

# **OCCUPATIONAL HEALTH GUIDANCE FOR FUNERAL HOMES**

**Prepared by  
The Georgia Tech Safety and Health Consultation Program**



# FORMALDEHYDE

## **Hazards of Exposure to Formaldehyde**

Repeated and prolonged exposure to formaldehyde has been associated with lung and nasal passage cancers in humans. It is also highly irritating to the upper respiratory tract and eyes. Skin contact with formaldehyde, even at very low levels, can cause allergic contact dermatitis. Symptoms of this include skin redness, swelling and formation of vesicles or hives. Once an individual is sensitized, they can suffer skin reactions by being in environments where there are very low concentrations of airborne formaldehyde.

## **Compliance Requirements for Funeral Homes**

The Action Item Table in this section lists the requirements for formaldehyde that all funeral homes must meet. A critical element of compliance is to keep the exposures of your employees below the limits allowed by OSHA, and to document these exposures through air monitoring. If your monitoring results indicate that employees are over OSHA's Action Level, you should immediately make improvements to the ventilation system in your embalming room. Guidelines for improving ventilation are presented in the section of this report titled "Ventilation in Embalming Rooms." After improving the ventilation system, resample to assure that the corrective actions taken were effective. Until sampling results confirm that workers are no longer overexposed, a respirator which protects against formaldehyde must be worn. If you cannot reduce the formaldehyde air levels to below OSHA's Action Level through improved ventilation, then additional requirements apply, and we recommend that you contact Georgia Tech's Safety and Health Consultation Program or an independent industrial hygiene consultant to assist you in appropriately implementing these compliance requirements. A summary of the requirements found in the OSHA Formaldehyde standard is provided following the Action Items Table.

## Formaldehyde Exposure Action Items

Hazardous Condition or Requirement	Recommended Corrective Actions
<p>Measure the level of exposure to formaldehyde during embalming.</p> <p>29 CFR 1910.1048(d)(2)</p>	<p>To determine formaldehyde exposure, personal air samples need to be taken from the breathing zone of the embalmer (attach badges to the collar). The time-weighted average (TWA) and the short term exposure level (STEL) need to be taken on the same day and should represent the maximum exposures experienced by your embalmer during normal operation. The TWA should be an 8 hour exposure and the STEL should be a 15 minute exposure taken during the 15 minute period that you anticipate your highest exposure.</p> <p>Formaldehyde monitoring badges can be purchased through a funeral home supply company and analyzed by an AIHA accredited laboratory. Vendors of these sampling badges include the following:</p> <p><b>Kelco Supply Company</b> (800)328-7720 E-mail: info@kelcosupply.com <a href="http://www.kelcosupply.com/trans/page3.html">http://www.kelcosupply.com/trans/page3.html</a></p> <p><b>The Dodge Company</b> (617)661-0500 <a href="http://dodgeco.com">http://dodgeco.com</a></p> <p><b>Environmental Monitoring Technology, Inc.</b> (800)284-2785 <a href="http://www.emt-online.com/ProductPages/KitsFOR.htm">http://www.emt-online.com/ProductPages/KitsFOR.htm</a></p> <p><b>Pierce Chemicals Royal Bond Representative</b> (800)527-6419 <a href="http://www.piercechemicals.com/">http://www.piercechemicals.com/</a></p> <p><b>SKC</b> (800)752-8472 <a href="http://www.skcinc.com">http://www.skcinc.com</a></p> <p>We recommend that you collect air samples (8-hour and 15-minute) every three months until you have sufficient monitoring results to show conclusively that employees' exposures are consistently below the Action Level (0.5 ppm).</p>
<p>A medical surveillance program should be available for employees who develop signs and symptoms of possible overexposure to formaldehyde (such as skin or respiratory problems).</p> <p>29 CFR 1910.1048(l)(1)(ii)</p>	<p>If employees experience possible signs and symptoms of overexposure to formaldehyde, employers must make medical surveillance by a physician available. All medical surveillance described here should be provided to employees at a reasonable time and place, at no cost.</p>

