

# Chapter 296-856 WAC

## FORMALDEHYDE

**WAC**

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**WAC 296-856-100 Scope.** This chapter applies to all occupational exposure to formaldehyde. Formaldehyde includes formaldehyde gas, its solutions, and materials that release formaldehyde.

**Definitions:**

**Formaldehyde** is an organic chemical with the formula of HCHO, represented by the chemical abstract service (CAS) registry number 50-00-0. Examples of primary uses of formaldehyde and its solutions are as follows:

- An intermediate in the production of:
  - Resins.
  - Industrial chemicals.
- A bactericide or fungicide.
- A preservative.
- A component in the production of end-use consumer items such as cosmetics, shampoos, and glues.

**Exposure** is the contact an employee has with formaldehyde, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry such as inhalation, ingestion, skin contact, or skin absorption.

Some of the requirements in this chapter may not apply to every workplace with an occupational exposure to formaldehyde. At a minimum, you need to:

- Follow requirements in the basic rules sections, WAC 296-856-20010 through 296-856-20070.
- Use employee exposure monitoring results required by Exposure evaluation, WAC 296-856-20060.
- Follow Table 1 to find out which additional sections of this chapter apply to your workplace.

(7/21/09)

**Table 1**  
**Sections That Apply To Your Workplace**

If	Then continue to follow the basic rules, and the additional requirements in
<ul style="list-style-type: none"> <li>• Employee exposure monitoring results are above the 8-hour time weighted average (TWA<sub>8</sub>) or short-term exposure limit (STEL)</li> </ul>	<ul style="list-style-type: none"> <li>• Exposure and medical monitoring, WAC 296-856-30010 through 296-856-30050;</li> <li style="text-align: center;"><b>AND</b></li> <li>• Exposure control areas, WAC 296-856-40010 through 296-856-40030.</li> </ul>
<ul style="list-style-type: none"> <li>• Employee exposure monitoring results are:               <ul style="list-style-type: none"> <li>– Below the TWA<sub>8</sub> and STEL;</li> <li style="text-align: center;"><b>AND</b></li> <li>– Above the action level (AL)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Exposure and medical monitoring, WAC 296-856-30010 through 296-856-30050</li> </ul>
<ul style="list-style-type: none"> <li>• Employee exposure monitoring results are below the AL and STEL</li> </ul>	<ul style="list-style-type: none"> <li>• Exposure and medical monitoring, WAC 296-856-30020 through 296-856-30050</li> </ul>

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-100, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-200 Basic rules.**

**Your responsibility:**

To measure and minimize employee exposure to formaldehyde.

**IMPORTANT:**

• The requirements in basic rules apply to all employers covered by the scope of this chapter. Additional sections may apply to you. Turn to the scope and follow Table 1 in that section to determine the additional sections of this chapter that apply to you.

**Section contents:**

- Preventive practices  
WAC 296-856-20010.
- Training  
WAC 296-856-20020.
- Personal protective equipment (PPE)  
WAC 296-856-20030.
- Employee protective measures  
WAC 296-856-20040.
- Exposure evaluations  
WAC 296-856-20050.

Notification  
WAC 296-856-20060.  
Exposure records  
WAC 296-856-20070.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-200, filed 4/4/06, effective 9/1/06.]

### **WAC 296-856-20010 Preventive practices.**

#### **You must:**

- Make sure containers of gasses, solutions, or materials composed of greater than 0.1 percent formaldehyde, and capable of releasing formaldehyde at concentrations greater than 0.1 ppm to 0.5 ppm, are properly labeled, tagged, or marked with all of the following:

- That the product contains formaldehyde.
- The name and address of the responsible party (for example manufacturer, importer, or employer).

- A statement that the physical and health hazard information can be obtained from you, and from the material safety data sheet (MSDS).

- Label, tag, or mark containers and materials capable of releasing formaldehyde at levels above 0.5 ppm as follows:

- Include the words on the label "Potential Cancer Hazard."

- Follow the requirements for labels found in the following separate chapters:

- The safety and health core rules, employer chemical hazard communications, WAC 296-800-170.

- Material safety data sheet and label preparation, chapter 296-839 WAC.

#### **You must:**

- Make sure you have a housekeeping and maintenance program to detect leaks and spills by doing at least the following:

- Regular visual inspections.

- Preventive maintenance of equipment, that includes surveys for leaks, at regular intervals.

- In areas where spills could occur, make resources available to contain the spills, decontaminate the area affected, and dispose of waste.

- Promptly repair leaks and clean up spills.

- Train employees who will clean spills and repair leaks, about the methods for cleanup and decontamination.

- Make sure employees who will clean up spills and repair leaks, have the appropriate personal protective equipment and respirators.

- Dispose of waste from spills or leaks in sealed containers marked with information that states the contents contain formaldehyde and the hazards associated with formaldehyde exposure.

- Develop and implement appropriate procedures to minimize injury and loss of life if there is a possibility of an emergency, such as an uncontrolled release of formaldehyde.

**Note:** Following the requirements of a separate chapter, Emergency response, chapter 296-824 WAC, will meet the requirements for emergency procedures.

