

Environmental Health and Safety

Guidance Document

What is a Respirator?

A **respirator** is a protective device designed to help users breathe safely in environments where the air may be contaminated with harmful substances. Respirators are essential in various industries, including construction, healthcare, and manufacturing, where exposure to airborne pollutants can pose significant health risks. They function primarily in two ways: by removing contaminants from the air or by supplying clean air from an external source.

Types of Respirators

Air-Purifying Respirators (APRs) are designed to filter out harmful particles, gases, or vapors from the air before the user inhales. This category includes:

- **Particulate Respirators:** These devices filter out airborne particles, such as dust, smoke, and biological agents. A common example is the **N95 respirator**, which is designed to block 95% of very small (0.3 micron) particles. They are often referred to as **disposable respirators** because they are discarded after use due to hygiene concerns or physical damage.
- **Gas/Chemical Masks:** These respirators are equipped with filters that remove specific chemicals and gases from the air. They are often used in environments where exposure to toxic substances is a risk, such as in chemical manufacturing or during hazardous material handling.

Air-Supplying Respirators (ASRs) provide clean air from an external source, making them suitable for situations where the air is too contaminated for APRs to be effective. This category includes:

- **Airline Respirators:** These respirators deliver compressed air from a remote source, allowing users to breathe clean air while working in hazardous environments. They are often used in confined spaces or areas with high levels of airborne contaminants.
- **Self-Contained Breathing Apparatus (SCBA):** SCBAs are equipped with their own air supply, allowing users to operate in environments where there is no breathable air. They are commonly used by firefighters and emergency responders in situations involving smoke or toxic gases.

Summary of Differences

Type of Respirator	Functionality	Examples
Air-Purifying Respirators	Filters contaminants from the air	N95 respirators, gas masks
Air-Supplying Respirators	Supplies clean air from an external source	Airline respirators, SCBA