## Formaldehyde Exposure Action Items

Hazardous Condition or Requirement	Recommended Corrective Actions
<p>Formaldehyde exposed workers must receive <u>annual</u> formaldehyde safety training.</p> <p>29 CFR 1910.1048(n)</p>	<p>The training program must include:</p> <ul style="list-style-type: none"> <li>▫ Discussion of the OSHA formaldehyde standard and contents of MSDS(s) you use that contain formaldehyde</li> <li>▫ Purpose of formaldehyde medical surveillance</li> <li>▫ Description of safe work practices to limit formaldehyde exposure</li> <li>▫ Purpose and proper use of protective equipment and clothing</li> <li>▫ Clean-up procedures</li> <li>▫ Importance of engineering and work practice controls to prevent formaldehyde exposure</li> <li>▫ Review of any emergency procedures, such as a spill</li> </ul> <p>A good, comprehensive training program that could be adapted for use at your facility is in Microsoft Power Point format located at <a href="http://siri.uvm.edu/ppt/97form1/">http://siri.uvm.edu/ppt/97form1/</a>.</p>
<p>We recommend that the Preparation Room entrance(s) have formaldehyde labels.</p> <p>29 CFR 1910.1048(e)(1)</p>	<p>All entrances need to be labeled saying:</p> <p>DANGER            FORMALDEHYDE            IRRITANT AND POTENTIAL CANCER HAZARD            AUTHORIZED PERSONNEL ONLY</p>
<p>Embalming machines should have formaldehyde labels.</p> <p>29 CFR 1920.1048(m)(3)(ii)</p>	<p>Embalming machine needs a label saying:</p> <p>DANGER            FORMALDEHYDE-CONTAMINATED EQUIPMENT            AVOID INHALATION AND SKIN CONTACT</p>

### **Summary of the OSHA Formaldehyde Standard**

The OSHA formaldehyde standard (29CFR1910.1048), describes the requirements for controlling worker exposures to formaldehyde. Some of the requirements include:

- Engineering and work practice controls
- Protective equipment and clothing
- Use of warning signs and labels
- Air monitoring
- Respiratory protection
- Worker medical surveillance
- Hazard communication
- Training

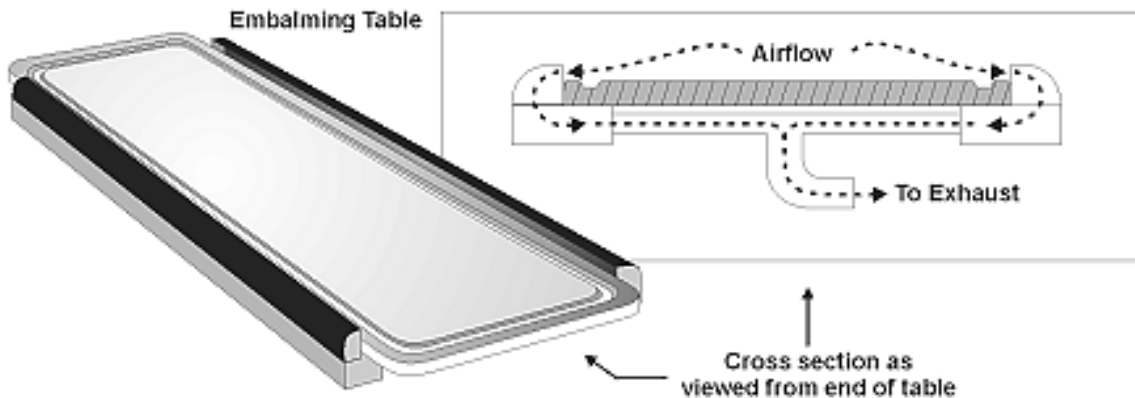
These requirements are detailed and have many components to them. They also interface with other OSHA safety and health standards. Some parts of the standard have significant application to your industry, while other components may not apply at all. If your employees are routinely overexposed to formaldehyde, and you cannot eliminate these overexposures through ventilation control or other means, then we recommend that you consult with a qualified industrial hygienist to assist you to properly implement the OSHA Formaldehyde Standard in your workplace.

## VENTILATION IN EMBALMING ROOMS

The best position for supplied air is above the head of the worker, coming down, and exhausting through the floor or near the floor. The next best option is for supplied air to come from the head of the embalming table (adding a fan may increase efficiency) and the exhaust to be at the foot of the table. Ventilation requirements for funeral home preparation rooms are not specifically addressed in current existing guidelines. However, the National Mechanical Code of the Building Officials and Code Administrators (BOCA) and the Heating, Ventilation, and Air-Conditioning Handbook of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) specify ventilation criteria for autopsy rooms. These criteria for autopsy rooms can serve as useful guidelines for effectively ventilating funeral home preparation rooms.

