

**OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) -
REGULATIONS FOR RESPIRATORY PROTECTION****1910.134(a)(1)**

In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to this section.

1910.134(a)(2)

A respirator shall be provided to each employee when such equipment is necessary to protect the health of such employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program, which shall include the requirements outlined in paragraph (c) of this section. The program shall cover each employee required by this section to use a respirator.

TRILOGY'S POLICY

In accordance with the OSHA Regulations above, Trilogy will provide a systematic method for performing Qualitative Fit Testing for employees required to wear respiratory protection due to potential contact with infectious airborne particles.

PURPOSE

Qualitative fit testing is a method that uses the sense of taste or smell, or the participant's reaction to an irritant, in order to detect leakage into the respirator facepiece or confirm a proper fit. Qualitative fit testing does not measure the leakage amount. The respirator passes or fails based on the participant detecting leakage of the test substance into the facepiece.

PROCEDURES

Note: Participants with a beard or long sideburns cannot be fit tested due to the inability to get a good facial seal. Employees are required to be clean shaven.

Reference Fit Testing Video by 3M: <https://www.youtube.com/watch?v=xI4qX6qEYXU>

Preparation

1. Attach hood to collar by placing drawstring between flanges on collar. Tighten draw strings and tie with square knots or a bow.
2. Pour small amount of solution (approximately one teaspoon) of the Sensitivity Solution into the nebulizer labeled " #1Sensitivity Test Solution"
3. Pour the same amount of Fit Test Solution (#2) into the second nebulizer labeled "2 Fit Test Solution"
4. Immediately recap the bottles.

Sensitivity Test

This test is done to assure that the participant being fit tested can detect the sweet taste of the test solution at very low levels. The Sensitivity Test Solution is a diluted version of the Fit Test Solution.

The test subject should not eat, drink (except water), or chew gum for 15 minutes before the test.

1. Have the employee put on the hood and collar assembly without respirator.
2. Position the hood assembly forward so that there is about 6 inches between the subject's face and the hood window.
3. Instruct the employee to breathe through his/her mouth, tongue extended.
4. Using the Nebulizer #1 with the Sensitivity Test Solution (#1), inject the aerosol into the hood allowing the bulb to expand fully on each squeeze. Both plugs on the nebulizer must be removed from the openings during use. The nebulizer must be held in an upright position to ensure aerosol generation.
5. Ask the employee if the sweet taste of the solution is detected. If tasted, note the number of squeezes as 10 and proceed to the Fit Test.
6. If not tasted, inject an additional 10 squeezes of the aerosol into the hood. Repeat with 10 more squeezes if necessary. Note whether 20-30 squeezes produced a taste response.
7. If 30 squeezes are inadequate, (the employee does not detect a sweet taste), the test is ended. Remove the test hood from the employee.

Fit Test

1. Have the employee don the respirator and perform a user seal check.
2. Have the employee put on and position the test hood as before and breathe through his/her mouth with tongue extended.
3. Using Nebulizer #2 with Fit Test Solution (#2), inject the fit test aerosol using the same number of squeezes as required in the Sensitivity Test (10, 20, 30). A minimum of 10 squeezes is required, fully collapsing and allowing the bulb to expand fully on each squeeze. The nebulizer must be held in an upright position to ensure aerosol generation.
4. To maintain an adequate concentration of aerosol during the test, inject one-half the number of squeezes (5, 10, 15) every 30 seconds for the duration of the fit test procedure.
5. After the initial injection of the aerosol, ask the employee to perform the following test exercises for 60 seconds each:
 - a. Normal breathing- In a normal standing position, without talking, the employee shall breathe normally.
 - b. Deep breathing- In a normal standing position, the employee shall breathe slowly and deeply without hyperventilating.
 - c. Turning head side to side- standing in place, the subject shall slowly turn his/her head from side to side between the extreme position of each side. The head shall be held at each extreme momentarily so the employee can inhale at each side.
 - d. Moving head up and down – Standing in one place, the employee will slowly move his/her

- head up. The employee should be instructed to inhale in the up position (i.e. when looking toward the ceiling).
- e. Talking- the employee will talk out loud slowly and loud enough to be heard clearly by the test conductor. The employee can read from a paragraph test, count backwards from 100, or recite a memorized poem or song.
 - f. Bending over- the employee will bend at the waist as if he/she were to touch his/her toes. Jogging in place can be substituted for this exercise.
 - g. Normal Activities- Same as exercise A.
6. The test is terminated at any time the sweet taste of the aerosol is detected by the employee, as this indicates an inadequate fit. The equipment should be removed, and the process can start again after 15 minutes (sensitivity test then fit test if passed).
 7. Repeat the fit test after redonning and readjusting the respirator. A second failure may indicate the respirator is not appropriate for the employee.
 8. If the test is completed without the subject detecting the sweet taste of aerosol, the test is successful, and the respirator fit has been demonstrated.
 9. Periodically check the nebulizer to make sure that it is not clogged. If clogging is found, clean the nebulizer and retest.

Cleaning

After each employee wears the hood, it must be wiped down with a germicide.

At the end of each session, or at least every 4 hours, discard the unused solution from the nebulizers. **DO NOT POUR USED SOLUTION BACK INTO THE BOTTLES.** Rinse nebulizers with warm water to prevent clogging and shake dry. Wipe out the inside of the hood with a damp cloth or paper towel to remove any deposited Test Solution after each fit test.

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