- Provide emergency washing facilities, for formaldehyde exposures, as required by a separate chapter, the safety and health core rules, First aid, WAC 296-800-150, as follows:

- Emergency showers in the immediate work areas where skin contact to solutions of 1 percent or greater of formaldehyde could occur.

- Emergency eye wash in the immediate work area where an eye contact to solutions of 0.1 percent or greater of formaldehyde could occur.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-20010, filed 4/4/06, effective 9/1/06.]

### **WAC 296-856-20020 Training.**

**Exemption:** Training is not required for employees when you have conclusive documentation that they cannot be exposed to formaldehyde at airborne concentrations above 0.1 parts per million (ppm).

#### **You must:**

- Provide training and information to employees exposed to formaldehyde at all of the following times:

- At the time of initial assignment to a work area where there is formaldehyde exposure.

- Whenever there is a new exposure to formaldehyde in their work area.

- At least every twelve months after initial training.

- Make sure training includes at least the following:

- The contents of this chapter and MSDS for formaldehyde.

- The purpose of medical evaluations and a description of how you are fulfilling the medical evaluation requirements of this chapter.

- The health hazards and signs and symptoms associated with formaldehyde exposure, including:

- Cancer hazard.

- Skin and respiratory system irritant and sensitizer.

- Eye and throat irritation.

- Acute toxicity.

- How employees will immediately report any signs or symptoms suspected to be from formaldehyde exposure.

- Descriptions of operations where formaldehyde is present.

- Explanations of safe work practices to limit employee exposure to formaldehyde for each job.

- The purpose, proper use, and limitations of personal protective clothing.

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

- An explanation of the importance of exposure controls, and instructions in the use of them.

- A review of emergency procedures, including the specific duties or assignments of each employee in the event of an emergency.

- The purpose, proper use, limitations, and other training requirements for respiratory protection, as required by a separate chapter, Respirators, chapter 296-842 WAC.

- Make sure any written training materials are readily available to your employees at no cost.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-20020, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-20030 Personal protective equipment (PPE).****You must:**

- Provide PPE at no cost to employees and make sure employees wear the equipment.
- Make sure that employees do not take contaminated clothing or other PPE from the workplace.

Select PPE that is appropriate for your workplace based on at least the following:

- The form of formaldehyde, such as gas, solution, or material.
- The conditions of use.
- The hazard to be prevented.
- Provide full body protection for entry into areas where formaldehyde exposure could exceed 100 parts per million (ppm) or when airborne concentrations are unknown.
- Protect employees from all contact with liquids containing one percent or more of formaldehyde by providing chemical protective clothing that is impervious to formaldehyde and other personal protective equipment, such as goggles and face shields, as appropriate for the operation.
- Make sure when face shields are worn, employees also wear chemical safety goggles if there could be eye contact with formaldehyde.
- Make sure contaminated clothing and other PPE is cleaned or laundered before it is used again.
- Repair or replace clothing and other PPE as needed to maintain effectiveness.
- Make sure storage areas for ventilating contaminated clothing and PPE are established to minimize employee exposure to formaldehyde.
  - Make sure storage areas and containers for contaminated clothing and PPE have labels or signs with the following warning:

**DANGER**

**Formaldehyde-contaminated (clothing) or equipment**  
**Avoid inhalation and skin contact**

**You must:**

- Make sure that only employees trained to recognize the hazards of formaldehyde remove personal protective equipment (PPE) and clothing from storage areas for the purposes of disposal, cleaning, or laundering.
- Inform any person who launders, cleans, or repairs contaminated clothing or other PPE, of the hazards of formaldehyde and procedures to safely handle the clothing and equipment.
- Provide change rooms for employees who are required to change from work clothes into protective clothing to protect them from skin contact with formaldehyde.
  - Make sure change rooms have separate storage facilities for street clothes and protective clothing.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-20030, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-20040 Employee protective measures.****You must:**

- Implement appropriate protective measures while you conduct your exposure evaluation.

(7/21/09)

- Employees performing activities with exposure to airborne formaldehyde that could exceed the 0.75 ppm, 8-hour time weighted average (TWA<sub>8</sub>), or the 2 ppm 15-minute short-term exposure limit (STEL), need to follow the requirements in WAC 296-856-30010 through 296-856-40030 of this chapter.

**Reference:** For respirator requirements, turn to Respirators, WAC 296-856-40060.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-20040, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-20050 Exposure evaluations.****IMPORTANT:**

- This section applies when there is a potential for an employee to be exposed to airborne formaldehyde in your workplace.
  - When you conduct an exposure evaluation in a workplace where an employee uses a respirator, the protection provided by the respirator is not considered.
  - Following this section will fulfill the requirements to identify and evaluate respiratory hazards found in a separate chapter, Respiratory hazards, chapter 296-841 WAC.

**You must:**

- Conduct an employee exposure evaluation to accurately determine airborne concentrations of formaldehyde by completing Steps 1 through 7 of the exposure evaluation process, each time any of the following apply:
  - No evaluation has been conducted.
  - Changes have occurred in any of the following areas that may result in new or increased employee exposures:
    - Production.
    - Processes.
    - Exposure controls, such as ventilation systems or work practices.
    - Personnel.
    - Equipment.
  - You have any reason to suspect new or increased employee exposure may occur.
  - You receive a report of employee developing signs and symptoms associated with formaldehyde exposure.

