on their job assignments, as well as retraining □



An eyewash station and shower directly adjacent to the embalming area provide quick relief in case of an accident.

whenever a new exposure to formaldehyde is introduced to the work area.

This training must ensure employees understand the hazards of formaldehyde and the control measures chosen. Employees also must be told about the signs or symptoms associated with exposure to formaldehyde, and how to properly report them to the employer, which helps ensure the success of medical surveillance and removal programs.

**Provide medical surveillance.** Medical surveillance must be provided for personnel exposed to formaldehyde at concentrations at or above the action level, or exceeding the short-term exposure limit, for those who develop signs and symptoms of overexposure and for all employees exposed to formaldehyde in emergencies.

Employers must maintain medical records in accordance with current personnel and medical guidelines. Employers must reassign employees who suffer significant adverse effects from formaldehyde exposure to jobs with significantly less or no exposure until their condition improves. Reassignment protection can continue for up to six months, until the employee is determined able to return to the original job or unable to return to work, whichever comes first.

**Properly store and dispose of formaldehyde.** Formaldehyde products must be stored in a cool, well-ventilated area, and in accordance with any additional requirements listed in the MSDS.

Label all mixtures or solutions composed of greater than 0.1 percent formaldehyde and material capable of releasing formaldehyde into the air at concentrations reaching or exceeding 0.1 ppm. For all materials capable of releasing formaldehyde at levels above 0.5 ppm during normal use, the label must contain the words "potential cancer hazard."

Waste formaldehyde products must be stored in a labeled hazardous waste container for proper disposal, or made available for recycling, if practical. □