
THE PESTICIDE REVIEW

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Preventing Heat Related Illnesses

The Human Body and Heat.



When a person has performed a strenuous activity on a hot day and has not properly regulated their activity or fluid intake, their body's inner core temperature can rise to the point where the body loses its ability to cool itself. When the body's internal temperature rises above 98.6°F, the heart will begin pumping harder, circulating the blood in capillaries close to the surface of our skin in attempt to cool down the body. Sweat is also produced to help drain heat away from the body. When the body's cooling mechanisms can't keep up with the heat, the body will start sending signals that something is wrong. It's important for everyone, especially those that work in the heat, to recognize these symptoms.

Heat Cramps:

People that usually sweat a lot during strenuous activities can be affected by heat cramps. Profuse sweating can deplete the body of salts and moisture, causing cramping or spasms in the abdomen, arms, or legs. The Center for



Disease Control & Prevention recommends that people with heart problems or on a low-sodium diet get immediate medical attention for heat cramps. For all others:

1. Stop your physical activity, and quietly sit in a cool place.
2. Drink a sports drink or clear juice
3. Don't resume your physical activity for a few hours after the cramps subside.

If the heat cramps don't disappear after an hour, seek medical attention.

Heat Exhaustion:

People exercising or working in a hot environment can suffer from heat exhaustion if they don't replenish the fluids in their body. The warning signs of heat exhaustion include: heavy sweating, paleness, weakness, muscle cramps, headache, nausea, or fainting. If these symptoms are severe, seek medical attention. For others, follow the steps above for heat cramps.

Heat Stroke:

Heat stroke occurs when a person is no longer able to regulate their temperature. The body's temperature can rise to 106°F or higher within 10 - 15 minutes. Other symptoms include red, hot skin, no sweating, rapid strong pulse, throbbing headache, dizziness, nausea, confusion, and possible unconsciousness. If you should see these signs in someone, you are dealing with a life-threatening emergency. Have someone call 911 and do the following before the paramedics arrive:

1. Get the victim to a cooler environment
2. Reduce the body temperature with whatever methods you can. Put the person in a cool tub of water, spray them with a garden hose, sponge the person with a wet cloth, etc.
3. If medical attention is delayed, call the hospital for further instructions.

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Respirators

Protecting against
contaminates



The human lung is an amazing organ. It's contained inside the body, yet it is in constant interaction with the atmosphere outside the body. Each day, an average adult breathes in approximately 8,000 - 9,000 liters of air. This air meets and oxygenates 8,000 - 10,000 liters of circulated blood. To accomplish this astonishing task, the human lungs have a very large surface area, some of which is extremely thin to maximize gas exchange. The surface area of a pair of human lungs is approximately 160 m². This equates to approximately the size of a tennis court!

Because our lungs are designed to take in so much air on a daily basis, this action can expose the human body to a number of contaminants. Spray mists, gases, organic vapors, dusts, and particulates are examples of some inhalation hazards. When protecting employees in the workplace against potential inhalation hazards, effective engineering controls and work practice are the best means to protect workers. When these practices can't provide the needed level of protection, a respirator must be used to protect workers from being exposed to a hazardous PEL.

What is a PEL?

PEL stands for "Permissible Exposure Limits". These limits are set by the US EPA to protect workers from contaminants in the work place. Different materials will have varying PEL limits. For example, the pesticide sulfuryl fluoride (Vikane) has a PEL of 5 ppm, whereas propane has a PEL of 1000 ppm.

Why shouldn't respirators be used as a first line of defense against contaminants?

It is best to use engineering controls to limit the exposure to a chemical rather than to rely on safety gear to do the job. Relying solely on a respirator to protect a worker from a contaminant is risky. A cracked seal on a respirator or saturated cartridges can easily expose a worker to a toxin.

An engineering control is basically any action or device that can be used as a first defense against a toxic material. Examples of engineering controls include positive pressure tractor cab, use of forced ventilation, or the choice to use a less toxic chemical.

When it's not practical to use an engineering control, pest control operators must rely on spray techniques and respirators to provide a suitable level of protection. When employees spray house eaves, trees, crawl spaces under a house, or places where spray mists may enter an employee's breathing zone, good spray techniques and respirators are essential.