**You must:**

- Provide affected employees or their designated representatives an opportunity to observe exposure monitoring required by this chapter.
  - Make sure observers entering areas with formaldehyde exposure:
    - Are provided with and use the same protective clothing, respirators, and other personal protective equipment (PPE) that employees working in the area are required to use;

**AND**

- Follow any safety and health requirements that apply.

**Exposure evaluation process:**

- Exemption:**
- Exposure monitoring is not necessary if you have documentation conclusively demonstrating that employee exposure for a particular material and the operation where it is used, cannot exceed the action level (AL) or short-term exposure limit (STEL) during any conditions reasonably anticipated.
  - Such documentation can be based on observations, data, calculations, and previous air monitoring results. Previous air monitoring results:

- Must meet the accuracy required by Step 5.
- Must be based on data that represents conditions being evaluated in your workplace.
- May be from outside sources, such as industry or labor studies.

**Step 1:** Identify all employees who have potential exposure to airborne formaldehyde in your workplace.

**Step 2:** Identify operations where employee exposures could exceed the 15-minute short-term exposure limit (STEL) for formaldehyde of 2 parts per million (ppm).

**Note:** You may use monitoring devices such as colorimetric indicator tubes or real-time monitors to screen for activities where employee exposures could exceed the STEL.

**Step 3:** Select employees from those working in the operations you identified in Step 2 who will have their 15-minute exposures monitored.

**Step 4:** Select employees from those identified in Step 1 who will have their 8-hour exposures monitored.

- Make sure the exposures of the employees selected represent 8-hour exposures for all employees identified in Step 1, including each job activity, work area, and shift.

■ If you expect exposures to be **below** the action level (AL), you may limit your selection to those employees reasonably believed to have the highest exposures.

■ If you find any of those employees' exposure to be **above** the AL, then you need to repeat monitoring to include each job activity, work area, and shift.

**Reference:** A written description of the procedure used for obtaining representative employee exposure monitoring results needs to be kept as part of your exposure records, as required by Exposure records, WAC 296-856-20070.

- This description can be created while completing Steps 3 through 6 of this exposure evaluation process.

**Step 5:** Determine how you will obtain accurate employee exposure monitoring results. Select and use an air monitoring method with a confidence level of 95 percent, that is accurate to:

- ±25 percent when concentrations are potentially above the TWA of 0.75 parts per million (ppm).
- ±25 percent when concentrations are potentially above the STEL of 2 ppm.
- ±35 percent when concentrations are potentially above the AL.

- Note:**
- Here are examples of air monitoring methods that meet this accuracy requirement:
    - OSHA Method 52 found at <http://www.osha.gov/dts/sltc/methods/toc.html>.
    - NIOSH methods: 2016, 2514, 3500, 2539, and 5700, found at <http://www.cdc.gov/niosh/homepage.html> and linking to the NIOSH Manual of Analytical Methods.
    - Direct reading methods found at <http://www.osha.gov/SLTC/formaldehyde/index.html>

**Step 6:** Obtain employee exposure monitoring results by collecting air samples to accurately determine the formaldehyde exposure of employees identified in Steps 3 and 4.

- Make sure samples are collected from each selected employee's breathing zone.

- Note:**
- You may use any sampling method that meets the accuracy specified in Step 5. Examples of these methods include:
    - Real-time monitors that provide immediate exposure monitoring results.
    - Equipment that collects samples that are sent to a laboratory for analysis.
  - The following are examples of methods for collecting samples representative of 8-hour exposures.
    - Collect one or more continuous samples, such as a single 8-hour sample or four 2-hour samples.
    - Take a minimum of 5 brief samples, such as five 15-minute samples, during the work shift at randomly selected times.
  - For work shifts longer than 8 hours, monitor the continuous 8-hour portion of the shift expected to have the highest average exposure concentration.

**Step 7:** Have the samples you collected analyzed to obtain employee exposure monitoring results for 8-hour and short-term exposure limits (STEL) exposures.

- Determine if employee exposure monitoring results are above or below the following values:

- 8-hour action level (AL) of 0.5 ppm.
- 8-hour time-weighted average (TWA<sub>8</sub>) of 0.75 ppm.
- 15-minute short-term exposure limit (STEL) of 2 ppm.

**Reference:** To use the monitoring results to determine which additional chapter sections apply to employee exposure in your workplace, turn to the Scope, WAC 296-856-100, and follow Table 1 in that section.

- Note:**
- You may contact your local WISHA consultant for help with:
    - Interpreting data or other information.
    - Determining 8-hour employee exposure monitoring results.
  - To contact a WISHA consultant:
    - Go to the safety and health core rules, chapter 296-800 WAC; **AND**
    - Find the resources section, and under "other resources," find service locations for labor and industries.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, WSR 06-08-087, § 296-856-20050, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-20060 Notification.**

**You must:**

- Provide written notification of exposure monitoring results to employees represented by your exposure evaluation, within five business days after the results become known to you.

