SECTION 28
formaldehyde policy

SECTION CONTENTS

I. Formaldehyde Policy (p.2)
   A. Contents of the Formaldehyde Policy
   B. Policy Scope
   C. Responsibility for Implementation

II. Compliance (p.4)
   A. Role of Departmental Safety Representatives
   B. Compliance Requirements for Grant Proposal Certification

III. Exposure Limits and Monitoring (p.5)
   A. Permissible Exposure Limits
   B. Exposure Monitoring
   C. Initial Monitoring
   D. Periodic Monitoring
   E. Discontinuation of Monitoring
   F. Accuracy of Monitoring
   G. Notification of Results
   H. Observation of Monitoring
   I. Record Retention

IV. Regulated Areas (p.7)
   A. Establishing Regulated Areas
   B. Limiting Access
   C. Informing Contract Labor

V. Protective Methods (p.8)
   A. Engineering and Work Practice Controls
   B. Respiratory Protection
   C. Protective Equipment and Clothing
   D. Personal Hygiene Protection

VI. Housekeeping for Operations Involving Formaldehyde Liquids or Gas (p.12)
   A. Inspections
   B. Preventive Maintenance
   C. Spill Containment Devices
   D. Spills
   E. Disposal
   F. Injury

VII. Medical Surveillance (p.13)
   A. Employees Covered
   B. Examination by a Physician
   C. Emergency Exposure Examinations
   D. Information Provided to Physician
   E. Physician’s Written Opinion
   F. Medical Removal
   G. Multiple Physician Review

VIII. Hazard Communication (p.17)
   A. Application
   B. Labels
   C. Material Safety Data Sheets
   D. Inventory Reports
   E. Employee Training

IX. Recordkeeping (p.20)
   A. Exposure Measurements
   B. Exposure Determinations
   C. Medical Surveillance
   D. Respirator Fit Testing
   E. Record Retention
   F. Availability of Records

ADDITIONAL READING

Emergency Response Section 1
Employee Safety Training Section 3
Environmental Health & Safety Section 2
Hazard Communication Section 12

Hazardous Materials Safety Section 29
Laboratory Safety Section 30
Personal Protective Equipment Section 14

TULANE UNIVERSITY
ENVIRONMENTAL HEALTH AND SAFETY POLICIES AND PROCEDURES MANUAL
REVISION DATE: 9/1/03
I. **FORMALDEHYDE POLICY**

Formaldehyde is a colorless, polymerizable gas with a pungent odor that is used, for example, in laboratories for preserving and fixing tissues. As an irritant, formaldehyde may cause allergic symptoms and adverse health effects at very low levels. Formaldehyde is also considered a carcinogen.

Because of its hazardous characteristics, formaldehyde requires specialized handling, use, storing, monitoring, labeling, and disposal methods. In an effort to protect workers from the adverse effects associated with formaldehyde exposure, the Occupational Safety and Health Administration (OSHA) has developed a Formaldehyde Standard requiring employers to provide a specific written policy for employees who are using formaldehyde or who may be potentially exposed to formaldehyde. In fulfillment of this requirement, the Office of Environmental Health & Safety (OEHS) presents the written **Formaldehyde Policy** set forth in this section of the Environmental Health & Safety Polices and Procedures Manual thereby making it available to all employees, their designated representatives and any other parties, including contractors, wishing to review it.

As part of this manual, the Formaldehyde Policy is widely distributed to departments throughout the University, and is available on the OEHS website at [www.som.tulane.edu/oehs](http://www.som.tulane.edu/oehs). Copies may also be obtained by contacting OEHS in writing.

A. **Contents of the Formaldehyde Policy**

The Formaldehyde Policy contains details of the formaldehyde labeling policy, the Material Safety Data Sheet (MSDS) policy, exposure monitoring, medical surveillance, medical removal, permissible exposure limits (PEL), respiratory protection, protective clothing and its maintenance, emergency situations, and employee information and training. The Formaldehyde Policy supplements the Hazard Communication Policy (see, Section 12, Hazard Communication), the Chemical Hygiene Plan (see, Section 30, Laboratory Safety), policy on respiratory protection (see, Section 15, Respiratory Protection), personal protective equipment (see, Section 14, Personal Protective Equipment), and training (see, Section 3, Employee Safety Training).
B. Policy Scope

The Formaldehyde Policy applies to all occupational exposures to formaldehyde, *i.e.*, formaldehyde gas, its solutions (formalin, etc.), and materials that release formaldehyde.

C. Responsibility for Implementation

1. Initial training of supervisory level employees, survey distribution and risk determination, and monitoring shall be provided by OEHS.

2. Supervisors/principal investigators are responsible for communicating the Formaldehyde Policy to all subordinate employees who are determined by OEHS (via monitoring and surveys) to be at risk for occupational exposure to formaldehyde.

3. Supervisors/principal investigators shall be required to complete a **Formaldehyde Survey** form (*Form 01F-OEHS* in Appendix E of this manual) and employee training documentation for at risk employees under their supervision. The survey and training documentation shall be collected by the unit's Departmental Safety Representative and submitted to OEHS for review. (A unit is a department, section, center, or program, or any number or configuration of these components.)

