Can I use Expired N95 Masks?

February 28, 2020

Some U.S. stockpiles include N95 filtering facepiece respirators (N95s) that have exceeded their manufacturer-designated shelf life. U.S. Government decision makers are considering whether these products should be released for use during the COVID-19 response. Information is provided below that may be used to inform these product release decisions. In times of respiratory protective device shortage, such as during the COVID-19 response, supplies must be managed so that protection against exposure is adequate.

Considerations to inform product release decisions

A study to evaluate stockpiled N95s from 10 geographically dispersed facilities with a range of storage conditions is underway by the Centers for Disease Control and Prevention's (CDC) National Institute for Occupational Safety and Health (NIOSH). This study includes data from 11 different N95 models. All N95 units evaluated in this study were manufactured between 2003 and 2013. Many have exceeded their manufacturer-designated shelf life. Testing was done in accordance with NIOSH performance standards for filtration efficiency and inhalation/exhalation resistance.

Based on preliminary information gained in this study, many models have continued to perform in accordance with NIOSH performance standards. Accordingly, CDC/NIOSH believes the following products, despite being past their manufacturer-designated shelf life, should provide the expected level of protection to the user if the stockpile conditions have generally been in accordance with the manufacturer-recommended storage conditions and an OSHA-compliant respiratory protection program is used by employers. In alphabetical order, these models are:

- 3M 1860
- 3M 1870
- 3M 8210
- 3M 9010
- 3M 8000
- Gerson 1730
- Medline/Alpha Protech NON27501
- Moldex 1512
- Moldex 2201

Summary

- N95s that are past their manufacturer-designated shelf life are no longer considered NIOSH-approved, as all manufacturer-designated conditions of use must be met to maintain the NIOSH approval.
- In times of increased demand and decreased supply, consideration can be made to use the N95s listed above past their manufacturer-designated shelf life when responding to COVID-19.

- This preliminary information from the NIOSH study suggests certain N95 models beyond their manufacturer-designated shelf life will be protective. CDC recommends that N95s that have exceeded their manufacturer-designated shelf life should be used only as "a last resort".
- The respirators were all stored in reasonable conditions and had not been opened for extended periods, or exposed to extremes of temperature, humidity, etc.
- Reports detailing the performance results of stockpiled respirators sampled from stockpile facilities are available on the NIOSH webpage.

Firm conclusions cannot be drawn for stockpiled N95 models beyond those tested in this study; however, the 3M 1860S is a smaller version of the 3M 1860, constructed from the same materials, and is expected to perform in the same manner. The 3M 8000 is no longer produced; however, it should still be effective at protecting workers if the straps are intact and there are no visible signs of damage. While it performed favorably when evaluated against the NIOSH approval requirements, it is no longer supported by the manufacturer (i.e., user instructions, donning instructions, etc. are no longer available).

CDC/NIOSH Recommendations

In times of increased demand and decreased supply, consideration can be given to use the N95s listed above past their manufacturer-designated shelf life when responding to COVID-19. Although this preliminary information from the NIOSH study suggests certain N95 models beyond their manufacturer-designated shelf life will be protective, CDC recommends that N95s that have exceeded their manufacturer-designated shelf life should be used only as outlined in the Strategies for Optimizing the Supply of N95 Respirators

The respirators exceeding their manufacturer-designated shelf life are only being released due to the potential urgent demand caused by the COVID-19 public health emergency. In the face of this emergency, the U.S. Government believes that the respirators beyond their manufacturer-designated shelf life should provide greater respiratory protection than surgical masks (i.e., medical masks) alone, improvised mouth and nose covers (e.g., bandanas), or no protection at all. Please note that surgical N95s are normally tested for fluid resistance and flammability. These requirements were not evaluated in this study. CDC does not recommend using N95s beyond the manufacturer-designated shelf life in surgical settings.

Prior to using these expired respirators, consideration should be given to acquiring other NIOSH-approved respirators including all types of filtering facepiece respirators, elastomeric respirators, or powered air purifying respirators as described in the Strategies for Optimizing the Supply of N95 Respirators. This recommendation is made because healthcare services are essential and must continue in the face of the COVID-19 outbreak. Users of N95s that have exceeded the manufacturer-designated shelf life should be notified before their use and the importance of inspection and user seal checks should be reemphasized.

SAFETY IN NUMBERS – SUPPLEMENTAL INFORMATION

Users should take the following precautionary measures prior to using the respirator in the workplace.

- Visually inspect the N95 to determine if its integrity has been compromised.
- Check that components such as the straps, nose bridge, and nose foam material did not degrade, which can affect the quality of the fit, and seal and therefore the effectiveness of the respirator.
- If the integrity of any part of the respirator is compromised, or if a successful user seal check cannot be performed, discard the respirator and try another respirator.
- Users should perform a user seal check immediately after they don each respirator and should not use a respirator on which they cannot perform a successful user seal check.