- In addition, when employee exposure monitoring results are above the permissible exposure limits (PEL), of either the 8-hour time weighted average (TWA<sub>8</sub>) or the 15-minute short-term exposure limit (STEL), provide written notification of both of the following within fifteen business days after the results become known to you:

- Corrective actions being taken and a schedule for completion.
- Any reason why exposures cannot be lowered to below the PEL.

**Note:**

- You can notify employees either individually or post the notifications in areas readily accessible to affected employees.
- Posted notification may need specific information that allows affected employees to determine which monitoring results apply to them.
- Notification may be:
  - In any written form, such as handwritten or e-mail.
  - Limited to the required information, such as exposure monitoring results.
- When notifying employees about corrective actions, your notification may refer them to a separate document that is available and provides the required information.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-20060, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-20070 Exposure records.**

**You must:**

- Establish and keep complete and accurate records for all exposure monitoring conducted under this chapter. Make sure the record includes at least the following:

- The name, unique identifier, and job classification of both:

- The employee sampled;

**AND**

- All other employees represented by the sampled employee.

- An estimate of the exposure for each employee "represented" by this monitoring.

- A description of the methods used to obtain exposure monitoring results and evidence of the method's accuracy.

- Any environmental conditions that could affect exposure concentration measurements.

- A description of the procedure used to obtain representative employee exposure monitoring results.

- The operation being monitored.

- The date, number, duration, location, and the result of each sample taken.

- The type of protective devices worn.

- Maintain documentation that conclusively demonstrates that employee exposure for formaldehyde and the operation where it is used cannot exceed the action level or the 15-minute short-term exposure limit, during any reasonable anticipated conditions.

- Such documentation can be based on observations, data, calculation, and previous air monitoring results.

(7/21/09)

- Keep exposure monitoring records for at least thirty years.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-20070, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-300 Exposure and medical monitoring.**

**Your responsibility:**

To monitor employee health and workplace exposures to formaldehyde.

**Section contents:**

Periodic exposure evaluations

WAC 296-856-30010.

Medical and emergency evaluations

WAC 296-856-30020.

Medical removal

WAC 296-856-30030.

Multiple LHCP review

WAC 296-856-30040.

Medical records

WAC 296-856-30050.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-300, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-30010 Periodic exposure evaluations.**

**Exemption:** Periodic employee exposure monitoring is not required if exposure monitoring results conducted to fulfill requirements in this chapter, Exposure evaluations, WAC 296-856-20050, are below both the action level (AL) and 15-minute short-term exposure limit (STEL).

**You must:**

- Obtain employee exposure monitoring results as specified in Table 2 by repeating Steps 1 and 7 of the exposure evaluation process found within this chapter, in Exposure evaluations, WAC 296-856-20050.

**Note:** If you document that one work shift consistently has higher exposure monitoring results than another for a particular operation, then you may limit sample collection to the work shift with higher exposures and use those results to represent all employees performing the operation on other shifts.

**Table 2  
Periodic Exposure Evaluation Frequencies**

<b>If employee exposure monitoring results</b>	<b>Then</b>
Are above the action level (AL) of 0.5 ppm	Conduct additional exposure monitoring at least every six months for the employees represented by the monitoring results
Are above the short-term exposure limit (STEL) of 2 ppm	Repeat exposure monitoring at least once a year, or more often as necessary to evaluate employee exposure
Have decreased to below the AL <b>and</b> the STEL	You may <b>stop</b> periodic employee exposure monitoring for employees represented by the monitoring results.

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If employee exposure monitoring results	Then
<p style="text-align: center;"><b>AND</b></p> <p>The decrease is demonstrated by two consecutive exposure evaluations made at least seven days apart</p>	<p>Note: You need to monitor again if there is a change in any of the following that may result in new or increased employee exposures:</p> <ul style="list-style-type: none"> <li>• Production</li> <li>• Processes</li> <li>• Exposure controls, such as ventilation systems or work practices</li> <li>• Personnel</li> <li>• Equipment</li> </ul>

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-30010, filed 4/4/06, effective 9/1/06.]

### WAC 296-856-30020 Medical and emergency evaluations.

#### IMPORTANT:

• Medical evaluations completed to meet the respirator use requirements of this section also need to meet the requirements found in a separate chapter, Respirators, medical evaluations, WAC 296-842-140.

#### You must:

- Make medical evaluations available to current employees who:
  - Are exposed to formaldehyde concentrations above the action level (AL) or short-term exposure limit (STEL).
  - Are exposed to formaldehyde during an emergency situation.
  - Develops signs and symptoms commonly associated with formaldehyde exposure.
- Make medical examinations available to current employees as deemed necessary by the LHCP after reviewing the medical disease questionnaire for employees that are presently not required to wear a respirator.
- Complete Steps 1 through 4 of the medical evaluation process at the following times:
  - Initially, when employees are assigned to work in an area where exposure monitoring results are above the action level (AL) or above the STEL.
  - At least every twelve months from the initial medical evaluation for employees exposed to formaldehyde above the action level (AL) or the STEL.
  - Whenever the employee develops signs and symptoms commonly associated with formaldehyde.

**Note:** Signs and symptoms are rarely associated with formaldehyde concentrations in air less than 0.1 parts per million (ppm), and in materials at concentration levels less than 0.1 percent.