4. Because the cost of medical surveillance shall be a necessary expense to the laboratory/unit, sufficient unit funds must be provided for this purpose. The expense of any prescribed personal protective equipment (PPE) and/or engineering controls must also be funded through departmental budgets, grants, etc.

5. Success in implementing the Formaldehyde Policy depends on the cooperation of employees who have been identified (through surveys and monitoring) and notified by OEHS as being at risk for formaldehyde exposure. Employees shall be on the alert for potential hazards of all materials in their work area, especially formaldehyde, by consulting MSDSs. Employees shall also follow appropriate work practices established to protect them from formaldehyde-related illnesses and injuries.

---

The **Office of Environmental Health & Safety** shall assist supervisors/principal investigators in establishing regulated areas where the concentration of airborne formaldehyde exceeds either the TWA or STEL. (*See, IV., Regulated Areas*, further in the section). Entrances and access ways to these regulated areas must be posted with signs bearing the following information (signs can be obtained from the):

**DANGER - FORMALDEHYDE**  
**IRRITANT AND POTENTIAL CANCER HAZARD**  
**AUTHORIZED PERSONNEL ONLY**
II. COMPLIANCE

A. Role of Departmental Safety Representatives

Departmental Safety Representatives (DSR) help to ensure that the units they represent are in compliance with regulatory standards and with the Tulane University Formaldehyde Policy set forth in this section. DSRs also collect and submit to OEHS all training documentation, formaldehyde surveys, monitoring, and other required documentation prepared by unit supervisors/principal investigators.

DSRs help ensure that the necessary measures have been taken by supervisory and other unit personnel to correct problems discovered during unit inspections. If corrections are not made despite deadlines and warnings from the DSR, the DSR shall report the unit's non-compliance to the Unit Head.

If the problem remains unresolved, OEHS shall consult with the Unit Head, and if the problem is not resolved at that point, OEHS may refer the matter to the University's Environmental Health & Safety Operations Committee for consultation.

See Section 2, Environmental Health & Safety, of this manual for information on the Compliance Management System.

B. Compliance Requirements for Grant Proposal Certification

Grant proposals that require certification of compliance with environmental health and safety regulations must be sent to OEHS for verification before grants may be funded. The Director of OEHS shall not certify a grant if the applicant is not in compliance with policies related to any of the following topics: OSHA Hazard Communication, OSHA Laboratory Standard, Animal Handler Health Surveillance Program, Fire Safety, Radiation Safety, Hazardous Waste, and Biosafety.
III. EXPOSURE LIMITS AND MONITORING

A. Permissible Exposure Limits

In the event of an emergency where permissible exposure limits (PELs) may be exceeded, the area shall be evacuated and OEHS shall be immediately contacted to implement monitoring and procedures to reduce exposure to employees, students, and spill cleanup personnel. Respirators as well as engineering controls shall be implemented by trained personnel until exposures are within the acceptable range and clearance is given by OEHS. The following are OSHA permissible exposure limits:

1. **Time Weighted Average** (TWA): No employee shall be exposed to airborne concentrations of formaldehyde that exceed 0.75 parts per million (ppm) of formaldehyde as an 8 hour TWA.

2. **Short Term Exposure Limit** (STEL): No employee shall be exposed to an airborne concentration of formaldehyde that exceeds 2 parts per million (ppm) of formaldehyde as a 15 minute STEL.

3. **Action Level**: No employee shall be exposed at or above the action level of 0.5 ppm over an 8 hour TWA without action being taken to determine and reduce exposure levels.

B. Exposure Monitoring

1. Each unit, laboratory, or work area designated by OEHS (via survey) to present a possible formaldehyde exposure risk, shall be screened to determine if actual exposure of personnel in these areas needs to be monitored. The criteria OEHS shall use to determine who will be monitored is based upon the state or form of the formaldehyde, quantity, concentration, duration and frequency of exposure, and the availability of engineering controls.

2. For areas in which there is documented and objective data that formaldehyde cannot normally result in concentrations at or above the action level (0.5 ppm over an 8 hour TWA) or the STEL (2.0 ppm over a 15 minute period) under foreseeable conditions of use, or in worst case scenarios, the measuring of employee exposure shall not be required.

3. When an employee's exposure is determined from representative sampling, the measurements used shall be representative of the employee's full shift or short term exposure to formaldehyde.
There are two types of monitoring: full shift and short term exposure monitoring. Short term entails 15 minutes of the worst-case exposure (when concentrations of formaldehyde are heaviest). Full shift entails eight hour monitoring or whatever time constitutes a full shift.

4. Representative samples of worst case scenarios for job classifications in the work area shall be taken for each shift unless OEHS determines, with documented objective data, that exposure levels for a given job classification are equivalent for different work shifts.

C. Initial Monitoring

1. OEHS shall initially conduct surveys of all laboratory and/or work area personnel to identify employees who may be exposed at or above the action level (0.5 ppm over 8 hour TWA) or at or above the STEL (2.0 ppm over a 15 minute period) and accurately determine the exposure of each employee so identified.

