At times, employees may have to work with chemicals or materials that have the potential to become harmful airborne substances. When these respiratory hazards are present, Cal/OSHA (Title 8, Section 5141) requires employers to implement measures that will prevent harmful exposure to employees.

Cal-OSHA requires employers to control respiratory hazards in order of priority:

1. Eliminate the contaminants or substitute them with less toxic materials
2. Implement engineering controls (e.g., by enclosing or isolating the process or by using dilution ventilation or local exhaust ventilation)
3. Apply administrative controls (e.g., by reducing the amount of time that employees are exposed to toxic materials or by modifying the employees’ work practices)
4. Provide Personal Protective Equipment (PPE)

Note that PPE is used as a last resort for controlling hazards, but may be used in combination with elimination, substitution, engineering, or administrative controls.

**Respirators** are a form of PPE and are devices used to reduce workers’ exposure to respiratory hazards, such as fumes, mists, gases, vapors, or harmful dusts.

**Types of Respirators**

Different types of respirators are designed to protect against specific respiratory hazards. The unique atmosphere and air contaminant levels in a worksite dictate the type of respirator that must be worn.

**Air-purifying respirators (APRs)**

These remove gases, vapors, particulates, or a combination of these hazards through the use of filters, cartridges, or canisters. Examples:

- Filtering facepiece respirators (dust masks)
- Tight-fitting respirators – either half mask or full facepiece
- Powered air-purifying respirators (PAPR) – purified air is supplied via a battery-powered blower

**Atmosphere-Supplying Respirators**

These provide clean breathing air from an uncontaminated source instead of filtering out contaminants.

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**What I Need to Know...**

If you are concerned about exposure to harmful airborne substances...

1. Immediately speak with your supervisor about your concerns
2. Your supervisor will contact the Occupational Health Division at injuryprevention@usc.edu
3. A staff member from the Occupational Health Division will schedule an evaluation of your workplace with your supervisor and conduct sampling (if necessary).

**Fit Testing**

To obtain adequate respiratory protection, a proper match must exist between the respirator and the wearer. Fit testing is required before the initial use of a respirator, whenever an employee uses a different respirator facepiece, and at least annually. Respirator users cannot have facial hair that may interfere with the face-to-facepiece seal during fit testing procedures.

For more information, please contact the Office of Environmental Health and Safety at injuryprevention@usc.edu or (323) 442-2200.

**Additional Information and references**

- NIOSH Workplace Safety & Health Topics: Respirators [http://www.cdc.gov/niosh/topics/respirators/](http://www.cdc.gov/niosh/topics/respirators/)

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