

Disposable Face Mask Ratings: N95, P2, BFE, CE. What does NIOSH Approved mean?

The N95 surgical face mask has been recommended by USA experts as the best protection from SARS. The mask has a >99% BFE (Bacterial Filtration Efficiency). The N95 is the USA equivalent of the European P2 and P3 masks with the P3 offering the higher protection. The N95 mask has a Particle Filtration Efficiency (PFE) of >95% @ 0.3 micron. Masks are intended for use in infection control practices.

The P1 disposable dust respirators are suitable for protection against mechanically generated particles to 1 micron, such as dust and mist. Uses include: sawing, drilling, woodworking, sanding grinding and gardening.

Standard Tie On and Earloop Face Masks are the typical disposable face mask which is latex free, hypoallergenic, fiberglass free, fluid resistant and has a three ply construction. These face masks minimize patient contamination to exhaled microorganisms. Offers a >99% Bacterial Filtration Efficiency (BFE).

So what does it mean when a respirator is “NIOSH Approved”? The Approval is issued only to a specific and complete respirator assembly after the respirator has been evaluated in the laboratory and found to comply with all the requirements of Title 42, Code of Federal Regulations, Part 84. All the components must have the NIOSH approval label. If a manufacturer’s facility has an approval number on one respirator it does not mean that all their respirators are approved just that specific model.

Recent CDC infection control guidance recommends that healthcare workers protect themselves from diseases potentially spread through the air by wearing a fit tested respirator at least as protective as a NIOSH approved N95 respirator. An N95 respirator is one of nine types of disposable particulate respirators. Particulate respirators are also known as “air purifying respirators” because they protect by filtering particles out of the air you breath. The air-purifying respirator forces contaminated air through a filtering element. Workers can wear any one of the particulate respirators for protection against these diseases. NIOSH- approved disposable respirators are marked with the manufacturer’s name, the part number (P/N), the protection provided by the filter (e.g. N95), and “NIOSH”.

TYPE DESCRIPTION- NIOSH United States Standard

N95 Filters at least 95% of airborne particles. Not resistant to oil
N99 Filters at least 99% of airborne particles. Not resistant to oil
N100 Filters at least 99.7% of airborne particles. Not resistant oil
R95 Filters at least 95% of airborne particles. Somewhat resistant
R99* Filters at least 99% of airborne particles. Somewhat resistant
R100* Filters at least 99.97% of airborne particles. Somewhat resistant
P95 Filters at least 95% of airborne particles. Strongly resists oil
P99* Filters at least 99% of airborne particles. Strongly resists oil
P100 Filters at least 99.97% of airborne particles. Strongly resists oil

*** No NIOSH approvals are held by this type of disposable particulate Respirator**

NOTE: particle size is 0.3 micron penetrating particle size (MPPS), Diffusion and interception predominate

European Standard EN 143 defines the following classes of particle filters that can be attached to a face mask:

CLASS	FILTER PENETRATION LIMIT (ata 95L/min air flow)
P1	Filters at least 80% of airborne particles
P2	Filters at least 94% of airborne particles
P3	Filters at least 99.95% of airborne particles

European Standard EN 149 defines the following classes of “filtering half masks” (also called filtering face pieces) that is respirators that are entirely or substantially constructed of filtering material:

CLASS	FILTER PENETRATION LIMIT (at 95L/min air flow)
FFP1	Filters at least 80% of particles <22% inward leakage
FFP2	Filters at least 94% of particles <8% inward leakage
FFP3	Filters at least 99% of particles <2% inward leakage