#### You must:

- Make medical evaluations available:
  - At no cost to employees, including travel costs and wages associated with any time spent obtaining the medical evaluation.

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- At reasonable times and places.

**Note:**

- Employees who decline to receive a medical evaluation to monitor for health effects caused by formaldehyde are not excluded from receiving a separate medical evaluation for respirator use.
- If employers discourage participation in medical monitoring for health effects caused by formaldehyde, or in any way interferes with an employee's decision to continue with this program, this interference may represent unlawful discrimination under RCW 49.17.160, Discrimination against employee filing complaint, instituting proceedings, or testifying prohibited—Procedure—Remedy.

#### Medical evaluation process:

**Step 1:** Select a licensed health care professional (LHCP) who will conduct or supervise examinations and procedures.

- If the LHCP is not a licensed physician, make sure individuals who conduct pulmonary function tests, have completed a training course in spirometry, sponsored by an appropriate governmental, academic, or professional institution.

**Note:** The LHCP must be a licensed physician or supervised by a physician.

**Step 2:** Make sure the LHCP receives all of the following information before the medical evaluation is performed:

- A copy of this chapter.
- The helpful tools: *Substance Technical Guideline for Formalin, Medical Surveillance, and Medical Disease Questionnaire*.
  - A description of the duties of the employee being evaluated and how these duties relate to formaldehyde exposure.
  - The anticipated or representative exposure monitoring results for the employee being evaluated.
  - A description of the personal protective equipment (PPE) and respiratory protection each employee being evaluated uses or will use.
  - Information in your possession from previous employment-related examinations when this information is not available to the examining LHCP.
  - A description of the emergency and the exposure, when an examination is provided due to an exposure received during an emergency.
  - Instructions that the written opinions the LHCP provides to you, does **not** include any diagnosis or other personal medical information, **and** is limited to the following information:
    - The LHCP's opinion about whether or not medical conditions were found that would increase the employee's risk for impairment from exposure to formaldehyde.
    - Any recommended limitations for formaldehyde exposure and use of respirators or other PPE.
    - A statement that the employee has been informed of medical results and medical conditions caused by formaldehyde exposure requiring further examination or treatment.

**Step 3:** Make a medical evaluation available to the employee. Make sure it includes the content listed in Table 3, Content of Medical Evaluations.

**Step 4:** Obtain the LHCP's written opinion for the employee's medical evaluation and make sure the employee

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receives a copy within five business days after you receive the written opinion.

– Make sure the written opinion is limited to the information specified for written opinions in Step 2.

**Note:** If the written opinion contains specific findings or diagnoses unrelated to occupational exposure, send it back and obtain a revised version without the additional information.

**Table 3**  
**Content of Medical Evaluations**

When conducting an	Include
Initial  OR  Annual evaluation	<ul style="list-style-type: none"> <li>• A medical disease questionnaire that provides a work and medical history with emphasis on:                             <ul style="list-style-type: none"> <li>– Upper or lower respiratory problems</li> <li>– Allergic skin conditions or dermatitis</li> <li>– Hyper reactive airway diseases</li> <li>– Eyes, nose, and throat irritation</li> </ul> </li> <li>• Physical examinations deemed necessary by the LHCP, that include at a minimum:                             <ul style="list-style-type: none"> <li>– Examinations with emphasis on evidence of irritation or sensitization of skin, eyes, and respiratory systems, and shortness of breath</li> <li>– Counseling, provided by the LHCP to the employee as part of the medical examination if the LHCP determines that the employee has a medical condition that may be aggravated by formaldehyde exposure</li> </ul> </li> <li>• Pulmonary function tests for respirator users, that include at a minimum:                             <ul style="list-style-type: none"> <li>– Forced vital capacity (FVC)</li> <li>– Forced expiratory volume in one second (FEV1)</li> <li>– Forced expiratory flow (FEF)</li> </ul> </li> </ul>
Emergency exposure evaluation	<ul style="list-style-type: none"> <li>• A medical examination that includes a work history with emphasis on evidence of upper or lower respiratory problems, allergic conditions, skin reaction or hypersensitivity, and any evidence of eye, nose, or throat irritation</li> </ul>

When conducting an	Include
	<ul style="list-style-type: none"> <li>• Additional examinations the licensed health care professional (LHCP) believes appropriate, based on the employee's exposure to formaldehyde</li> </ul>
Evaluation of reported signs and symptoms	<ul style="list-style-type: none"> <li>• A medical disease questionnaire that provides a work and medical history with emphasis on:                             <ul style="list-style-type: none"> <li>– Upper or lower respiratory problems</li> <li>– Allergic skin conditions or dermatitis</li> <li>– Hyper reactive airway diseases</li> <li>– Eyes, nose, and throat irritation</li> </ul> </li> <li>• A physical examination if considered necessary by the LHCP that includes at a minimum:                             <ul style="list-style-type: none"> <li>– Examinations with emphasis on evidence of irritation or sensitization of skin, eyes, respiratory systems, and shortness of breath</li> <li>– Counseling if the LHCP determines that the employee has a medical condition that may be aggravated or caused by formaldehyde exposure</li> </ul> </li> </ul>

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-30020, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-30030 Medical removal.**

**Exemption:** Medical removal or restrictions do not apply when skin irritation or skin sensitization occurs from products that contain less than 0.05 percent of formaldehyde.

