

Respirator Selection Guide

Respirators are among the most important pieces of protective equipment for working in hazardous environments. Selecting the right respirator requires an assessment of all the workplace operations, processes and environment. The identity of the hazard and its airborne concentrations need to be determined before choosing a respirator. This assessment should be done by experienced safety personnel or by an industrial hygienist.

Types of Respirators

Disposable Particulate Mask

These are generally the least expensive type, and offer the least amount of protection. They are designed mainly for particulate protection, and some offer “nuisance” odor protection from chemicals. They are available with optional features such as a face seal, exhalation valve and nose clip.

Air Purifying Respirators

These type of respirators can be either a filtering face piece, full-face or half masks with mechanical or chemical cartridges to filter dusts, mists, fumes, vapors or gases. They are available in three types: disposable, reusable, and disposable/reusable. Half and full face type cartridge respirators require a fit test to ensure a proper seal.

PAPR- Powered Air Purifying Respirators

Like the Air Purifying Respirators, these can filter particulate or chemical fumes, however these are loose fitting whole head covers, that do not require a fit test. They are generally powered by a rechargeable battery pack, and provide filtered air to the hood assembly.

Supplied Air Respirators

Like the Air Purifying Respirator and PAPR, these can use a half or full face mask, a loose fitting hood, hard hat or welder’s shield assembly. This type of respirator requires the use of a filtered Class D breathing air supply, and cannot be used with just any air compressor. They also require being “tethered” to an air supply hose.

SCBA- Self Contained Breathing Apparatus

These respirators provide the greatest level of protection against highly toxic and unknown materials. SCBAs have a limited air supply that is carried by the user, allowing for good mobility, and require being filled by a dedicated Class D air fill station or supplier.



Material Types

Respirators can be made from a variety of materials. The most popular face piece materials are silicone, neoprene, and rubber. In general, rubber and neoprene are rigid, durable materials. Silicone is preferred for its comfort, flexibility and ease in cleaning. Full-face respirators are available with six-strap harnesses or ratchet suspensions. The harness type can be worn with a hard hat, but ratchet suspensions are generally easier to adjust, making it easier to install and remove.

Common Filter Colors/Protection	
Color Code	Protection
Magenta/Purple	P100- Particulates
Yellow	Acid Gas and Organic Vapors
Black	Organic Vapors
White	Acid Gasses
Green	Ammonia
Olive	Multi-Contaminant

Check the chemical MSDS for required protection, or consult a safety specialist for recommendation.

MSDS Example: SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION.

Respiratory Protection: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirator may not provide adequate protection.

This publication is not a substitute for review of the applicable government regulations and standards, and should not be construed as legal advice or opinion. Always consult MSDS Section 8 for respirator selection when being used with any product, or consult an appropriate safety specialist.



If you are still having difficulty choosing a Respirator
Please contact us at askzoro@zoro.com or 855-289-9676

Information sources include MSA, 3M, North By Honeywell, Grainger

Product Compliance and Suitability.

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