BOCA requires a minimum of 12 air changes per hour for autopsy rooms. The BOCA Code also requires that the air shall be exhausted to the outdoors, at an approved location on the exterior of the building. ASHRAE recommends a minimum of 12 air changes per hour be supplied to autopsy rooms, and that at least two of the air changes per hour be outdoor air. ASHRAE also specifies that the room be negatively pressurized in relation to adjacent areas. The New Jersey Funeral Directors Association recommends, as an accepted industry practice, 10-15 air changes per hour for preparation rooms. A source of makeup air should also be provided in preparation rooms to prevent excessive negative pressurization and to improve air mixing within the room.

It is likely that a qualified HVAC contractor could correct these ventilation problems without a great deal of expense, and it is recommended that modifications be implemented to keep your exposures to formaldehyde as low as possible. A general notion of the ventilation system recommended is given in the diagram below, taken from a design for embalming tables from the National Institute for Occupational Safety and Health, NIOSH.



Regardless of what specifications you use for your ventilation system, it is very important that the air flow is designed so that any vapors are pulled **away** from the employees' breathing zone. Therefore, having adequate exhaust air capacity below the work surface is critical to reducing exposures to formaldehyde. If modifications are made to the ventilation system within the preparation room, ensure that ventilation testing is conducted to ensure that adequate air velocity and direction is maintained when the system is operating.

# BLOODBORNE PATHOGENS IN FUNERAL HOMES

## Introduction to the OSHA Bloodborne Pathogens Standard

Employees with occupational exposure to blood and other potentially infectious materials (OPIM) face the hazard of becoming infected with bloodborne pathogens (BBP). Because of the severe consequences of contracting diseases from these pathogens, employees who are occupationally exposed to bloodborne pathogens must be included in an exposure control plan, which is designed to eliminate or minimize employees' exposures through specific procedures, practices, controls, and training. "Universal Precautions" is an approach to infection control in which all human blood and certain human body fluids, such as semen, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids, are treated as if known to contain bloodborne pathogens.

## Compliance Requirements for Funeral Homes

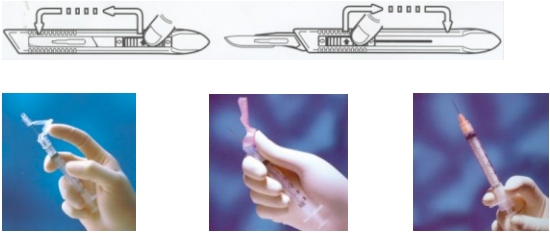
Funeral homes in which embalming is conducted must comply with OSHA's Bloodborne Pathogens standard. The requirements for compliance are listed in the following table, and additional resources are included on the CD-ROM provided with this report. Throughout this section, the following acronyms are used: BBP (bloodborne pathogens); OPIM (other potentially infectious material).

<b>Bloodborne Pathogens Action Items</b>	
<b>Hazardous Condition or Requirement</b>	<b>Recommended Corrective Actions</b>
Each funeral home that conducts embalming must develop an exposure control plan (bloodborne pathogen program) designed to minimize or eliminate employees' exposures to bloodborne pathogens.  29 CFR 1910.1030(c)(1)(iii)	Document the exposure control plan in writing. If needed, use the example written program provided on the CD-ROM accompanying this report as a model to document your program. Employees must be made aware of the written program and know where the program is kept.  The written program must be reviewed at least annually. After reviewing the program you must document your review.

## Bloodborne Pathogens Action Items


Hazardous Condition or Requirement	Recommended Corrective Actions
<p>Hepatitis B vaccinations must be offered to all employees who are potentially exposed.</p> <p>29 CFR 1910.1030(f)(1)</p>	<p>All employees who are potentially exposed to blood or OPIM must be offered the hepatitis B vaccination.</p> <p>For employees who already have had the series attempt to obtain a record that the vaccinations were performed. If records cannot be obtained then have employees sign a vaccine declination form. An example of the declination form is in the GA Tech bloodborne pathogen program.</p> <p>For the new employees who start the hepatitis B vaccination series offer the Hepatitis B vaccination titer for new employees who have not already completed the series within 1 to 2 month after they complete the vaccination series. The titer is required for those new employees who have ongoing blood exposure and have exposure to sharps.</p> <p>Note: Currently the Center for Disease Control does not recommend that you do a titer for those who are already outside of the 1-2 months after there series of vaccinations because the results may or may not be accurate. Also, they are not currently recommending that a booster shot be given. However, always follow your doctor's orders.</p>