**IMPORTANT:**

- This section applies when an employee reports irritation of the mucosa of the eye or the upper airways, respiratory sensitization, dermal irritation, or skin sensitization from formaldehyde exposure.

- When determining the content of formaldehyde in materials that employees have exposure to, you may use documentation, such as manufacturer's data, or independent laboratory analyses.

**You must:**

- Complete Steps 1 through 4 of the medical evaluation process for removal of employees, in this section, for employees that report signs and symptoms of formaldehyde exposure.

**Note:** When the employee is exposed to products containing less than 0.1 percent formaldehyde, the LHCP can assume, absent of contrary evidence, that employee signs and symptoms are not due to formaldehyde exposure.

### Medical evaluation process for removal of employees:

**Step 1:** Provide the employee with a medical evaluation by an LHCP selected by the employer.

**Step 2:** Based on information in the medical questionnaire the LHCP will determine if the employee will receive an examination as described in Table 3, Content of Medical Evaluations, in Medical and emergency evaluations, WAC 296-856-30020.

– If the LHCP determines that a medical examination is not necessary, there will be a two-week evaluation and correction period to determine whether the employee's signs and symptoms resolve without treatment, from the use of creams, gloves, first-aid treatment, personal protective equipment, or industrial hygiene measures that reduce exposure.

■ If before the end of the two-week period the employee's signs or symptoms worsen, immediately refer them back to the LHCP.

■ If signs and symptoms persist after the two-week period, the LHCP will administer a physical examination as outlined in Table 3, Content of Medical Evaluations, in Medical and emergency evaluations, WAC 296-856-30020.

**Step 3:** Promptly follow the LHCP's restrictions or recommendations. If the LHCP recommends removal from exposure, do either of the following:

– Transfer the employee to a job currently available that:

■ The employee qualifies for, or could be trained for, in a short period of time (up to six months);

**AND**

■ Will keep the employee's exposure to as low as possible, and never above the AL of 0.5 parts per million.

– Remove the employee from the workplace until either:

■ A job becomes available that the employee qualifies for, or could be trained for in a short period of time **and** will keep the employee's exposure to as low as possible and never above the AL;

**OR**

■ The employee is returned to work or permanently removed from formaldehyde exposure, as determined by completing Steps 1 through 3 of the medical evaluation process for removal of employees, in this section.

**Step 4:** Make sure the employee receives a follow-up examination within six months from being removed from the formaldehyde exposure by the LHCP. At this time, the LHCP will determine if the employee can return to their original job status, or if the removal is permanent.

**You must:**

• Maintain the employee's current pay rate, seniority, and other benefits if:

– You move them to a job that they qualify for, or could be trained in a short period of time, and will keep the employee's exposure to as low as possible and never above the AL;

**OR**

– In the case there is no such job available, then until they are able to return to their original job status or after six months, whichever ever comes first.

**Note:** • If you must provide medical removal benefits and the employee will receive compensation for lost pay from other sources, you may reduce your medical removal benefit obligation to offset the amount provided by these sources.

• Examples of other sources are:

– Public or employer-funded compensation programs.

– Employment by another employer, made possible by the employee's removal.

• Make medical evaluations available:

– At no cost to employees, including travel costs and wages associated with any time spent obtaining the medical examinations and evaluations.

– At reasonable times and places.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.060. WSR 06-08-087, § 296-856-30030, filed 4/4/06, effective 9/1/06.]

### WAC 296-856-30040 Multiple LHCP review.

**IMPORTANT:**

• This section applies each time a medical examination or consultation is performed to determine whether medical removal or restriction is required.

**You must:**

• Promptly notify employees that they may seek a second medical opinion from an LHCP of their choice, each time a medical examination or consultation is conducted by an LHCP selected by the employer to evaluate medical removal.

– At a minimum, this notification must include the details of your multiple physician review process.

**Note:** Notification may be provided in writing or by verbal communication.

**You must:**

• Complete requirements in the multiple LHCP review process once you have been informed of an employee's decision to seek a second medical opinion.

• Pay for and complete the multiple LHCP review process for employees who:

– Inform you in writing or by verbal communication that they will seek a second medical opinion.

– Initiate steps to make an appointment with the LHCP they select. This LHCP will be referred to as the second LHCP.

– Fulfill the previous actions to inform you, and initiate steps for an appointment, within fifteen days from receiving either your notification or the initial LHCP's written opinion, whichever is received later.

**Note:** This process allows for selection of a second LHCP and, when disagreements between LHCPs persist, for selection of a third LHCP.

### Multiple LHCP review process:

**Step 1:** Make sure the information required by Step 4 of the medical evaluation process is received by the second LHCP. This process is located in the section, Medical and emergency evaluations, WAC 296-856-30020.

– This requirement also applies when a third LHCP is selected.

**Step 2:** Allow the second LHCP to:

– Review findings, determinations, or recommendations from the original LHCP you selected;

**AND**

– Conduct medical examinations, consultations, and laboratory tests as necessary to complete their review.

