**Respirator Training**

**Half-Face Cartridge Respirators**

Elk Grove Unified School District
Risk Management

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**Respirator Training**

**Half-face & Full-face Cartridge Respirators**

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**Respirator Training**

**Why is This Training Required?**

Training is required by Cal/OSHA for anyone who wears a respirator. So you will know how to protect your health. If you don’t know how to use a respirator properly, you can get a false sense of protection.

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**Respiratory Protection Program**

Eliminate the Need for Respiratory Protection.

- Using respiratory protection in the workplace can be beneficial, but it can also be a liability.
- Respirators can hinder employees' comfort and productivity, and their use always carries the risk of unexpected overexposures.
- Respiratory protection should be used as the last resort in preventing harmful exposures to your employees and not as a substitute for other feasible control measures.

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**Respirator Training**

**Respirator Program Administrator**

Our respirator administrator is Vanessa Ham. This person is responsible for overseeing our respirator program. This person has training on respirators.

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**When and Why Respirators Should Be Used**

- To reduce workers’ exposure to respiratory hazards, such as fumes, mists, gases, vapors, or harmful dusts.
- To protect workers against oxygen-deficient atmospheres.
How do we control air contaminants?

- Eliminate the contaminants or substitute them with less toxic materials
- Implement engineering control measures (such as enclosing or isolating the process or by using dilution ventilation or local exhaust ventilation)
- Use administrative controls (e.g., by reducing the amount of time that employees are exposed to toxic materials or by modifying the employee’s work practices)

Appropriate respirators must be used:

- When the controls listed are not feasible
- While the controls are being instituted
- When the controls are not sufficient to reduce respiratory hazards to a level below established exposure limits
- During emergencies

How Respirators Work

How Do Cartridge Respirators Work?

When used properly, respirators prevent the inhalation of chemicals and dust in the air and protect the lungs.

When you inhale, air is pulled through the cartridge, where air contaminants are trapped.

How Respirators Work

Respirator Cartridges

Use the Right Cartridge For the Job

The wrong cartridge won’t protect you from dust or chemicals in the air.

A chemical cartridge doesn’t filter out dust.

There are several kinds of chemical cartridges.

Combination dust/chemical cartridges are available.

Air movement is controlled by rubber inhalation and exhalation valves.

The adjustable straps are used to keep the respirator snug on the face.
**Respirator Cartridges**

**Types of Cartridges**

Dust cartridges filter out dust only.
Chemical cartridges trap different types of chemicals, but not dust.
Cartridges are color-coded for the type of chemical or dust.

**Respiratory Cartridges**

**Respirator Cartridge Color Coding**

- Ammonia - green
- Organic vapor (solvents) - black
- Acid gas (sulfuric acid, for example) - white
- Acid gas and organic vapor - yellow
- Dust, fumes, mists, asbestos, radionuclides and highly toxic particulates fileter – Purple (Magenta)
- Chlorine – white & yellow

These are some commonly used chemical cartridges

**Respirator Cartridges**

**Changing Cartridges**

Cartridges must be changed regularly.
Dust cartridges are changed when they become difficult to breathe through or are damaged.
Chemical cartridges are changed on a pre-determined schedule.

**Respirator Protection**

**Half-face Respirator Protection Factor**

Half-face cartridge respirators only provide protection to levels 10 times above the chemical or dust permissible limit.

Example

Ammonia Permissible Limit – 25 ppm
Respirator Protection Factor for ammonia – 250 ppm

ppm = parts per million

**Respirator Protection**

**Full-face Respirator Protection Factor**

Full-face respirators can provide protection to levels 100 times above the permissible limit.
Full-face respirators also provide eye protection for irritating chemicals.
Respirator Protection

What is a Chemical “IDLH” Level?

“IDLH” means “immediately dangerous to life or health”. Most chemicals have an IDLH level where cartridge respirators can’t be worn. A cartridge respirator is too prone to leaking to use at levels above IDLH. The only alternative is a supplied air respirator.

Respirator Protection

Where Cartridge Respirators Don’t Work

Cartridge respirators are not good for large chemical spills or leaks, or thick dust clouds. Don’t use them in emergency situations – they won’t provide enough protection. In the event of a major leak or spill, leave the area.

Respirator Protection

Where Cartridge Respirators Don’t Work

Cartridge respirators don’t work where there is a lack of oxygen. Confined spaces like tanks or manholes can have an oxygen deficiency or high levels of toxic chemicals.

Respirator and Physical Fitness

Medical Evaluations

Medical evaluations are required for anyone wearing respirators. Breathing through a respirator is work for the body. Respirators can be hazardous to people with heart or lung problems.

Respirator and Physical Fitness

Medical Questionnaire

The first step is a confidential medical questionnaire. A healthcare provider decides if you need a medical exam. Results are only used to determine if you are fit to wear a respirator.

Respirator Fit

Respirators Must Fit Properly

Respirators must fit properly to prevent leaks around the edges. Fit-testing must be done before first wearing a respirator. Beards are not allowed when wearing a respirator.
Respirator Fit

Fit-testing

In fit-testing, you first try on several types and sizes of respirators.
After a comfortable respirator is selected, we conduct the actual fit-test.
The method we use for fit-testing is the saccarin test.

Respirator Problems

When it Smells Bad or You Feel Sick

Sometimes, respirators don’t work.
If you notice an odor or feel ill, or think your respirator leaks, notify your supervisor.
Leave the area when necessary.

Respirator Maintenance

How to Clean and Maintain Respirators

Respirators must be cleaned, inspected and maintained regularly.
Cleaning is especially important in dusty areas.
Clean in warm soapy water.
Allow to dry thoroughly before storing or using.

Respirator Storage

How Should Respirators be Stored?

Respirators must be stored in a clean dry place.
Don’t store them unprotected in your work area.
Your supervisor will get you a container or bag to store your respirators.

Respirator Regulations

Cal/OSHA Regulations

Cal/OSHA has regulations on respirator use.
Everything covered in this training is required in these regulations.
Respirator Training

Question 1
What kind of cartridge is needed for ammonia?
   a) A large one
   b) A chemical cartridge
   c) A black one
   d) Any kind will work

Question 2
When should a chemical cartridge be changed?
   a) Every day
   b) When it is hard to breathe through
   c) When you feel like it
   d) On a regular basis depending on the chemical

Question 3
Why can’t you wear a respirator over a beard?
   a) The beard will interfere with your breathing
   b) It will cause the respirator to leak
   c) It will cause skin irritation
   d) It will look stupid

Question 4
When is a half-face or full-face respirator not protective enough?
   a) In the case of a large chemical spill
   b) When you have to talk to other employees
   c) When you have to enter a tank
   d) When your eyes burn

Question 5
What does it mean if you smell a chemical while wearing your respirator?
   a) The cartridge is used up
   b) The respirator doesn’t fit properly
   c) The exhalation valve is missing
   d) You have a very sensitive nose