3M Infection Prevention
N95 Particulate Respirators, 1860/1860S and 1870

Frequently Asked Questions

3M

3M Infection Prevention N95 Particulate Respirators,1860/1860S and 1870
Frequently Asked Questions

Q. What is a type N95 respirator?
A. An air-purifying, particulate respirator is a personal protective device designed to help reduce the wearer's inhalation exposure to certain airborne particles. N95 is one of nine filter classifications in the National Institute for Occupational Safety and Health (NIOSH) approval system. The Occupational Safety and Health Administration (OSHA) requires respirators be certified by NIOSH. In the NIOSH classification system, particulate respirators are given an N, R, or P rating. Each particulate respirator is also given a filter efficiency rating of 95, 99, or 100 when tested against particles that are the most difficult size to filter – approximately 0.3 microns in size mass median aerodynamic diameter (MMAD). NIOSH class 95 particulate respirator filters are certified to be at least 95% efficient; class 100 particulate respirator filters are certified to be at least 99.97% efficient.
The most commonly used respirator in healthcare settings is an N95 filtering facepiece respirator. This class of respirator has an assigned protection factor (APF) of 10, which in essence means it will reduce contaminant exposures by a factor of 10. The APF defines the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program as specified in the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Q. Who is NIOSH?
A. The National Institute for Occupational Safety and Health (NIOSH) is part of the Department of Health and Human Services and has responsibility for testing and certifying respirators. They are NOT responsible for regulating their use.

Q. Who is OSHA?
A. The Occupational Safety and Health Administration (OSHA) is part of the Department of Labor. OSHA establishes standards to ensure safe and healthful workplaces in the US. The OSHA standard that affects respirator use in healthcare facilities is the General Industry Respiratory Protection Standard 29 CFR 1910.134. OSHA is an enforcement agency and as such has the authority to cite and issue penalties to employers if applicable standards are not being followed.

Q. Who is CDC?
A. The Centers for Disease Control and Prevention, a federal health agency and branch of the Department of Health and Human Services located in Atlanta, Georgia, provides national health and safety guidelines, statistical data, and specialized training in control of infectious diseases. CDC has no enforcement authority in occupational facilities.

Q. How is an N95 respirator different from a medical, surgical, or patient care mask?
A. N95 respirators help reduce the wearer's inhalation exposure to certain airborne particulates. These respirator filters have been tested and certified by NIOSH to be at least 95% efficient when tested against very "small" particles that are the most difficult size to filter (approximately 0.3 microns).
Medical, surgical, or patient care face masks, on the other hand, are designed to help prevent larger droplets from being expelled by the wearer into the environment.These masks are also designed to be fluid resistant to splash and splatter of blood and body fluids. Surgical, medical, or patient care facemasks are not necessarily designed to provide a good seal to the face. Most masks are open on the sides and do not provide for a good facial seal. Therefore, the potential for air leakage around the edges exists. Even those masks that appear similar to respirators have not been designed to protect the wearer from inhalation of airborne hazards; therefore they should not be considered an equivalent substitute to government-approved respirators. Look for the N95 certification label on each respirator to assure NIOSH approval.

Q. Can the 3M™ N95 Respirators be used in surgery?
A. Yes. The 3M Particulate Respirators and Surgical Masks 1860/1860S and 1870 are cleared for use as a surgical mask by the FDA. They provide greater than 99% bacterial filtration efficiency against wearer generated particles according to the Modified Greene and Velsey test method. They are also fluid resistant to help reduce exposure to blood and body fluids. When worn properly and in combination with protective eyewear, they can help the facility comply with the OSHA Bloodborne Pathogen Standard.

Q. What is BFE, and what does it measure?
A. BFE stands for Bacterial Filtration Efficiency. This test evaluates how well a surgical mask can prevent biological particles from being expelled by the wearer into the environment. Bioaerosol particles generated during the BFE test are "large," on the order of 1 to 5 microns in size. For comparison, particles used for respirator filter efficiency tests are much smaller, approximately 0.3 microns MMAD in size. The BFE test is a relative indicator of the performance of a medical, surgical or patient care mask, but the results cannot be compared to respirator certification filtration efficiency.

Q. Are the 3M™ N95 respirators appropriate for reducing exposure to *M. tuberculosis*?
A. Both the 1860/1860S and the 1870 meet the criteria for a respirator specified in the Center for Disease Control and Prevention (CDC) Guidelines for Preventing the Transmission of Mycobacterium Tuberculosis (TB) in Health Care Facilities, 1994. OSHA accepts use of an N95 respirator (or any of the other NIOSH 42 CFR 84 approved filter classes) during occupational exposure to TB. Respirators do not eliminate the risk of contracting disease or infection. They are intended to be used in conjunction with other infection control measures such as patient identification, isolation, negative pressure ventilation, and healthcare worker screening.