2. OEHS shall develop a representative sampling strategy and measure significant exposures within each job classification for each work shift to correctly characterize and not underestimate the exposure of any employee within each exposure group.

3. Monitoring shall be repeated each time an area at risk for exposure to formaldehyde changes production, equipment, process, laboratory standard operating procedures, personnel or control measures that may result in new or additional formaldehyde exposure(s).

4. Upon receipt of reports of signs or symptoms of respiratory or dermal conditions associated with formaldehyde exposure, OEHS shall promptly monitor the affected employee's exposure.

D. Periodic Monitoring

1. Employees shall be monitored periodically and their exposure to formaldehyde accurately determined if initial monitoring shows that exposure is at or above the action level or at or above the STEL.

2. If the last monitoring results reveal employee exposure at or above the action level, OEHS shall repeat monitoring at least every 6 months.

3. If the last monitoring results reveal employee exposure at or above the STEL, OEHS shall repeat monitoring at least once a year under the worst conditions.

E. Discontinuation of Monitoring

OEHS may discontinue periodic monitoring if results from two consecutive sampling periods, taken at least 7 days apart, show that employee exposure is below the action level and the STEL. These results shall be statistically representative and consistent with OEHS and the supervisor/principal investigator's knowledge of the job and work operation.

F. Accuracy of Monitoring

Monitoring shall be accurate, at the 95% confidence level, to within plus or minus 25% for airborne concentrations of formaldehyde at the TWA and the STEL, and to within plus or minus 35% for airborne concentrations of formaldehyde at the action level as per National Institute for Occupational Safety and Health (NIOSH) approved methods. Employee exposure samples shall
be analyzed at American Industrial Hygiene Association (AIHA) accredited labs whenever possible.

G. Notification of Results

OEHS shall communicate exposure monitoring results to affected employees within 15 days of receiving the results. Notification shall be in writing, either by distribution of copies of the results to employees or by posting the results. If an employee’s exposure is greater than the PEL, the supervisor/principal investigator, with the guidance of OEHS industrial hygiene and lab safety personnel, must develop and implement a written plan to reduce employee exposure to a level at or below PELs and give written notice to the affected employees. The written notice shall contain a description of the corrective action being taken by the supervisor/principal investigators of the work area to decrease exposure.

H. Observation of Monitoring

OEHS shall allow affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to formaldehyde. If such observation occurs in an area requiring protective clothing and/or equipment, the employee's laboratory/unit shall provide the required clothing and/or equipment to the observer. The observer shall be required to use these materials under advisement of OEHS to ensure that he/she complies with all applicable safety and health procedures.

I. Record Retention

Exposure records and determinations including documentation of objective data shall be kept by OEHS for at least 30 years. (See IX, Recordkeeping, below for further details.)

IV. Regulated Areas

A. Establishing Regulated Areas

B. Limiting Access

C. Informing Contract Labor

IV. REGULATED AREAS

A. OEHS shall assist supervisors/principal investigators in establishing regulated areas where the concentration of airborne formaldehyde exceeds either the TWA or STEL. Entrances and access ways to these regulated areas must be posted with signs bearing the following information (signs can be obtained from OEHS):

DANGER - FORMALDEHYDE
IRRITANT AND POTENTIAL CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
B. Supervisors/principal investigators shall limit access to regulated areas to authorized persons who have been trained to recognize the hazards associated with formaldehyde.

C. Any contract labor working in or around regulated areas must be informed of the access restrictions and locations by the area’s supervisor/principal investigator.

V. Protective Methods

A. Engineering and Work Practice Controls

1. Examples of engineering controls include local exhaust ventilation (fume hoods/slot ventilation), general dilution ventilation, emergency safety showers, and emergency eyewash stations.

2. Examples of work practice controls include a) limiting formaldehyde exposure by scheduling formaldehyde related tasks over longer time frames instead of all at once; b) employee rotation; c) leaving the area when the task is complete to allow it to air out; d) and avoiding extremely close contact with formaldehyde sources by keeping the breathing zone away from the source or path of vapors.

3. The supervisor/principal investigator, with the advice and direction of OEHS personnel, shall institute appropriate engineering and work practice controls to reduce and maintain exposures to formaldehyde at or below the TWA and the STEL.

4. When OEHS has established that feasible engineering and work practice controls cannot reduce employee exposure to or below PELs, the supervisor/principal investigator shall supply employees with respirators and other personal protective equipment.

B. Respiratory Protection

1. Policy outlined in Section 15, Respiratory Protection, of this manual shall be utilized in all areas determined by OEHS survey/monitoring to need respiratory protection for formaldehyde exposure as discussed in LA, Contents of the Formaldehyde Policy, above, in accordance with OSHA 29 CFR 1910.134 (b),(d),(e), and (f).

2. It is the supervisor/principal investigator's responsibility to ensure that all employees are provided with appropriate respiratory equipment, fit-tested, evaluated by a physician, and trained in respiratory usage. Where respiratory protection is required, the supervisor/principal investigator shall provide respirators at no cost to the employee after the employee has been
approved for respirator use following medical examination. The supervisor/principal investigator shall then ensure that the equipment is properly used as advised by OEHS. Fit testing for the proper respirator shall be conducted by OEHS. The respirators shall comply with the requirements of this policy and shall reduce the concentration of formaldehyde inhaled to a level that is at or below the TWA and the STEL.