**Step 3:** Obtain a written opinion from the second LHCP and make sure the employee receives a copy within five busi-

ness days from the date you receive it. If findings, determinations, and recommendations in the written opinion are:

- Consistent with the written opinion from the initial LHCP, you can end the multiple physician review process. Make sure you follow the LHCP's recommendations.

- Inconsistent with the written opinion from the initial LHCP, then you and the employee must make sure efforts are made for the LHCPs to resolve any disagreements.

- If the LHCPs quickly resolve disagreements, you can end the multiple physician review process. Make sure you follow the LHCP's recommendations.

- If disagreements are not resolved within thirty business days, continue to Step 4.

**Step 4:** You and the employee must work through your respective LHCPs to agree on the selection of a third LHCP, or work together to designate a third LHCP to:

- Review findings, determinations, or recommendations from the initial and second LHCP;

**AND**

- Conduct medical examinations, consultations, and laboratory tests as necessary to resolve disagreements between the initial and second LHCP.

**Step 5:** Obtain a written opinion from the third LHCP and make sure the employee receives a copy within five business days from the day you receive it.

- Follow the third LHCP's recommendations, unless you and the employee agree to follow recommendations consistent with at least one of the three LHCPs.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-30040, filed 4/4/06, effective 9/1/06.]

#### **WAC 296-856-30050 Medical records.**

**IMPORTANT:**

- This section applies when a medical evaluation is performed or any time a medical record is created for an employee exposed to formaldehyde.

**You must:**

- Establish and maintain complete and accurate medical records for each employee receiving a medical evaluation for formaldehyde and make sure the records include all the following:

- The employee's name and unique identifier.

- A description of any health complaints that may be related to formaldehyde exposure.

- A copy of the licensed health care professional's (LHCP's) written opinions.

- Exam results.

- Medical questionnaires.

- Maintain medical records for the duration of employment plus thirty years.

**Note:** • Employee medical records need to be maintained in a confidential manner. The medical provider may keep these records for you.

- Medical records may only be accessed with the employee's written consent.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-30050, filed 4/4/06, effective 9/1/06.]

#### **WAC 296-856-400 Exposure control areas.**

**Your responsibility:**

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To control employee exposure to airborne formaldehyde and protect employees by using appropriate respirators.

**IMPORTANT:**

- These sections apply when employee exposure monitoring results are above the permissible exposure limit (PEL):
  - The 8-hour time-weighted average (TWA<sub>8</sub>) of 0.75 parts per million (ppm);

**OR**

- The 15-minute short-term exposure limit (STEL) of two parts per million (ppm).

**Section contents:**

Exposure controls

WAC 296-856-40010.

Establishing exposure control areas

WAC 296-856-40020.

Respirators

WAC 296-856-40030.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-400, filed 4/4/06, effective 9/1/06.]

#### **WAC 296-856-40010 Exposure controls.**

**IMPORTANT:**

- Respirators and other personal protective equipment (PPE) are **not** exposure controls.

**You must:**

- Use feasible exposure controls to reduce employee exposures to a level below the permissible exposure limit (PEL) or to as low a level as achievable.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-40010, filed 4/4/06, effective 9/1/06.]

#### **WAC 296-856-40020 Establishing exposure control areas.**

**You must:**

- Establish temporary or permanent exposure control areas where airborne concentrations of formaldehyde are above either the 8-hour time weighted average (TWA<sub>8</sub>) or the 15-minute short-term exposure limit (STEL), by doing at least the following:

- Clearly identify the boundaries of exposure control areas in any way that minimizes employee access.

- Post signs at access points to exposure control areas that:

- Are easy to read (for example, they are kept clean and well lit);

**AND**

- Include this warning:

<p><b>DANGER</b></p> <p><b>Formaldehyde</b></p> <p><b>Irritant and Potential Cancer Hazard</b></p> <p><b>Authorized Personnel Only</b></p>
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**Note:** This requirement does not prevent you from posting other signs.

**You must:**

- Allow only employees, who have been trained to recognize the hazards of formaldehyde exposure, to enter exposure control areas.

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- Note:**
- When identifying the boundaries of exposure control areas you should consider factors such as:
    - The level and duration of airborne exposure.
    - Whether the area is permanent or temporary.
    - The number of employees in adjacent areas.
  - You may use permanent or temporary enclosures, caution tape, ropes, painted lines on surfaces, or other materials to visibly distinguish exposure control areas or separate them from the rest of the workplace.

**You must:**

- Inform other employers at multi-employer work sites of the exposure control areas, and the restrictions that apply to those areas.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-40020, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-40030 Respirators.****IMPORTANT:**

- The requirements in this section are in addition to the requirements found in the following separate chapters:
  - Respiratory hazards, chapter 296-841 WAC.
  - Respirators, chapter 296-842 WAC.
- Medical evaluations meeting all requirements of Medical and emergency evaluations, WAC 296-856-30020, will fulfill the medical evaluations requirements found in Respirators, chapter 296-842 WAC, a separate chapter.