Q. Can respirators help protect you from biological agents such as bacteria or viruses?

A. A respirator is just one of several preventative measures that can be used to help reduce exposure to biological agents. Respirators are designed to help reduce exposures of the wearer to certain airborne hazards. Biological agents, such as bacteria or viruses, are particles and can be filtered by particulate filters with the same efficiency as non-biological particles having the same physical characteristics (size, shape, etc.). OSHA and other government agencies have not established safe exposure limits for biological agents. Respirators may help reduce exposures to airborne biological contaminants, but they don't eliminate the risk of exposure, infection, illness, or death.

Q. What is the risk of inhaling biological particles that have been collected by the respirator filter?

A. The risk of inhaling particles that have been collected by the filter is very low, particularly in very clean areas (such as a patient care setting or a home). When particles are collected on a filter they are strongly held to the filter. Proper and normal use of a respirator filter has not been shown to reaerosolize the particles collected in that filter.[1] However, it is important to understand that proper use of respirators only reduces your exposure to particles and does not prevent exposure.

Q. Can the 3M™ N95 Respirators be used during the administration of Ribavirin (Virazole™)?

A. Yes. The manufacturer of Ribavirin has indicated that under normal administration in a well ventilated healthcare setting, use of respirators is not required. However, if a healthcare worker chooses to use a respirator to further reduce their exposure, an N95 filter would be appropriate based on the particle size of the aerosolized medication. If a healthcare worker is required by the employer to wear respiratory protection, then all the requirements of OSHA's respiratory protection standard 1910.134 must be satisfied, which includes written procedures, medical screening, training and fit testing.

Q. Can 3M™ N95 Respirators be used during the administration of pentamidine?

A. Yes. Pentamidine is often used as an anti-protozoal agent for AIDS patients. Worker exposure to aerosolized pentamidine may result in limited general malaise. Another concern is that the AIDS patient may also have undiagnosed TB. The aerosolized medication may cause the patient to cough. Therefore, respiratory protection appropriate for exposure to TB such as the1860/1860S or 1870 should be worn during administration of this medication. If a healthcare worker is required by the employer to wear respiratory protection, then all the requirements of OSHA's respiratory protection standard 1910.134 must be satisfied, which includes written procedures, medical screening, training and fit testing.

Q. Do the 3M™ N95 Respirators contain fiberglass material?

A. The 1860/1860S and the 1870 do not contain fiberglass material.

Q. Can 3M™ N95 Respirators be used when caring for patients known or suspected to have measles (rubeola) or chickenpox (varicella)?

A. Yes. In the 1996 Guideline for Isolation Precautions in Hospitals, CDC states that particulate respirators should be worn when susceptible persons enter these patients' rooms. Persons immune to these diseases do not need to wear a respirator. If a healthcare worker is required by the employer to wear respiratory protection, then all the requirements of OSHA's respiratory protection standard 1910.134 must be satisfied, which includes written procedures, medical screening, training and fit testing.

Q. Should a respirator be worn by a patient with a compromised respiratory system?

A. No. Respirators should not be worn by a person whose respiratory system has been compromised or who may have trouble breathing through a respirator, unless otherwise advised by a personal physician.

Q. Can the 3M™ N95 Respirators be used for laser and electrocautery procedures?

A. Yes. A smoke evacuator should be used to reduce the amount of smoke in the environment. The 1860/1860S or 1870 maybe used to further reduce the wearer's exposure to the plume. The CDC is recommending use of an N95 respirator for use in these procedures. If a healthcare worker is required by the employer to wear respiratory protection, then all the requirements of OSHA's respiratory protection standard 1910.134 must be satisfied, which includes written procedures, medical screening, training and fit testing. According to the CDC, respirators are now being recommended for personal protection during laser procedures to help reduce exposure to laser plume. [Source: *Guideline for Environmental Infection Control in Health Care Facilities* 2003. page 14. Recommendations of CDC and Health Care Infection Control Practices Advisory Committee. http://www.cdc.gov/ncidod/hip/enviro/guide.htm]

Q. What is the difference between the 1860/1860S and the 1870?

A. 3M offers two models of respirators approved by NIOSH as an N95 respirator: the 1860 model (also available as 1860S small) and the 1870 model. The 1860 is a traditional cup shaped respirator where as the 1870 is a three-fold, flat panel respirator. The 1870 provides the benefits of a cup-style product with the convenience of the flat-fold products. Both the 1860/1860S and the 1870 have two elastic headbands (latex free) and a malleable nose clip and foam strip to help provide a secure, customized fit for a broad range of face shapes and sizes.