3. **Respirators shall be used in the following circumstances:**

   a. during the interval necessary to install or implement feasible engineering and work practice controls;

   b. in work operations, such as maintenance and repair activities or vessel cleaning, for which OEHS establishes that engineering and work practice controls are not feasible;

   c. in work areas where feasible engineering and work practice controls are not yet sufficient to reduce exposure at or below the PELs; and

   d. in emergencies.

4. **Respirator Selection**

   The appropriate respirator, as specified in the "Minimum Requirements for Respiratory Protection Against Formaldehyde" table below, shall be selected by OEHS in accordance with those approved by the Mine Safety and Health Administration and by NIOSH consistent with provisions of OSHA 30 CFR Part 11.

5. OEHS shall determine the appropriate approved respirator required to prevent overexposure to formaldehyde. Any difficulties that an employee may have with respirator usage shall be addressed by OEHS and the supervisor/principal investigator.

6. **Respirator Usage**

   a. **Section 15. Respiratory Protection,** of this manual includes prescribed fit testing in accordance with OSHA, 29 CFR 1910.1048, Appendix E, “Qualitative and Quantitative Fit Testing Procedures,” and its outlined fit test protocols. Fit test records shall be maintained by OEHS until replaced by updated records *(See IX. Recordkeeping, below for details regarding recordkeeping).* Fit tests shall be performed annually.

   b. Where air purifying chemical cartridge respirators are used, the cartridges must be replaced after three hours of use or at the end of the work shift, whichever is sooner unless the cartridge contains a NIOSH-approved end-of-service indicator that shows when breakthrough occurs.

   c. Unless canisters have a NIOSH-approved end-of-service indicator, if used in atmospheres up to 7.5 ppm, they shall be replaced every 4 hours. Industrial sized canisters used in atmospheres up to 75 ppm must be replaced every 2 hours or at the end of the work shift, whichever is sooner.

   d. Supervisors/principal investigators shall permit employees to leave the work area to wash their faces and respirator face pieces as needed to prevent skin irritation from respirator use.
### MINIMUM REQUIREMENTS FOR RESPIRATORY PROTECTION AGAINST FORMALDEHYDE

<table>
<thead>
<tr>
<th>Conditions for Use of Formaldehyde Concentration (ppm)</th>
<th>Minimum Respirator Requirements¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 7.5 ppm (10 x PEL)</td>
<td>Full face piece with cartridge or canisters specifically approved for protection against formaldehyde.²</td>
</tr>
<tr>
<td>Up to 75 ppm (100 x PEL)</td>
<td>Full face mask with chin style or chest or back mounted type with industrial size canister specifically approved for protection against formaldehyde. Type C supplied air respirator, pressure demand or continuous flow type with full face piece, hood or helmet.</td>
</tr>
<tr>
<td>Above 75 ppm or Unknown (Emergencies) (100 x PEL)</td>
<td>Self-contained breathing apparatus (SCBA) with positive pressure full face piece, combination supplied air respirator, full face piece positive pressure respirator with auxiliary self-contained air supply.</td>
</tr>
<tr>
<td>Firefighting</td>
<td>SCBA with positive pressure in full face piece.</td>
</tr>
<tr>
<td>Escape</td>
<td>SCBA in demand or pressure demand mode. Full face mask with chin style front or back mounted type industrial canister specifically approved for protection against formaldehyde.</td>
</tr>
</tbody>
</table>

### C. Protective Equipment and Clothing

Supervisors/principal investigators shall comply with the provisions of OSHA 29 CFR 1910.32 and 20 CFR 1910.133. When protective clothing or equipment is provided under these provisions, the supervisor/principal investigator shall provide such protective devices at no cost to the employee and ensure that the employee wears them.

1. **Selection**
   
a. Supervisors/principal investigators shall, with the approval and assistance of OEHS, select protective clothing and equipment based upon the form of formaldehyde to be encountered, the conditions of use, and the hazard to be prevented.

   b. Prevention of eye and skin contact with liquid containing 1% or more formaldehyde shall be done with the use of chemical protective clothing impervious to formaldehyde and by the use of other personal protective equipment such as goggles and face shields as appropriate to the operation.

   c. Contact with irritating or sensitizing materials shall be prevented to the extent necessary to eliminate the hazard.

¹ Respirators specified for use at higher concentrations may be used at lower concentrations.

² A half mask respirator with canisters specifically approved for protection against formaldehyde can be substituted for full face piece respirator providing that effective gas-proof goggles are provided and used in combination with the half mask respirator.
d. Where a face shield is worn, chemical safety goggles are also required if there is still a danger of formaldehyde reaching the area of the eye.

e. Full body protection shall be used for entry into areas where concentrations exceed 100 ppm and for emergency re-entry to areas of unknown concentration.

