University of Rochester

HAZARD COMMUNICATION PROGRAM
for
FORMALDEHYDE IN THE WORKPLACE

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HAZARD COMMUNICATION PROGRAM
for
FORMALDEHYDE EXPOSURES
IN THE WORKPLACE

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I. GENERAL POLICY AND PURPOSE

The purpose of the OSHA Formaldehyde Standard (CFR 1910.1048) is to ensure that employees are not exposed to dangerous concentrations of formaldehyde and to make employees aware of the potential hazards of the chemical. High concentration of formaldehyde (37%) can cause severe skin burns and eye damage. Lower concentrations (10%) are highly irritating to the eye, nose and throat, and can cause respiratory irritation. Chronic exposures to formaldehyde containing materials can result in allergic sensitivity and/or nasopharyngeal cancer.

The main methods of conveying information to employees on the hazards of formaldehyde is in the form of labels and Safety Data Sheets (SDSs). Labels are to be affixed to all containers of formaldehyde and paraformaldehyde solutions with specific warnings and SDSs must be available in areas where formaldehyde containing materials are used or stored.

The Environmental Health and Safety Department (EH&S) has been designated as the responsible party for administering compliance with the Formaldehyde Standard. EH&S is directly responsible for ensuring compliance and assisting supervisors with general training. The responsibilities of supervisors and Principal Investigators (PIs) are to train their staff members with tasks using formaldehyde, ensure that containers are labeled, and make SDSs available.

A copy of the University’s Written Hazard Communication Program for Formaldehyde in the Workplace is available to all U of R employees by contacting EH&S.

At the request of supervisors/PIs, EH&S will assist in developing specific work rules for certain tasks and assist in the instruction of employees. Where special facilities or personal protective equipment are required, EH&S will provide direction in selection and proper use. EH&S will also review work rules generated by departments and outside contractors for adequacy towards protecting personnel.

II. LABELS

A. Labels & other forms of warning (1910.1048) (m)(3)

All locations utilizing formaldehyde containing materials must ensure the following are labeled: formaldehyde gas, mixtures or solutions composed of greater than 0.1 percent formaldehyde and all materials capable of releasing formaldehyde into the air, under reasonably foreseeable conditions of use, at concentrations reaching or exceeding 0.1 ppm.
1. Materials capable of releasing formaldehyde into the air at levels of 0.1 parts per million (ppm) - 0.5 ppm shall be labeled, tagged/marked with the following information:
   a. The label shall identify that the product contains formaldehyde.
   b. Name and address of the product's manufacturer, importer or other responsible party.
   c. A statement that physical and health hazard information is readily available on the MSDS.

2. Materials capable of releasing formaldehyde into the air at levels above 0.5 ppm shall be labeled, tagged/marked with the following information:
   a. The label shall identify that the product contains formaldehyde.
   b. Name and address of the chemical's manufacturer, importer or other responsible party.
   c. All physical and health hazard warnings including respiratory sensitization and the words "May Cause Cancer".

3. Substitute labels containing the same information as above can be utilized. Rolls of special labels are available from Forms Management.

4. It is the responsibility of supervisors/PIs to verify compliance with these requirements and ensure that all products are properly labeled. Any questions about labeling can be referred to the EH&S at x5-3241.

5. The supervisor/PI shall ensure that existing labels on incoming containers of formaldehyde are not removed or defaced.

6. Supervisors/PIs are to perform periodic inspections of their locations where formaldehyde is used/stored to ensure compliance with the labeling requirements.
III. SAFETY DATA SHEETS (SDSs) (1910.1048) (m)(4)

A. Safety Data Sheets (SDSs) for chemicals are available through the University’s Chemical Inventory SDS System called Chematix at EH&S’s web site link https://www.rochester.chematix.com/Chematix/. During regular work hours, SDSs are also available by calling EH&S at 275-3241.

B. It is the responsibility of the supervisors/PIs to make sure that SDSs are available for new chemicals in their locations. **No chemicals shall be used until an SDS is received or available through the University’s Chemical Inventory SDS System.**

C. The supervisor/PI is to assign an individual or individuals under their direction to enter the chemical inventories into Chematix, the University’s Chemical Inventory / SDS system. Information on entering the inventories is available by contacting EH&S or by following the directions listed at http://www.safety.rochester.edu/msdsintro.html.