Q. Are the fitting instructions for the 1870 respirator different than for the 1860/1860S?

A. Yes. Fitting instructions for the 1870 Respirator are UNIQUE due design differences. Follow instructions detailed on the outside of the dispenser box to ensure a proper fit and always perform a user seal check prior to each wearing (donning of the respirator).

3M Infection Prevention N95 Particulate Respirators,1860/1860S and 1870
Frequently Asked Questions (cont.)

Q. Do the 3M™ N95 Respirators contain latex?
A. The 1860/1860S and 1870 do not contain components made from natural rubber latex.

Q. Do the 3M™ N95 respirators require fit testing?
A. Yes. OSHA's Respiratory Protection Standard 29 CFR 1910.134 requires that a written respiratory protection program be developed for the proper use of this product as with all respirators. This includes written procedures, medical screening, training and fit testing. Either the FT-10 Qualitative Fit Test Apparatus, which uses a saccharin aerosol, or the FT-30 Qualitative Fit Test Apparatus, which uses a bitter aerosol, is appropriate for fit testing these products. These 10–20 minute procedures demonstrate whether an employee can attain a good face fit with a given style respirator. A video and fit testing materials are available by calling your 3M sales representative or our 3M Health Care Helpline at 800-228-3957.

Q. How often must fit testing be done?
A. OSHA, under its respiratory protection standard 29 CFR 1910.134, requires that fit testing be conducted when the respirator is first issued to an employee and at least annually there after. Additional fit tests must be conducted whenever a different respirator (size, style, model, or make) is used and if changes in facial structure of the wearer develop that could affect respirator fit.

Q. Are multiple sizes of respirators needed?
A. Multiple sizes of respirators are not mandatory. Multiple sizes or alternative facepiece designs can provide the individual with additional options for obtaining a good fit and seal. What is important is that the respirator fit the wearer. 3M offers the 1860 model in both a standard size and a small size (1860S). The 1870 model is only available in one size and is designed to fit a wide range of face sizes.

Q. Is a user seal check or fit check the same as a fit test?
A. No. A user seal check is a quick (6–10 second) procedure, performed by the wearer, to determine that the respirator is properly molded to the face prior to entering a contaminated area. A user seal check is required each time a respirator is donned or adjusted. It does not take the place of a fit test. A fit test is used to evaluate the fit of a particular model and size of tight-fitting respirator on an individual before use. The respirator program supervisor or trainer conducts the fit tests.

Q. How is a user seal check/fit check performed?
A. To perform a user seal check on the 1860/1860S or the 1870, don the respirator according to the user instructions. Next, place both hands completely over the respirator and exhale. If air leaks between the face and the face seal of the respirator reposition it and readjust the nose clip for a more secure seal. If air leaks around the respirator edges, adjust the position on the face and the straps along the sides of the head and recheck fit. If a proper fit cannot be achieved, do not enter the area requiring respiratory protection. See specific product user instructions for the most current user seal check/fit check instructions.

Q. Can the 3M™ N95 Respirators be worn with facial hair (i.e. beard or stubble)?
A. The 3M N95 Respirators are considered tight fitting respirators. A tight fitting respirator, one where the sealing surface contacts the face, will not provide an adequate seal when placed over any amount of facial hair. A powered air-purifying respirator (PAPR) with a loose fitting facepiece, hood or helmet, may be an alternative for a bearded worker.

Q. Can disposable respirators be shared between people?
A. No. Disposable respirators should never be shared and when not in use should be stored according to the facility's infection control policy and procedure and OSHA regulations.

Q. How long can the 3M™ N95 respirators be used?
A. The 1860/1860S and 1870 may be used until damaged, breathing becomes difficult, or contaminated with blood/body fluids. If contact transmission is of concern, it may be appropriate to dispose of immediately after each use. Otherwise, it may be stored and reused according to the facility's infection control policy and procedure.

Q. How should the 3M™ N95 Respirators be stored?
A. According to OSHA all respirators must be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. Respirators must also be stored to prevent deformation of the facepieces.

Q. Can I store and/or carry the 1870 in my pocket?
A. 3M does not recommended storage of the 1870 respirator in pockets once used, since the respirator may be damaged or become contaminated if out of the package.

If you have any further questions concerning respirators, please contact your 3M sales representative or call our **3M Health Care Helpline at 1-800-228-3957.**

3M

Health Care
3M Center, Building 275-4W-02
St. Paul, MN 55144-1000
U.S.A.
1 800 228-3957
www.3M.com/healthcare

3M Canada
Post Office Box 5757
London, Ontario N6A 4T1
Canada

1 800 364-3577

70-2009-7018-7

[1] Qian, Y., K. Willeke, S. Grinshpun, and J. Donnelly: Performance of N95 Respirators: Reaerosolization of Bacteria and Solid Particles, *Am. Ind. Hyg. Assoc. J.* 58:876-884 (1997).