Respiratory Protection Meeting Kit

WHAT’S AT STAKE

Respirators are a type of personal protective equipment used to provide protection against worker exposure to airborne substances. Respirators are devices worn over the mouth, nose and sometimes the eyes, that help you breathe safely in a hazardous area. When airborne exposures cannot be controlled, or while controls are being installed, appropriate respirators may be used.

TYPES OF RESPIRATORS – 2 BASIC TYPES

There are two basic types of respirators- “air purifying respirators,” which filter out ambient air, and “atmosphere supplying respirators,” which provide clean air, from an uncontaminated source. Atmosphere supplying respirators provide a higher level of protection than air-purifying respirators.

Specific Types of Respirators

Dust mask respirator: Designed to capture particles such as dusts, mists, and fumes when the wearer inhales.

Half-face respirator: An atmosphere supplying respirator that covers only the mouth and nose and filters out contaminants when the wearer inhales.

Full-face respirator: Air-purifying respirator that covers the nose, mouth, eyes, and face and is especially useful under conditions where airborne contaminants are present that can cause eye irritation.

Positive-Pressure, Air-Purifying Respirator (PAPR): Respirator that uses a portable, battery-powered fan to draw ambient air into a filtering cartridge and then push the filtered air into the respirator’s face piece.

Air-supplying respirator: Also known as supplied-air respirators (SARs), these respirators use an independent source of breathing-quality air provided through a hose connected to the respirator's face piece.

WHAT'S THE DANGER

AIR QUALITY HAZARDS AT WORK

Air quality in the workplace should be one of the first hazards employers look for and address. The air we breathe has such a direct impact on our health. If there are dangerous fumes permeating the air at a job site, workers are being exposed to hazards before ever even starting the job or touching a piece of equipment.

Workers are most commonly susceptible to hazardous air qualities if they work in construction, manufacturing or agriculture industries. In these industries and others, respiratory hazards can include gases such as ammonia and carbon monoxide, vapors such as gasoline and chloroform, dust such as particles of coal and grain, mists such as spray paint and chemical steam, and fumes caused by welding and smelting.

HEALTH HAZARDS GENERATED BY POOR AIR QUALITY

The most serious of acute complications is breathing air problems, which commonly occur after exposure to methylbenzene, a substance used to manufacture paint thinners and perfumes.

- The kidneys can be negatively affected by long-term exposure to mercury, which is used to manufacture batteries and thermometers. Lung cancer can result from long-term exposure to asbestos or silica, which can often be found on construction job sites. Long-term exposure to chloroform, which is used to manufacture refrigerants and solvents, can lead to liver failure.
- Health problems that develop quickly as a result of exposure to airborne contaminants include itchy and watery eyes, irritated skin, headaches, and breathing problems. Eye

irritation may occur immediately after exposure to sulfuric acid, which is used to manufacture fertilizers, detergents, lead-acid batteries, and dyes.
- Headaches and dizziness may occur immediately after exposure to carbon monoxide, which is commonly used in the manufacturing, heating, and cooling industries. An individual may notice skin irritation immediately after exposure to ammonia, commonly used in fertilizers and cleansers.
- Workers especially have to be careful to avoid exposure to Immediately Dangerous to Life and Health (IDLH) atmospheres. IDLH atmospheres cause irreversible adverse health effects and interfere with an individual’s ability to escape from the dangerous atmosphere, posing an instant threat to life.

HOW TO PROTECT YOURSELF

SAFETY TIPS FOR WORKERS IN RESPIRATOR USE

- Use respirators certified for use to protect against the contaminant you are working with. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
- Always inspect your respirator before use. Alert your supervisor and replace your respirator if you find a crack, puncture, tear, leak, or any other unusual condition.
- Check the face piece seal each time you wear your respirator. Proper face piece fit is critical.
- Keep your face shaved. Facial hair, head bands, bandannas or other objects that interfere with the face piece seal must be removed prior to wearing your respirator.
- Read and follow all instructions provided by the manufacturer on use, maintenance, cleaning and care.
- Use the correct cartridge for your respirator. Make sure cartridges are not expired.
- Keep track of your respirator so you don’t inadvertently use another employee’s respirator.
- Make sure you stay properly trained in the use and

maintenance of your respirator.

- Always replace disposable respirators with every use.
- When inserting filters into a half-mask or full-mask respirator facepiece, always remember to remove the protective covers from the filters.
- To ensure the highest level of protection for a given respirator, users should be properly fit tested.
- Change filters on half-mask or full-mask respirators frequently. The life of these filters will vary depending on the concentration of the hazard, the storage conditions and age of the filter.
- When working around airborne particles or debris, be sure to wear either a full-mask respirator or a face shield along with your respirator to protect your face.
- A respirator is a first line of defense, always be sure to work in a well-ventilated area whenever possible to help reduce the concentration of airborne hazards.

FINAL WORD

Breathing in airborne contaminants can cause breathing problems and lung problems in both the long and short term. Respirators are very effective at removing the risk of exposure.