

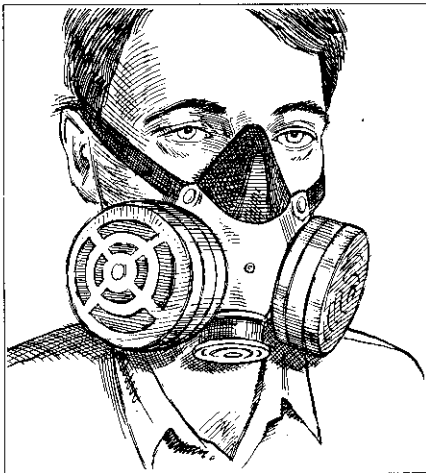
# Respiratory Protection

## *Air-Purifying Respirators*

Industrial safety has come a long way since the days when miners and other workers regularly suffered from chronic lung diseases that shortened their lives and left families without their earnings. The air-purifying respirator (APR) is directly responsible for the increased life expectancy of today's industrial workers. This broad class of respirators, used wherever the air is contaminated with low levels of particles, gases or toxic vapors, includes any device that filters or purifies the air in various ways. They may be half masks, which cover your nose and mouth, or full-face masks, which cover your eyes. Because each type of APR is useful only for a specific situation, it is important for you to know what contaminants exist in your work area and what respirator is right for them.

### Particle-Filtering Respirators

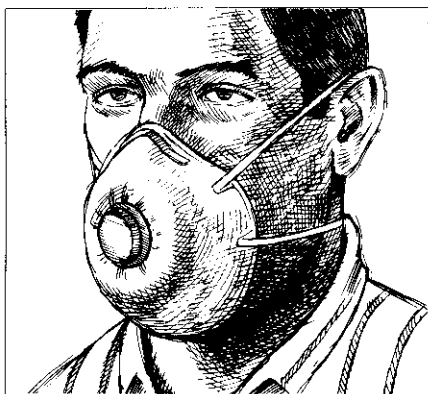
These respirators provide a physical barrier to dusts, mists, fumes and fibers from operations such as grinding, sawing, sanding, polishing, mining, and asbestos removal. The simplest ones are disposable and fit loosely over the nose and mouth. They must be replaced frequently as the pores in the filter become clogged with particles and breathing becomes difficult. While disposable respirators protect against contaminants that are not toxic in small amounts, more extreme hazards, such as asbestos fibers, require a respirator that fits tightly over the face and that contains a replaceable filter or one that can be removed and cleaned. These respirators do not protect against gases or oxygen deficiency.



Toxic gases or vapors are absorbed or neutralized by chemicals in cartridges. Use the right cartridge for the hazard and replace it regularly.

### Vapor- and Gas-Removing Filters

Gases and vapors (fumes from liquids such as solvents) are dissolved in the air and thus cannot be trapped by a particle filter. Respirators designed for these contaminants filter incoming air through one or more cartridges or canisters containing chemicals that either absorb or chemically change the offending gas. They may also have a particle barrier, and some respirators contain more than one type of cartridge for filtering several hazardous vapors at once. An exhalation valve allows air you breathe out to escape the mask and then closes so contaminated air cannot enter.



Use particle-filtering respirators to block dusts, fumes and fibers. Change masks often.

### Change Cartridges or Filters Regularly

Cartridges eventually get used up and must be replaced according to the schedule for your particular respirator and cartridge. Because each type of cartridge filters only a specific hazard, follow directions carefully to make sure that the cartridge is appropriate for the level of contaminants you encounter and that it is threaded correctly into place. Most cartridges are color-coded to identify their uses.



Keep your air-purifying respirator clean and inspect it often for cracks, dents or hardening.

### Good Maintenance

Keep your APR clean and inspect it regularly for cracks, dents or hardening. Always do positive and negative pressure tests each time you use your respirator, and, above all, if you have difficulty breathing or notice an odor, an irritation or a warming of the air you breathe, get out of the hazardous area immediately. Your respirator may be defective or need a fresh cartridge or filter. (But, don't wait until you notice an odor to change a cartridge because not all contaminants are detectable.) And remember, air-purifying respirators do not work in highly contaminated environments or in oxygen-deficient situations. Using the right respirator for the right task is your key to good health. 