A respirator is a device that protects an individual from inhaling dangerous substances, such as an infectious particle and chemicals. Respirators are among the most important pieces of protective equipment for working in hazardous environments. Even a simple dust mask can be considered as a respirator, and selecting the right respirator requires an assessment of the workplace operations.

Here at BYU, before you obtain a respirator you should have an assessment done by an experienced safety personnel. For more information about obtaining a respirator contact Risk Management at (801) 422-2943 or in the Fletcher Building 264.

**What is a Respirator?**

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**How do respirators work?**

Respirators work by either filtering particles from the air, chemically purifying the air or supplying clean air from an outside source.

There are four different types of respirators:

- **Particulate Respirators**
  - Filter out dusts, fumes and mists
  - Disposable or have disposable filters
  - Replaced when become discolored, damaged or clogged

Particulate respirators are the simplest, least expensive but least protective respirator type. These respirators protect against particles. However, they do not protect against chemicals, gases, or vapors. These respirators are commonly known as dust masks.
• Chemical Cartridge/Gas Mask Respirator
  o Uses replaceable chemical cartridges or canisters
  o Are color-coded
  o May require more than one cartridge to protect against multiple hazards
  o Can be half-mask or full-face respirator

Gas masks are also known as "air-purifying respirators" because they filter or clean chemical gases out of the air as you breathe. This respirator includes a facepiece or mask, and a cartridge or canister. Straps secure the facepiece to the head. The cartridge may also have a filter to remove particles.

Gas masks are effective only if used with the correct cartridge or filter for a particular biological or chemical substance. Selecting the proper filter can be a complicated process. There are cartridges available that protect against more than one hazard, but there is no "all-in-one" cartridge that protects against all substances. It is important to know what hazards you will face in order to be certain you are choosing the right filters/cartridges.

• Powered Air-Purifying Respirator (PAPR)
  o Use a fan to draw air through the filter
  o Easier to breathe through
  o Need to be fully charged
  o Use same type of filters/cartridges as other air-purifying respirators
  o Half-mask or full-face

• Self-Contained Breathing Apparatus (SCBA)
  o Provide clean air from a portable air tank
  o Half-mask or full-face

SCBA are commonly used by firefighters. They use their own air tank to supply clean air. They do not need a filter attached. They also protect against higher concentrations of dangerous chemicals. However, they are very heavy (30 pounds or more), and require very special training on how to use and to maintain them. Also, the air tanks typically last an hour or less depending upon their rating and your breathing rate.