2. **Maintenance of Protective Clothing**

   a. Supervisors/principal investigators shall ensure that protective equipment and clothing that have become contaminated with formaldehyde are ventilated for at least 48 hours in a chemical fume hood or other ventilated storage area, and are cleaned before reuse.

   b. When ventilating formaldehyde contaminated clothing and equipment, the ventilated storage area or chemical fume hood must be labeled (labels may be obtained from OEHS) with the following information: **DANGER: FORMALDEHYDE CONTAMINATED EQUIPMENT (CLOTHING). AVOID INHALATION AND SKIN CONTACT**

   c. The supervisor/principal investigator shall ensure that only persons trained to recognize the hazards of formaldehyde are allowed to remove the contaminated material from the storage area for the purpose of cleaning, laundering or disposal. Clothing that has been ventilated and is ready for laundry must be placed into plastic bags labeled with the same danger warning shown in C.2.b above before delivering to laundry handlers.

   d. The supervisor/principal investigator shall ensure that no employee takes home equipment or clothing that is contaminated with formaldehyde.

   e. In-house laundry handlers shall be trained by OEHS in the hazards associated with formaldehyde and shall handle all labeled bags containing formaldehyde contaminated clothing with care in order to minimize exposure. Tulane laundry handlers are responsible for informing outside laundry contractors of the dangers of formaldehyde exposure and the necessary precautions to prevent exposure during processing.

   f. The supervisor/principal investigator shall repair or replace, as necessary, all required protective clothing or equipment in order to ensure its effectiveness.

D. **Personal Hygiene Protection**

   1. Supervisors/principal investigators shall provide “change rooms” as described in OSHA 29 CFR 1910.141 for employees who are required to change from work clothing into clothing designed to prevent skin contact with formaldehyde.

   2. If there is the potential that an employee may be splashed with solutions of 1% or greater of formaldehyde (e.g., by equipment failure or improper work practices) the supervisor/principal investigator shall provide conveniently located emergency showers and ensure that affected employees use these facilities immediately.

   3. If there is any possibility that an employee's eyes may be splashed with solutions containing 0.1% or greater of formaldehyde, the supervisor/principal investigator shall provide eyewash stations within the immediate work area for emergency use. All eyewash stations shall meet the requirements of ANSI standards and shall be approved by OEHS.
VI. Housekeeping for Operations Involving Formaldehyde Liquids or Gas

A. Inspections

Supervisors/principal investigators shall conduct a program of regular visual inspections to detect leaks and spills as prescribed by OEHS.

B. Preventive Maintenance

Supervisors/principal investigators shall conduct preventative maintenance inspections of equipment.

C. Spill Containment Devices

In work areas where spillage may occur, the supervisor/principal investigator shall provide spill containment devices (spill pillows, boom, etc.) for containing and decontaminating the work area, and shall ensure that the waste is prepared for disposal according to hazardous waste disposal procedures.

D. Spills

The supervisor/principal investigator shall ensure that OEHS is contacted in the event of a spill or leak, as monitoring may be required. Cleaning of small spills and leaks by employees wearing suitable protective equipment and who are trained in proper methods of clean-up and decontamination shall be done promptly under the supervision or direction of OEHS. Large spills shall be cleaned by OEHS or contract personnel who have been trained in proper emergency response procedures.

E. Disposal

All waste and debris from formaldehyde decontamination (resulting from leaks or spills) shall be placed for disposal in sealed containers bearing a label warning of formaldehyde presence and of the hazards associated with formaldehyde, and shall be disposed of by OEHS.
F. **Injury**

In the event a person is injured due to an emergency involving formaldehyde, that person shall follow the medical procedures listed in *VII. Medical Surveillance*, below.

---

**VII. Medical Surveillance**

- **A. Employees Covered**
- **B. Examination by a Physician**
- **C. Emergency Exposure Examinations**
- **D. Information Provided to the Physician**
- **E. Physician’s Written Opinion**
- **F. Medical Removal**
- **G. Multiple Physician Review**

---

**VII. MEDICAL SURVEILLANCE**

**A. Employees Covered**

1. The supervisor/principal investigator shall institute a medical surveillance program for all employees who will be exposed to formaldehyde at concentrations at or exceeding the action level or STEL. The *Formaldehyde Survey (Form 01F-OEHS)* located in *Appendix E* of this manual and/or monitoring by OEHS shall determine which employees are to participate in the program.

2. Medical surveillance shall also be available to employees who develop signs and symptoms of overexposure to formaldehyde and for all employees exposed to formaldehyde during emergencies. When determining whether an employee may be experiencing signs and symptoms of possible overexposure to formaldehyde, the supervisor/principal investigator, in consultation with OEHS, may rely on evidence that signs and symptoms associated with formaldehyde exposure will occur only in exceptional circumstances when airborne exposure is less than 0.1 ppm and when formaldehyde is present in material in concentrations less than 0.1%.

