

WAC 296-849-11030 Exposure evaluations.

IMPORTANT:

- 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 chapter 296-841 WAC, Airborne contaminants.

You must conduct an employee exposure evaluation to accurately determine airborne concentrations of benzene by completing Steps 1 through 7 of the exposure evaluation process, each time any of the following apply:

- (1) No evaluation has been conducted.

You have up to thirty days to complete an evaluation once benzene is introduced into your workplace.

- (2) Changes have occurred in any of the following areas that may result in new or increased exposures:

- (a) Production.

- (b) Processes.

- (c) Exposure controls such as ventilation systems or work practices.

- (d) Personnel.

- (3) You have any reason to suspect new or increased exposure may occur.

- (4) Spills, leaks, or other releases have been cleaned up.

Note: As part of your exposure evaluation after cleanup, you will make sure exposure monitoring results have returned to pre-release levels.

Exposure evaluation process.

IMPORTANT:

- If you are evaluating employee exposures during cleaning and repair of barges and tankers that contained benzene:

- Collect samples that effectively measure benzene concentrations that employees may be exposed to;

AND

- Skip to Step 7.

Following the exposure evaluation process is not necessary when you have documentation conclusively demonstrating benzene exposures for a particular operation and material cannot exceed the action level (AL) during any conditions reasonably anticipated.

- (a) Documentation can be based on data or qualitative information, such as information about:

- (i) The material.

- (ii) How the material is handled.

- (iii) The work conditions.

- (b) Retain this documentation for as long as you rely on it.

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

Step 2: Identify operations where fifteen-minute exposures could exceed benzene's short-term exposure limit (STEL) of 5 parts per million (ppm).

- Include operations where it is reasonable to expect high, fifteen-minute exposures, such as operations where:

- Tanks are opened, filled, unloaded, or gauged.

- Containers or process equipment are opened.

- Benzene is used as a solvent for cleaning.

Note: You may use monitoring devices such as colorimetric indicator tubes or real-time monitors to screen for activities where employee exposure monitoring results could be high.

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

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

- Make sure the exposures of the employees selected represent eight-hour exposures for **all** employees identified at Step 1, including each job classification, work area, and shift.

Note: A written description of the procedure used for obtaining representative employee exposure monitoring results needs to be kept as part of your exposure records required by this chapter in Exposure records, WAC 296-849-11090. This description can be created while completing Steps 3 through 6 of this exposure evaluation process.

Step 5: Determine how you will obtain employee monitoring results.

- Select and use a method that is accurate to $\pm 25\%$, with a confidence level of 95%.

Note:

- Here are examples of methods that meet this accuracy requirement:
 - OSHA Method 12 for air samples, found by going to <http://www.osha.gov/dts/sltc/methods/toc.html>.
 - NIOSH Method 1500, found by going to <http://www.cdc.gov/niosh/homepage.html> and link to the *NIOSH Manual of Analytical Methods*.

Step 6: Obtain employee exposure monitoring results by collecting air samples representing employees identified at Step 1.

- Collect fifteen-minute samples from employees selected at Step 3.

- Sample at least one shift representative of the eight-hour exposure for each employee selected at Step 4.

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

- Collecting area samples is permitted after emergency releases.

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 of monitoring representative of eight-hour exposures:
 - Collect one or more continuous samples, for example, a single eight-hour sample or four two-hour samples.
 - Take a minimum of five brief samples, such as fifteen-minute samples, during the work shift and at times selected randomly.
 - For work shifts longer than eight hours, monitor the continuous eight-hour portion of the shift expected to have the highest average exposure concentration.

Step 7: Have the samples you collected analyzed to obtain monitoring results representing eight-hour and fifteen-minute exposures.

- Go to the scope of this chapter, WAC 296-849-100, and compare employee exposure monitoring results to the **values** found in Step 2a and follow Step 2b to determine if additional sections of this chapter apply.

Note:

- You may contact your local WISHA consultant for help:
 - Interpreting data or other information.
 - Obtaining eight-hour or fifteen-minute employee exposure monitoring results.
- To contact a WISHA consultant:
 - Go to another chapter, the Safety and health core rules, chapter 296-800 WAC, and find the resources section, and under "other resources," find service location for labor and industries.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. WSR 18-22-116, § 296-849-11030, filed 11/6/18, effective 12/7/18; WSR 07-05-062, § 296-849-11030, filed 2/20/07, effective 4/1/07; WSR 05-13-152, § 296-849-11030, filed 6/21/05, effective 8/1/05; WSR 05-01-172, § 296-849-11030, filed 12/21/04, effective 3/1/05.]