When do you need to change respirator cartridges?

The need to change a respirator cartridge is based on many different factors. Respirator manufacturers give their users guidelines to follow when it comes to this subject. Many will suggest a certain "change-out" schedule. However, experience and professional judgment should also be used when you design your respiratory program.

Respirators do have limitations, so it is vital that all manufacturers' instructions are followed. All respirator cartridges have a limited service life and there are many variables that can limit the use of a respirator cartridge. Some of the factors limiting the life of cartridges are the hazardous material's concentration, outside humidity, temperature, and the user's breathing rate. Once the cartridge reaches its capacity, the material you are hoping to filtrate can pass through the cartridge and contaminate the worker.

Respiratory Training Plan - §6738(h)(3)

Every employer that has employees using respirators must have a written operating procedure that describes their respiratory program. These procedures must describe how to select, fit, clean, sanitize, inspect, and maintain respiratory protective equipment. Many companies will incorporate the written booklet that comes with their employee's respirators into their training packet. Most of these respirator information booklets provide great detail on how to select, fit, clean, and maintain the respirator. Incorporating these booklets into your respiratory program is an acceptable way to comply with this section. If you decide to use the booklet as a training guide and an integral part of your written respiratory program, make sure you keep a respirator booklet with your training materials to show that you have complied with all of the requirements of this code section.

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Respirators con't



Medical Condition Statements

Prior to an employee using a respirator, they must be informed that certain medical conditions may interfere with wearing a respirator. A medical condition statement must be on file for each employee assigned to work that requires the use of a respirator. When we perform employee headquarter records inspections, one of the problems we frequently find are medical condition statements where the employee has forgotten to mark "I have ___ " or "have no ___ " on the form. Make sure employees have signed and filled out these forms properly. If they mark "I have" on the form, they must have a physician's note stating they can wear a respirator for work.

Do employees have to sign medical condition statements each year?

While the code section regulating medical condition statements states that a medical statement must be on file for each employee, it does not state it must be done yearly. However, it is always a good idea to renew an employee's medical condition statement each year. People and their medical conditions do change. An employee who has used respirators in the past could develop a condition that could interfere with the use of a respirator today.

From the Question File:

What is the best way to dispose of Fumitoxin canisters?

Several things dictate the disposal of pesticide containers:

1. The label instructions.
2. Rinse and Drain procedures in the Code of Regulations Section 6684.
3. Local disposal requirements.

It's important to read the disposal requirements found in pesticide labeling. Labels will provide instructions for disposal. In the case of Fumitoxin, the label gives two options for container disposal. The first option gives instructions for empty flasks to be triple rinsed with water in open air. The triple rinsed flasks can then be punctured and disposed of in a sanitary landfill. The second option is to expose the empty flask and stopper to the open air until any remaining residue in the flask has reacted. The flask can then be punctured and disposed of in a sanitary landfill.

If your business is based in Santa Clara County, appropriately rinsed pesticide containers may be disposed of in a sanitary landfill. If you are based outside of our County, check with your local county regarding disposal / recycling procedures.

Preventing Heat Related Illnesses

Excerpts taken from the Center for Disease Control and Prevention and American Red Cross websites

Tips for managing the heat:

1. Drink more fluids! Even when you're not thirsty. If you are performing a strenuous activity, drink two to four glasses of water / sports beverage every hour.
2. Don't consume drinks that contain caffeine, alcohol, or large amounts of sugar. These ingredients can actually cause you to lose more body fluid. (Also be careful with very cold drinks because they can give you cramps)
3. If possible, wear lightweight, light-colored clothing.
4. For those wearing protective gear such as respirators, coveralls, etc, be careful with the heat! Try and schedule your applications during the cooler parts of the day. Or, switch to pesticides or applications that don't require coveralls or respirators.
5. To help protect against the sun, wear a wide brimmed hat and sunglasses. (If you are working outside and have to wear protective eyewear, we suggest safety glasses that have been tinted)
6. Wear sunscreen to help guard against sunburns. Sunburns slow the skin's ability to release heat.
7. Take frequent breaks. Give your body a chance to rest and cool down.