IV. EMPLOYEE INFORMATION & TRAINING (1910.1048) (n)

A. Training shall be performed at the initial time of assignment and whenever a new exposure to formaldehyde is introduced into the workplace. This generic training on the Formaldehyde Standard includes the following information:

1. The requirements of the Formaldehyde Standard.

2. Information on the Written Hazard Communication Program for Formaldehyde in the Workplace and how to read/use the information provided on SDSs and labels.

3. The medical surveillance program, including a description of the potential health hazards and the signs and symptoms of exposure to formaldehyde. Employees are given instructions to immediately report to the employer any adverse signs or symptoms suspected of being related to exposure to formaldehyde.

4. The purpose for, proper use of, and the limitations of personal protective clothing and equipment.

5. Requirements of the UofR’s Respiratory Protection Program.

6. Instructions for handling spills, emergencies and clean-up procedures.

7. An explanation of the importance of engineering controls and proper work
practices and how they work to limit employee exposures.

8. A review of emergency procedures and the role of individual employees in the event of an emergency involving formaldehyde.

B. Supervisors/PIs are responsible for providing specific training to their employees on formaldehyde use in their work area to addresses the following:

1. Locations in the workplace where formaldehyde is to be used and the safe work practices to limit formaldehyde exposure.

2. The availability of the University’s Written Hazard Communication Program for Formaldehyde in the Workplace and SDSs.

3. Location and availability of protective equipment such as gowns, goggles, gloves, etc. needed to protect employees from exposure.

4. Review of emergency procedures to be followed in the event of an emergency involving formaldehyde.

C. Documentation of employees trained and the training content is to be recorded at the time of the training sessions. Laboratory personnel receive the needed training through MyPath or Blackboard. This training is maintained electronically. Records for site-specific information/training are kept by the individual departments.

V. FORMALDEHYDE STORAGE/USE REQUIREMENTS

A. Patient Care Locations

1. All patient care locations where formaldehyde is used/stored must be properly ventilated. These locations shall have general ventilation that provides at least 6 air changes per hour.

2. Minimum quantities of specimen containers are to be stored in patient care treatment/examination rooms to minimize potential formaldehyde exposures. No more than 2-3-day supply of specimen containers is to be kept in these rooms. All specimen containers must have tight fitting lids and be labeled as listed in Section II.

3. Stock quantities of specimen containers are to be stored in limited access ventilated storerooms.
4. Personnel handling specimen containers are to wear nitrile gloves.

5. Those handling formaldehyde need to know the location of the nearest eyewash station in the event of a face/eye exposure with formaldehyde.

6. When using specimen container, the lid is to be removed only when a specimen needs to be placed into the container. The lid is to replaced immediately.

7. The potential of significant exposure to formaldehyde is unlikely in a patient care location. Personnel can request a workplace assessment be completed by EH&S to determine their potential exposure to formaldehyde. Based on this determination, personal monitoring may be completed.

8. Based on the workplace assessment, EH&S may determine short term (15 minute) or full shift (around 8-hours) monitoring is required. Any EH&S monitoring completed will be reported to the individual(s) being monitored as well as the individual(s) supervisor(s).

9. Monitoring results found above the Action Level, the Short Term Exposure Limit for 15-minutes, or the Personal Exposure Limit for 8-hours will require certain corrective actions that will be reported in the monitoring reports issued to the affected staff. Occupational and Environmental Medicine will be notified of any over-exposure so the individual can be enrolled into the medical surveillance program.

B. Laboratory Locations

1. All labs using formaldehyde/paraformaldehyde containing materials shall observe proper handling of chemicals as outlined in the University’s Chemical Hygiene Program.

2. All lab locations using or storing formaldehyde/paraformaldehyde shall be properly ventilated. The general ventilation shall be provided with at least 8 air changes per hour unless EH&S has determined a lower airflow rate provides adequate protection.

3. Special use locations, such as animal perfusion locations, the Morgue, and locations where cadavers are prepared, stored, or used are to be checked by EH&S to verify the ventilation and the established work practices offer adequate protection to prevent dangerous concentrations of formaldehyde or paraformaldehyde.

4. To help prevent exposures, the preparation and use of formaldehyde or paraformaldehyde solutions are to utilize local exhaust ventilation systems such as a fume hood, slot hood, or articulating air exhaust system.
5. All containers of formaldehyde or paraformaldehyde must utilize tight fitting lids to prevent the release of formaldehyde.

6. To minimize severity of spills, individual formaldehyde containers shall not exceed 5-gallon quantities for 10% formaldehyde. For 37% formaldehyde containers the largest quantity shall be one gallon (4 liters).