**B. Examination by a Physician**

1. All medical procedures shall be performed by or under the supervision of a licensed physician. The *Medical Disease Questionnaire, OSHA 29 CFR 1910.1048, Appendix D* (see, OSHA website [www.osha.gov](http://www.osha.gov)) shall be administered by or under the supervision of the licensed physician and kept as part of the employee's medical records. Medical services shall be provided without cost to the employee through the Occupational Medicine Clinic or Emergency Room of Tulane University Hospital and Clinic. The cost of medical services shall be the responsibility of the employee's unit.

2. The supervisor/principal investigator shall make the medical surveillance program available to employees prior to assignment to a job where formaldehyde exposure is at or above the action level or STEL and annually thereafter. The program shall also be made available promptly upon determining signs and symptoms indicative of possible overexposure to formaldehyde. Medical
examinations are also required annually for those employees wearing a respirator for formaldehyde exposure.

3. Medical surveillance includes:

a. Completion of a Medical Disease Questionnaire (OSHA 29 CFR 1910.1048 Appendix D).

b. A determination prepared by a licensed physician based on the evaluation of the Medical Disease Questionnaire as to whether a medical examination is necessary for employees not required to wear respirators.

c. Medical examinations given, at the expense of the employee's unit, to any employee who may be at risk from exposure to formaldehyde as determined by a licensed physician based upon his/her review of the Medical Disease Questionnaire. At the time of initial assignment and at least annually thereafter, examinations shall be given to all employees required to wear a respirator to reduce exposure.

d. Physical examinations with emphasis on evidence of irritation or sensitization of the skin and respiratory system, shortness of breath, or irritation of the eyes.

e. Laboratory examination for respiratory wearers that shall include: baseline and annual pulmonary function tests, with forced vital capacity (FVC), forced expiratory volume in one second (FEV), and forced expiratory flow (FEF).

f. Any other tests the examining physician deems necessary to complete the written opinion.

g. Counseling on the increased risk of impairment to health to employees having medical conditions that would be directly or indirectly aggravated by exposure to formaldehyde.

C. Emergency Exposure Examinations

The TUHC Occupational Medicine Clinic or Emergency Room shall be available to give medical examinations as soon as possible to all employees who have been exposed to formaldehyde during an emergency.

1. The examination by a licensed physician shall include medical and work history with emphasis on any upper or lower respiratory problems, allergic conditions, skin reaction or hypersensitivity, and any evidence of eye, nose or throat irritation.

2. Other examinations shall consist of those elements considered appropriate by the examining physician.

D. Information Provided to Physician

1. A copy of this Formaldehyde Policy shall be provided to the TUHC Occupational Medicine Clinic or Emergency Room, or to other Tulane designated health care providers.

2. The supervisor/principal investigator or department head shall provide the physician with the affected employee's job description or duties as they relate to formaldehyde exposure and the representative exposure level of the employee's job assignment as determined by OEHS.
3. Information concerning any personal protective equipment (PPE) and respiratory protection used or to be used by the employee as prescribed by the supervisor/principal investigator and/or OEHS shall be provided to the physician.

4. Information from previous medical exams of the affected employee within the control of the University shall be provided to the physician.

5. In the event of non-routine examination because of an emergency, persons familiar with the incident (i.e., supervisor/principal investigator or OEHS personnel) shall provide TUHC Occupational Medicine Clinic or Emergency Room with a description of how the incident or emergency occurred and the exposure the victim may have received. This information should be provided in the First Report of Occupational Injury/Illness form (Form 18F-OEHS in Appendix E of this manual) that should, if possible, accompany the injured/ill employee and be presented at the time of treatment.

E. Physician's Written Opinion

1. For each examination required under this policy, a written opinion from the examining physician shall be provided to OEHS and the supervisor/principal investigator. This written opinion shall contain the results of the medical examination with the exception that it shall not reveal specific findings or diagnoses unrelated to occupational exposure to formaldehyde.
   a. The physician's opinion shall indicate 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.
   b. Any recommended limitations on an employee's exposure or changes in the use of personal protective equipment including respirators shall be given.
   c. A statement that the employee has been informed by the physician of any medical condition that would be aggravated by exposure to formaldehyde, whether these conditions may have resulted from past formaldehyde exposure or from exposure in an emergency, and whether there is a need for further examination or treatment.

2. OEHS shall retain a copy of the physician's written opinion. Results of the medical examination and tests conducted by the physician, including the physician's written opinion, shall be kept as part of the employee's medical record at TUHC and shall be kept for the duration of employment plus 30 years.

3. OEHS, through the supervisor/principal investigator, shall provide a copy of the physician's written opinion to the affected employee within 15 days of its receipt.

F. Medical Removal

1. Medical removal is the removal of an employee from a job or task and/or area for medical reasons. This portion of the policy applies when an employee reports significant irritation of the mucosa of the eyes or the upper airways, respiratory sensitization, dermal irritation, or dermal sensitization attributed to workplace formaldehyde exposure. Medical removal provisions do not apply to dermal irritation or dermal sensitization when the product suspected of causing the dermal condition contains less than 0.05% formaldehyde.
2. An employee's report of signs or symptoms of possible overexposure to formaldehyde shall be evaluated as in VII.B or VII.C above. If the examining physician determines that a medical examination, as outlined in VII.B above, is not necessary, then a two-week evaluation and remediation period is established to permit the supervisor/principal investigator (in conjunction with OEHS) time to ascertain whether the signs and symptoms subside untreated or with the use of creams, gloves, first aid treatment or personal protective equipment. Industrial hygiene measures prescribed by OEHS that limit the employee's exposure to formaldehyde may also be implemented during this period. The employee shall be referred immediately to a physician prior to the expiration of the two-week period if the signs or symptoms worsen. Earnings, seniority, and benefits may not be altered during the two-week period by virtue of the report.