## Bloodborne Pathogens Action Items

Hazardous Condition or Requirement	Recommended Corrective Actions
<p>The company must investigate and/or document the use of engineering controls which reflect the best bloodborne pathogen exposure control technology available (including safer disposable scalpels, blunted suture needles, and safer hypodermic syringes).</p> <p>29 CFR 1910.1030(c)(1)(v)</p> <p>29 CFR 1910.1030(d)(2)(i)</p>	<p>1. Investigate engineering and work practice controls as the primary means of eliminating or minimizing employee exposure. Preventing exposures requires a comprehensive program, including engineering controls (e.g., safer scalpels) and proper work practices (e.g., no-hands procedures in handling contaminated sharps, eliminating hand-to-hand instrument passing). <b><u>Non-managerial employees must be involved in this process and their input must be documented.</u></b></p> <p>Commercially available products that are designed to eliminate infection from SHARPS injuries must be used, including safety disposable scalpels, blunted suture needles, and safety hypodermic needles. Refer to your products distributor for commercially available products.</p> <p>There are some needles that have to be re-used but should only be used when necessary and when the safety hypodermic syringes cannot be used. Do not remove disposable needles from the syringe with forceps. Dispose of the needle <i>and</i> the syringe to reduce exposure to blood borne pathogens.</p> <p>2. Implement feasible controls</p> <ol style="list-style-type: none"> <li>3. Document the engineering control investigation</li> <li>4. You must review the safer devices at least annually to determine if newer technology is available.</li> </ol> <p><b>Examples of Safer Sharps Devices</b></p> 

<b>Bloodborne Pathogens Action Items</b>	
<b>Hazardous Condition or Requirement</b>	<b>Recommended Corrective Actions</b>
<p>Protect workers from puncture wounds caused by syringes, scalpels, suturing needles, and other “sharps.”</p> <p>29 CFR 1910.1030(d)(2)(vii)</p>	<p>Use syringes, scalpels, suturing needles, and other “sharps” which are specifically designed to prevent puncture wounds. If a needle must be recapped, placing a needle cap into a stationary cap holder, and sliding the needle into the holder using one hand would eliminate the risks of two handed recapping of needles. Do not leave the exposed needle on the instrument tray.</p> <p>Avoid handing uncapped syringes between personnel. Use a needle disposal containers equipped with devices to secure the needle while the syringe is unscrewed to eliminates handling of the needle during removal from the syringe.</p>
<p>A post-exposure evaluation and follow-up procedure must be in place in the event of an employee’s exposure to blood or OPIM, and specifically in the event of a puncture wound from a suturing needle.</p> <p>29 CFR 1910.1030(f)(3) &amp; 29 CFR1910.1030(f)(3)(iv)</p>	<p>Following the report of an exposure incident, provide a <b>confidential</b> medical evaluation and follow-up to the affected employee. This should include identification and documentation of the disease status of the source individual (the corpse) if this can be obtained. The employees must be sent to a <u>medical facility</u> that is capable of providing treatment in accordance with the latest CDC guidelines for the post-exposure care of individuals who have been exposed to human blood or other potentially infectious bodily fluids.</p>
<p>Employees must use “Universal Precautions” with all corpses.</p> <p>29 CFR 1910.1030(d)(1)</p>	<p>Ensure that all employees are adequately trained to understand the concept of "universal precautions" and use them in all procedures where there is potential for contact with bloodborne pathogens---specifically, every time an embalming is done.</p>
<p>Drinking (coffee) and eating must not be allowed in work areas (including the embalming room) where there is a reasonable likelihood of exposure to blood or OPIM.</p> <p>29 CFR 1910.1030(d)(2)(ix)</p>	<p>Ensure food and drink is not allowed in the embalming room, as well as, applying cosmetics or lip balm, and handling contact lenses in areas with a likelihood of exposure.</p>