7. Laboratory locations shall have an operational eyewash station.

8. Formaldehyde has been found to penetrate latex gloves quickly. Personnel handling formaldehyde or paraformaldehyde shall wear nitrile gloves to minimize dermal exposures. Goggles, safety glasses or a face shield are to be utilized if there is a potential for an eye exposure.

9. Laboratory personnel can request a workplace assessment be completed by EH&S to determine their potential exposure to formaldehyde and the appropriate PPE to be utilized. Based on this determination, personal monitoring may be completed.

10. Based on the workplace assessment, EH&S may determine short term (15 minute) or full shift (around 8-hours) monitoring will be completed. Any monitoring completed by EH&S will be reported to the individual(s) being monitored as well as the individual(s) supervisor(s).

11. Monitoring results found above the action level, the Short Term Exposure Limit for 15-minutes, or the Personal Exposure Limit for 8-hours will require certain corrective actions that will be reported in the monitoring report(s) issued to the affected staff. Over-exposures will be reported to University Health Service so the individual can be enrolled in the medical surveillance program.

12. Should levels of airborne formaldehyde be found above the OSHA PEL or STEL, personnel shall implement work practices to reduce exposures. Should these practices be found insufficient to prevent dangerous concentrations of formaldehyde, respirators can be used as a temporary measure until the required engineering controls are installed.

VI. MEDICAL SURVEILLANCE PROGRAM 1910.1048 (1)

A. The University’s Medical Surveillance Program is administered for research personnel through the University Health Service (UHS). A similar program for SMH clinical employees is administered by Occupational and Environmental Medicine. The
programs are designed to medically evaluate certain groups of formaldehyde users, are administered by or under the supervision of a licensed physician and are provided without cost to the employee, without loss of pay and at a reasonable time and place. The groups eligible are:

1. Employees who are exposed to airborne formaldehyde at concentrations equal to or exceeding either the time-weighted average permissible exposure limit of 0.75 parts per million (ppm) over an eight-hour day or the Short Term Exposure Limit (STEL) of 2 ppm over any 15-minute period.

2. Any employee who develops signs or symptoms of overexposure to formaldehyde and all employees exposed to formaldehyde in an emergency.

3. Employees required to wear respirators to reduce exposure to formaldehyde.

B. The medical surveillance program consists of:

1. Administering a medical disease questionnaire. Based on the questionnaire, the physician will determine whether a medical examination is necessary for those employees who are not required to wear respirators.

2. Medical examinations include a physical examination, a pulmonary function test for respirator wearers, and any other test deemed necessary by the physician.

3. Counseling of employees who have a medical condition that may be directly or indirectly aggravated by exposure to formaldehyde and may have an increased risk of impairment of health.

4. Examinations for employees exposed to formaldehyde during emergencies.

C. Follow-up Procedures:

1. The examining physician will issue a written opinion to the employer/department that includes the results of the examination but shall not reveal any finding or diagnoses not related to formaldehyde exposure. The opinion includes whether the employee has any medical condition that would place the employee at an increased risk of material impairment of health from exposure to formaldehyde, recommended limitations for use of protective equipment and a statement that the employee has been informed of any medical conditions which would be aggravated by exposure and whether further examination or treatment is required.

2. A copy of the physician's written opinion will be provided to the affected employee within 15 days of completion.

3. Medical removal may be issued as a recommendation from the physician in
instances where an employee reports significant irritation of the mucosa of the eyes or of the upper airways, respiratory sensitization, dermal irritation or dermal sensitization attributed to workplace formaldehyde exposure. If the examining physician recommends removal of the affected employee, the University will remove the employee from the current formaldehyde exposure and, if possible, transfer the employee to a position with significantly less or no exposure. A follow-up medical exam will be given six months after removal to determine if the employee can return to the previous assignment or if the removal is permanent.

4. The employee may designate a second physician to review any findings, determinations or recommendations of the initial physician and conduct examinations, consultations and laboratory tests to complete this review. If the second physician's findings and recommendations differ from those of the first physician the University will work to have the physicians resolve the difference's or the physicians will designate a third physician to mediate.

D. All records related to the medical surveillance program will be maintained by either UHS or Occupational and Environmental Medicine.

VI. FORMALDEHYDE EMERGENCIES

A. Spill Protocol

1. Spills of formaldehyde can be classified as either minor or major spills. Minor spills involve small quantities of relatively low concentration of solutions. Examples can include quantities/volumes less than 200 ml of 10% formaldehyde solution (formalin) or 50 ml of 37% formaldehyde. Lab personnel can prevent over-exposures while cleaning up these minor spills by immediately cleaning up the spills while wearing the required personal protective equipment. The collected waste is to be handled as hazardous waste and placed into a sealable waste container for disposal through EH&S’s Environmental Compliance’s Hazardous Waste Group.