3. If the signs and symptoms do not subside or have not been remedied by the end of the two-week period--or earlier if signs or symptoms warrant--the employee shall be examined by a physician at TUHC Occupational Medicine Clinic or other Tulane designated health care provider. The physician shall presume, absent contrary evidence, that observed dermal irritation or dermal sensitization is not attributable to formaldehyde when the products to which the affected employee is exposed contain less than 0.1% formaldehyde.

4. Medical examinations shall be conducted in compliance with VII.B above. The physician is also referred to OSHA Appendix C of 29 CFR 1910.1048 for additional guidelines for conducting the medical examination.

5. If the physician finds that significant signs and symptoms result from workplace exposure to formaldehyde and recommends restrictions or removal, the supervisor/principal investigator shall promptly comply with the restrictions or recommendations of removal.

   In the event of a recommendation of removal, the supervisor/principal investigator shall remove the affected employee from current formaldehyde exposure, and, if possible, transfer the employee to work having no or significantly less exposure to formaldehyde. The supervisor/principal investigator must contact Human Resources, Risk Management, and OEHS as soon as possible if a recommendation of medical removal is given.

6. The department must arrange for a follow-up medical examination within 6 months after medical removal. The follow up examination shall determine whether or not the employee can return to his/her job. The physician shall make this determination in his/her written opinion.

7. MSDSs may be relied on by supervisors/principal investigators, OEHS, or attending physicians in making the determination of the formaldehyde content of materials covered in this policy.

G. Multiple Physician Review

1. An employee has the right to have a second physician review the findings of the initial examining physician, and to have other tests performed that the second physician deems necessary and appropriate to evaluate the effects of any formaldehyde exposure.

2. After the initial physician conducts an examination or consultation for the purpose of medical removal or restriction, Risk Management or the supervisor/principal investigator must promptly notify the affected employee of his/her right to a second opinion. The Right to Second Opinion/Memorandum (Form 02F-OEHS in Appendix E of this manual) can be used for this purpose.
3. For the University to participate in or pay for multiple physician review, the following must occur within fifteen (15) days after receipt of notification of the right to seek a second opinion or receipt of the initial physician's written opinion, whichever is later: a) the employee must inform Risk Management or the supervisor/principal investigator of his/her intention to seek a second medical opinion; and b) the employee must initiate steps to make an appointment with a second physician.

4. If the findings, determinations or recommendations of the second physician differ from those of the initial physician, Risk Management and the employee shall ensure that efforts are made for the two physicians to resolve the disparity between their opinions. If the two physicians are unable to come to a resolution, Risk Management and the employee shall designate a third physician who is a specialist in the field at issue to a) review the findings, determinations or recommendations of the prior physicians, and b) to conduct such examinations, consultations, laboratory tests and discussions with the prior physicians as the third physician deems necessary.

5. The supervisor/principal investigator shall act in accordance with the findings, determinations and recommendations of the third physician, unless the employee and Risk Management reach an agreement that is consistent with the recommendations of at least one of the three physicians, in which case, the recommendations agreed upon shall be followed.

6. The employee or his/her supervisor/principal investigator must submit copies of written medical opinions of the first, second and, if applicable, the third physician to Risk Management and OEHS.

---

### VIII. Hazard Communication

<table>
<thead>
<tr>
<th>A. Application</th>
<th>B. Labels</th>
<th>C. Material Safety Data Sheets</th>
<th>D. Inventory Reports</th>
<th>E. Employee Training</th>
</tr>
</thead>
</table>

#### A. Application

Communication of the hazards associated with formaldehyde in the work place shall be governed by policies outlined in **Section 12, Hazard Communication**, of this manual.

1. The following shall be subject to the Hazard Communication requirements: a) formaldehyde gas; b) all mixtures or solutions composed of greater than 0.1 percent (%) formaldehyde; and 3) materials capable of releasing formaldehyde into the air, under reasonably foreseeable conditions of use, at concentrations reaching or exceeding 0.1 ppm (part per million).

2. The specific health hazards that the supervisor/principal investigator shall address are: irritation and sensitization of the skin and respiratory system, eye and throat irritation, acute toxicity, and cancer.
B. Labels

1. The supervisor/principal investigator shall ensure that all containers of materials listed in VIII.A.1 above, bear the original container labels with the appropriate hazard warnings or OEHS in-house labels listing the hazards of formaldehyde, as specified in Section 12, Hazard Communication, of this manual, and shall have the MSDS readily available to provide the user further physical and health hazard information.

2. For materials capable of releasing formaldehyde at levels above 0.5 ppm, in addition to the above, the labels must specifically address respiratory sensitization and shall contain the words "Potential Cancer Hazard."