<b>Bloodborne Pathogens Action Items</b>	
<b>Hazardous Condition or Requirement</b>	<b>Recommended Corrective Actions</b>
<p>The facility must have a written housekeeping schedule for those areas which may be contaminated with blood or OPIM.</p> <p>29 CFR 1910.1030(d)(4)(i)</p>	<p>Determine and implement an appropriate written schedule for cleaning and decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the area. All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials.</p>
<p>Only products or chemicals that are listed by the EPA or FDA as registered disinfectants or sterilants may be used to decontaminate surfaces or instruments that have been contaminated with blood or OPIM.</p> <p>29 CFR 1910.1030(d)(4)(ii) 29 CFR 1910.1030(d)(4)(ii)(A)</p>	<p>Check the label to ensure that you are using on products or chemicals that are listed by the EPA or FDA as registered disinfectants or sterilants to decontaminate surfaces or instruments that have been contaminated with blood or OPIM. As is true with all disinfectant products, the effectiveness is governed by strict adherence to the instructions on the label.</p> <p>A mixture of 1 part sodium hypochlorite (household bleach) to 10 to 100 parts water is considered adequate for surfaces (made up daily).</p> <p>All instruments must be disinfected with either EPA or FDA approved cold sterilants after each use.</p> <p>NOTE: <i>Scrubbing Bubbles®, Mr. Clean®, Pinesol and other similar products are not to be used for decontamination of work surfaces because they are not registered disinfectants.</i></p> <p><i>Also, Reusable instruments must be properly disinfected after each use (i.e., in Cidex®); soap and water or Lysol® are not adequate for disinfecting contaminated instruments.</i></p>
<p>Use tongs or forceps to reach into the cleaning containers to pick up sharps.</p> <p>29 CFR 1910.1030(d)(3)(xi)(E)</p>	<p>Reusable sharps that are contaminated with blood or other potentially infectious materials should not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed. Provide and require the use of tongs or forceps for this task.</p>

<b>Bloodborne Pathogens Action Items</b>	
<b>Hazardous Condition or Requirement</b>	<b>Recommended Corrective Actions</b>
<p>Scrub sponges and other potentially contaminated instrument cleaning tools must be stored properly.</p> <p>29 CFR1910.1030(d)(4)(ii)(A)</p>	<p>Place the scrub brush and other cleaning tools into a closeable container. The container must be labeled with a biohazard symbol or you can use a red container to identify it as a biohazard.</p>
<p>Attach a biohazard warning label to containers of potentially infectious material.</p> <p>29 CFR 1910.1030(g)(1)(i)</p>	<p>All contaminated articles should be labeled, including the instrument tray, mop and bucket, trash cans used for biohazard storage, and bags used for storing reusable clothing, towels, sheets, refrigerators and freezers containing blood/OPIM; and other containers used to store, transport or ship blood/OPIM. The warning label must be red or orange in color with a biohazard symbol and lettering in black as illustrated below:</p> 
<p>Trash cans used for containment of biohazards must be lined with biohazard bags. The regulated waste must be placed in a container that can be closed or covered with a lid.</p> <p>29 CFR1910.1030(d)(4)(iii)(B)(1)(iii)</p>	<p>If the trash is bio-contaminated then you must put a red biohazard bag in the trashcan and a biohazard sticker on the outside</p> <p>It is recommended that you use trashcans with foot pedal operation for the lid to prevent contaminating the lid with blood or OPIM.</p>
<p>Sharps containers must be easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used.</p> <p>1910.1030(d)(4)(iii)(A)(2)(i)</p>	<p>The sharps container can not be stored in a manner that limits its accessibility. This is to ensure that an employee will not be stuck while trying to place a sharp in the sharps container. Sharps containers should not be placed on the floor, or on countertops where upper cabinets obstruct access.</p>