2. Some formaldehyde spills require special clean-up procedures to minimize potential health effects to personnel. Major spill clean-up, quantities/volumes greater than listed for minor spills above, should not be attempted by personnel. Personnel need to evacuate the area and:

   a. for those major spills at the Medical Center or River Campus, call Public Safety by calling x13 from a safe location. Public Safety will contact the EH&S Spill Team for a response.
B. Spill Emergency Plan

1. The following is emergency preplanning to be followed when working with formaldehyde:

   a. Determine the locations where formaldehyde spills may occur.

   b. The severity of spills can be diminished by minimizing the volume and concentration of formaldehyde containers.

   c. Use any personal protective equipment that may be needed to prevent formaldehyde exposures. This equipment includes nitrile gloves, eye protection, a garment (such as a lab coat or plastic smock), and in some cases respiratory protection. Respirators are to be used only by trained and qualified employees who are documented users in the UofR Respiratory Protection Program.

2. In the event of a minor spill, the following general procedures are to be followed:

   a. Survey the situation for the potential hazards present before approaching a spill area. If possible, attend to anyone who may be injured or has been contaminated.

   b. Notify persons in the immediate area about the spill. Evacuate non-essential personnel from the spill area.

   c. Clean up the spill as quickly as possible to avoid breathing vapors of the spilled formaldehyde.

   d. Leave all exhaust ventilation on.

   e. Package the waste for disposal through the Hazardous Waste Group.

   f. Locations can elect to purchase an agent such as Polyform-F™, designed to quickly neutralize aldehyde spills.

      1. Agents like this can quickly be sprinkled onto aldehyde spills, complex the aldehyde and prevent vapors from being released.

      2. Should an agent such as this be used, follow the directions listed on the product label. Often, sprinkling the agent onto the aldehyde,
leaving the immediate area, and waiting at least 5 minutes before cleaning up the spilled mixture will help prevent airborne aldehyde exposures. In addition, the mixture can be disposed of as non-hazardous (regular trash disposal).

g. In the event a major spill occurs, evacuate the room, close all doors to the area to prevent the spread of vapors, and follow the instructions listed in VII.A.2. above.

C. Exposures

1. Should an exposure occur to one’s eyes or face:
   a. Immediately use the eyewash station to flush the face area. Continue to flush the eyes and face for up to 15 minutes, opening and closing the eyes to assist in the removal of formaldehyde from the eyes.
   b. While using the eyewash station, a co-worker needs to notify medical services that an exposure has occurred and the individual will be seeking (phone numbers listed on page 13) for medical attention. Should the exposure occur after normal work hours, medical attention is available at Strong ED at 275-4551.

2. Research locations utilize larger quantities of formaldehyde containing materials. Should an exposure occur to one’s body:
   a. Immediately take off contaminated clothing and use the safety shower to flush the skin.
   b. While using the safety shower, someone in the location needs to contact UHS at 275-1164 to notify them that an exposure has occurred and the individual will be going to UHS for medical attention. Should the exposure occur after normal work hours, contact Strong ED at x5-4551.

3. Formaldehyde contaminated clothing must be collected for appropriate action. The clothing must never be taken home for laundering. Rather, contact EH&S at x5-3241 so the clothing can either be:
   a. Disposed of as hazardous waste
   b. Wash and dried and returned to the user free of formaldehyde.

4. The exposed individual or the supervisor/PI is to complete an Incident Report to document the incident.
**IMPORTANT PHONE NUMBERS**

**MEDICAL:**

- **Medical Emergency** (MERT response at RC or MC) x13
- **Poison Center** 1-800-222-1222
- **Strong Memorial Hospital Emergency Department** x5-4551
- **University Health Service**
  - Urgent Care x5-1164
  - General Occupational Health Information x5-4955

**EMERGENCIES:**

- **Poison Center** 1-800-222-1222
- **Strong Memorial Hospital Emergency Department** x5-4551
- **Public Safety** x13
- **Environmental Health & Safety** x5-3241

**OTHER:**

- **Safety Data Sheet Information**
  
  Available through the department of use or electronically at:
  [https://www.rochester.chematix.com/Chematix/](https://www.rochester.chematix.com/Chematix/).