C. Material Safety Data Sheets

1. Material Safety Data Sheets (MSDS) providing full information on the hazardous properties of a chemical, are available through OEHS, or the OEHS website at www.som.tulane.edu/oehs. OEHS collects and distributes MSDSs and other safety information to the University’s various facilities and staff.

2. When requesting information on a chemical from OEHS, include: the exact chemical name, the manufacturer’s name, the product number, and, if possible, the Chemical Abstracts Service (CAS) number of the chemical.

3. Electronic versions of MSDSs are acceptable in the work area if: 1) users are trained in retrieving MSDSs, 2) a copy of the MSDS can be printed, and 3) arrangements have been set up for retrieval of MSDSs in the event of a power failure or other emergency.

4. OEHS must keep a paper copy of all MSDSs in its office for regulatory reporting purposes, for emergency response, and to serve as a library for user retrieval of MSDSs in the event of power outages.

D. Inventory Reports

To maintain compliance with federal, state and local laws, annual inventory reports must be submitted to OEHS to ensure that correct MSDSs are on hand for specific formaldehyde products in use for each affected work area. Supervisors/principal investigators are responsible for preparing annual inventories. DSRs shall collect and submit same to OEHS for review.

E. Employee Training

1. OEHS offers training to supervisors/principal investigators who use formaldehyde in their areas. In turn, supervisors/principal investigators train the employees under their supervision. Employee training shall be done upon initial assignment, at least annually thereafter, and whenever new conditions or hazards are introduced into the work area. Training records must be submitted to OEHS in accordance with the training policy set forth in this manual. (See, Section 3, Employee Safety Training, of this manual)

2. Exception to the above training requirements shall be given to an area where it is determined by OEHS, using objective data, that employees in the given area are not exposed to formaldehyde at or above 0.1 ppm.
3. **Training Program**

The training program shall consist of:

a. A discussion of the formaldehyde policy, the OSHA Formaldehyde Standard, and MSDSs.

b. A discussion clearly defining the purpose of the Medical Surveillance Program established in this policy in VII above, including: 1) a description of the potential health hazards associated with exposure to formaldehyde; 2) a description the signs and symptoms of exposure to formaldehyde; and 3) instructions to report immediately to the supervisor/principal investigator the development of any adverse signs or symptoms that the employee suspects are attributable to formaldehyde exposure.

c. A description of operations in the specific work area where formaldehyde is present and an explanation of the safe work practices appropriate for limiting exposure to formaldehyde in each job.

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

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

f. An explanation of the importance of engineering and work practice controls for employee protection and any necessary instruction in the use of such controls; and

g. A review of emergency procedures, including OEHS notification, and specific duties or assignments of each employee in the event of an emergency.

4. **Access to Training Materials**

   a. Supervisors/principal investigators shall make training materials readily available to employees and inform them of the availability and location of such material.

   b. Supervisors/principal investigators must document all training records. The unit's DSR shall collect and submit training documentation to OEHS for review.
IX. RECORDKEEPING

A. Exposure Measurements

OEHS shall establish and maintain an accurate record of all measurements taken to monitor employee exposure to formaldehyde. This record shall include: 1) date of measurements; 2) operation being monitored; 3) methods of sampling and analysis and evidence of their accuracy and precision; 4) number, duration, time and results of samples taken; 5) types of protective devices worn; and 6) name, job classifications, social security numbers and exposure estimates of the employees whose exposures are represented by the actual monitoring results.

B. Exposure Determinations

Where OEHS has determined that no monitoring is required under this policy, OEHS shall maintain a record of the objective data relied upon to support the determination that no employee is exposed to formaldehyde at or above the action level.

C. Medical Surveillance

1. OEHS shall establish and maintain a record of each employee who is subject to medical surveillance. The record shall include: a) name and social security number of the employee; b) physician’s written opinion; and c) a list of any employee health complaints that may be related to exposure to formaldehyde.

2. TUHC shall maintain an accurate record of the items listed under C.1 above, as well as: a) a copy of the medical examination results including Medical Disease Questionnaires and results of any medical tests required; and b) a copy of all written physician opinions and any medical records relating to these opinions.

D. Respirator Fit Testing

OEHS shall establish and maintain accurate records for employees subject to negative pressure respirator fit testing required by the Formaldehyde Policy in accordance with OSHA 29 CFR 1910.1048.(o)(4)(ii)(A-D).
E. **Record Retention**

The following records shall be maintained for at least the periods indicated: 1) exposure records and determinations shall be kept for 30 years; 2) medical records shall be kept for the duration of employment plus 30 years; and 3) respirator fit testing records shall be kept until replaced by more recent records.

F. **Availability of Records**

1. Upon request, OEHS, Risk Management, and TUHC shall make available to OSHA for examination and copying, all records maintained as a requirement of this policy.

2. Employee exposure and medical records required by the Formaldehyde Policy shall be provided upon request (for examination and copying) of the subject employee or former employee or to anyone having the specific written consent of the subject employee or former employee in accordance with 29 CFR 1910.20(a)-(c) and (g)-(i).