## Bloodborne Pathogens Action Items

Hazardous Condition or Requirement	Recommended Corrective Actions
<p>Employees with occupational exposure to bloodborne pathogens must be trained on the safety procedures related to blood or OPIM.</p> <p>29 CFR 1910.1030(d)(3)(viii)</p>	<p>Provide training identified in the sample bloodborne pathogen sample program( in the appendix) for each exposed employee. Training must be provided before initial exposure, and at least yearly thereafter. This training must provide site specific training as it relates to the exposure control plan and post-exposure evaluation and follow-up.</p> <ol style="list-style-type: none"> <li>1. Employee training records must include the following:               <ol style="list-style-type: none"> <li>a) the dates of the training sessions;</li> <li>b) the contents or a summary of the training sessions;</li> <li>c) the names and qualifications of the persons conducting the training; and</li> <li>d) the names and job titles of all persons attending the training sessions.</li> </ol> </li> <li>2. Training records must be maintained for at least 3 years from the date of the training. Make sure that your training program covers all the elements required by OSHA as specified in the bloodborne pathogens standard.</li> </ol>
<p>Although not required by OSHA for <u>funeral homes</u>, a log to document sharps related injuries is recommended.</p>	<p>The sharps injury log must include:</p> <ol style="list-style-type: none"> <li>1. The type and brand of device involved in the incident</li> <li>2. The department or work area where the exposure incident occurred</li> <li>3. An explanation of how the incident occurred</li> </ol>

## (CHEMICAL) HAZARD COMMUNICATION PROGRAM

### Introduction to the OSHA Hazard Communication Standard

Companies using hazardous chemicals must implement a “Hazard Communication Program” for their facilities. The purpose of the program is to provide employees with information necessary to protect themselves from the physical and health hazards associated with using the chemicals.

### Compliance Requirements for Funeral Homes

Funeral homes use hazardous chemicals for embalming, disinfecting surfaces and equipment, and for other purposes. The compliance requirements for OSHA’s Hazard Communication standard are given in the following table. Please be aware that this OSHA standard refers specifically to CHEMICAL hazards, and is not intended to cover ALL hazards in the workplace. Of the chemicals used in the funeral home business, you should pay particular attention to embalming fluids, and to the chemicals used for disinfecting equipment and surfaces. Products with formaldehyde require special training, which is specified in the section of this report concerning the OSHA Formaldehyde standard.

<b>Hazard Communication Action Items</b>	
<b>Hazardous Condition or Requirement</b>	<b>Recommended Corrective Actions</b>
Document the hazard communication program for your facility in writing.  29 CFR 1910.1200(e)(1)	Document a hazard communication program specific to your facility. Address how labeling, MSDSs, and training requirements will be met and include a list of hazardous chemicals used at the facility.  To assist you in establishing your program, a model hazard communication program is found on the CD mailed with this report. A paper copy is also available at your request.
In your written hazard communication program, list all of the hazardous chemicals used at your facility.  29 CFR 1910.1200(e)(1)(i)	Develop a list of all hazardous chemicals in the facility and keep it with the written program. Update the list whenever new hazardous chemicals are brought into the facility.
Ensure that all containers of hazardous chemicals are properly labeled  29 CFR 1910.1200(f)(5)(i) and (ii)	Ensure that all containers of hazardous materials entering the facility are appropriately labeled with the name of the material, a hazard warning, and name and address of the manufacturer or other responsible party. If hazardous materials are transferred to a container other than the original, ensure that the secondary container has a label with identity and hazard warnings.
Obtain an MSDS for each hazardous chemical used at the facility.  29 CFR 1910.1200(g)(8)	Obtain and maintain a file of MSDSs for all hazardous chemicals used at the facility. They can be obtained from the manufacturer, distributor, or supplier.

<b>Hazard Communication Action Items</b>	
<b>Hazardous Condition or Requirement</b>	<b>Recommended Corrective Actions</b>
<p>Train all employees about the hazards of the chemicals with which they worked.</p> <p>29 CFR 1910.1200(h)(1)</p>	<p>Train employees about the hazardous chemicals present in their work area. Train them at the time of initial assignment to a job using hazardous chemicals and whenever a new hazardous chemical is introduced.</p> <p>NOTE: Formaldehyde hazard training must be repeated annually.</p>

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

### Introduction to the OSHA Personal Protective Equipment Standard

All employers are required to make an assessment of the hazards in their workplaces. For any hazards identified, the employer must certify that the PPE which has been selected is that which is most appropriate to the hazard. Additionally, employers must certify that employees have been properly trained to use the PPE.

### Compliance Requirements for Funeral Homes

Consult the material safety data sheets (MSDS) to determine proper PPE when handling any given chemical. It is recommended that embalmers using solutions containing formaldehyde wear the following PPE: coveralls, shoe covers, gloves, chemical goggles, face shield, head cover and surgical mask. Coveralls, aprons, or gowns need to have full sleeve coverage and be impervious to blood, formaldehyde, and other chemical agents. If air sampling indicates that exposures to formaldehyde during embalming exceed the limits permitted by OSHA, then a respirator which protects against formaldehyde must be worn.