**You must:**

- Develop, implement, and maintain a respirator program as required by chapter 296-842 WAC, Respirators, which covers each employee required by this chapter to use a respirator.
    - Require that employees use respirators in any of the following circumstances:
      - Employees are in an exposure control area.
      - Feasible exposure controls are being put in place.
      - Where you determine that exposure controls are not feasible.
      - Feasible exposure controls do not reduce exposures to, or below, the PEL.
      - Employees are performing tasks presumed to have exposures above the PEL.
      - Emergencies.
  - Select, and provide to each employee who uses a respirator required by this chapter, an appropriate respirator as specified in this section and in WAC 296-842-13005 in the respirator rule.
    - Equip full-facepiece air-purifying respirators with cartridges or canisters approved for protection against formaldehyde.
    - Provide to employees, for escape, one of the following respirator options:
      - A self-contained breathing apparatus operated in demand or pressure-demand mode;
- OR**
- A full-facepiece air-purifying respirator equipped with a chin-style, or front- or back-mounted industrial size canister or cartridge.
    - Make sure all air-purifying respirator use is accompanied by eye protection either through the use of full-facepiece models or effective, gas-proof chemical goggles.

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- Provide employees with powered air-purifying respirators (PAPRs) when:
  - The employee has difficulty using a negative pressure respirator or a LHCP recommends this type of respirator;

**AND**

- The employee chooses to use this type of respirator.
- Replace the chemical cartridges or canisters on air-purifying respirators;
  - When indicated by NIOSH-approved, end-of-service-life indicators if these are used;

**OR**

- When NIOSH-approved ESLIs aren't used:
    - At times specified by your cartridge change schedule;
- OR**
- At the end of the work shift, when this occurs before the time indicated by your cartridge change schedule.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 09-15-145, § 296-856-40030, filed 7/21/09, effective 9/1/09; WSR 07-05-072, § 296-856-40030, filed 2/20/07, effective 4/1/07; WSR 06-08-087, § 296-856-40030, filed 4/4/06, effective 9/1/06.]

**WAC 296-856-500 Definitions.****Action level**

An airborne concentration of formaldehyde of 0.5 parts per million of air calculated as an 8-hour time-weighted average.

**Authorized personnel**

Individuals specifically permitted by the employer to enter the exposure control area to perform duties, or to observe employee exposure evaluations as a designated representative.

**Breathing zone**

The space around and in front of an employee's nose and mouth, forming a hemisphere with a six- to nine-inch radius.

**CAS (chemical abstract service) number**

CAS numbers are internationally recognized and used on material safety data sheets (MSDSs) and other documents to identify substances. For more information see <http://www.cas.org>

**Canister or cartridge (air-purifying)**

Part of an air-purifying respirator that consists of a container holding materials such as fiber, treated charcoal, or a combination of the two, that removes contaminants from the air passing through the cartridge or canister.

**Container**

Any container, except for pipes or piping systems that contains formaldehyde. It can be any of the following:

- Barrel.
- Bottle.
- Can.
- Cylinder.
- Drum.
- Reaction vessel.
- Shipping containers.
- Storage tank.

**Designated representative**

Any one of the following:

- Any individual or organization to which an employee gives written authorization.
- A recognized or certified collective bargaining agent without regard to written employee authorization.

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- The legal representative of a deceased or legally incapacitated employee.

**Emergency**

Any event that could or does result in the unexpected significant release of formaldehyde. Examples of emergencies include equipment failure, container rupture, or control equipment failure.

**Exposure**

The contact an employee has with formaldehyde, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry such as inhalation, ingestion, skin contact, or skin absorption.

**Formaldehyde**

An organic chemical with the formula of HCHO, represented by the chemical abstract service (CAS) registry number 50-00-0. Examples of primary uses of formaldehyde and its solutions are as follows:

- An intermediate in the production of:
  - Resins.
  - Industrial chemicals.
- A bactericide or fungicide.
- A preservative.
- A component in the manufacture of end-use consumer items such as cosmetics, shampoos, and glues.

**Licensed health care professional (LHCP)**

An individual whose legally permitted scope of practice allows him or her to provide some or all of the health care services required for medical evaluations.

**Permissible exposure limits (PELs)**

PELs are employee exposures to toxic substances or harmful physical agents that must not be exceeded. PELs are also specified in WISHA rules found in other chapters. The PEL for formaldehyde is an 8-hour time-weighted average (TWA<sub>8</sub>) of 0.75 parts per million (ppm) and a 15-minute short-term exposure limit of 2 ppm.

**Short-term exposure limit (STEL)**

An exposure limit averaged over a 15-minute period that must not be exceeded during an employee's workday.

**Time-weighted average (TWA<sub>8</sub>)**

An exposure limit averaged over an 8-hour period that must not be exceeded during an employee's workday.

**Uncontrolled release**

A release where significant safety and health risks could be created. Releases of hazardous substances that are either incidental or could not create a safety or health hazard (i.e., fire, explosion, or chemical exposure) are not considered to be uncontrolled releases.

Examples of conditions that could create a significant safety and health risk are:

- Large-quantity releases.
- Small releases that could be highly toxic.
- Potentially contaminated individuals arriving at hospitals.
- Airborne exposures that could exceed a WISHA permissible exposure limit or a published exposure limit and employees are not adequately trained or equipped to control the release.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 06-08-087, § 296-856-500, filed 4/4/06, effective 9/1/06.]