<b>Personal Protective Equipment Action Items</b>	
<b>Hazardous Condition or Requirement</b>	<b>Recommended Corrective Actions</b>
<p>Assess the tasks conducted at the funeral home to determine what PPE is needed.</p> <p>29 CFR 1910.132 (d)(1)</p>	<p>Conduct a PPE hazard assessment of your workplace. You must also document, in writing, that the assessment has been completed.</p> <p>To assist you in establishing your program, a model PPE assessment is found on the CD. A paper copy is also available at your request.</p>
<p>Where the use of PPE is required, train the employees who must wear the PPE.</p> <p>29 CFR 1910.132 (f)(1)</p>	<p>Provide employees with site-specific training on:</p> <ul style="list-style-type: none"> <li>(i) When PPE is necessary;</li> <li>(ii) What PPE is necessary;</li> <li>(iii) How to properly put on and take off, adjust, and wear PPE;</li> <li>(iv) The limitations of the PPE; and,</li> <li>(v) The proper care, maintenance, useful life and disposal of the PPE.</li> </ul> <p>Document that employees have received and understood training on PPE.</p>

<b>Personal Protective Equipment Action Items</b>	
<b>Hazardous Condition or Requirement</b>	<b>Recommended Corrective Actions</b>
<p>Wear gloves that are designed for protection against the hazards found in the embalming room.</p> <p>29 CFR 1910.138(a)</p>	<p>Nitrile or butly gloves are recommended for exposure to formaldehyde-containing solutions. Other materials (natural latex rubber, PVC, or polyethlyene) may be suitable for short immersion periods, but these gloves may have to be changed more frequently than gloves made of nitrile or butyl, due to material degradation. Consult with glove manufacturers, or the MSDS for the chemical, to ensure that the gloves you select provide proper protection against formaldehyde and blood exposures. Barrier creams are not regarded as effective protection for formaldehyde, since there is no data demonstrating their efficiency.</p> <p>For tasks that have a high risk of cut or puncture injuries, gloves with an interposed layer of cut-proof synthetic mesh should be considered.</p>
<p>Wear eye protection that is appropriate to the hazards in the embalming room.</p> <p>29 CFR 1910.133 (a)(1) &amp; 29 CFR 1910.1048(h)(1)(iii)</p>	<p>Provide eye protection that is appropriate to the tasks being conducted, and to the chemicals in use. The eyes should always be protected whenever using formaldehyde, and if there is a risk of a splash or of an overexposure to formaldehyde vapors, then both a face-shield and goggles must be worn. For other chemicals, consult the MSDS for guidance.</p>
<p>Provide an emergency eyewash and shower in the embalming room.</p> <p>29 CFR 1910.151(c)</p>	<p>Install an emergency eyewash/shower. The location should be no more than 10 seconds of level, unobstructed travel time from anticipated exposure points. One hundred feet can be traveled in 10 seconds if the workplace has no obstacles.</p>

### **Guidelines for Emergency Showers and Eyewashes**

- (1) **Initiation:** One hand, one action. Once initiated, flow continues, leaving both hands free.
- (2) **Location:** Units should be located so that they can be reached by a worker within 10 seconds of level unobstructed travel. Eyewashes positioned 34" - 39" high, showers approximately 82" high, with 67" high activation (maximum), positioned 23" (maximum) off center from shower head. Location must be clearly marked, well lighted, and easily accessible, i.e., no obstacles, doorways, or turns.
- (3) **Water quality:** Potable, temperature (60-100 degrees F, ideally 90-95 degrees F). Pressure (eyewash 30 psi at supply line, shower 30 psi), amount (eyewash 3 gallons/minute for 15 minutes minimum, shower 30 gallons/minute for 15 minutes minimum), maintenance (float-away covers or means to prevent contamination; flush units weekly for a minimum of 3 minutes; bump test eyewashes daily, showers weekly; full flow testing monthly).
- (4) **Training: Routine drills advisable.** As a minimum, employees must know the location and proper use of eyewashes and showers (i.e., initiate, remove contaminated clothing, flush full 15 minutes, etc.).