

## **CDC interim guidance on the use of expired N-95 respirators: February 28, 2020**

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.

Based on preliminary information gained in this study<sup>[i]</sup>, 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**

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.

The Kimberly-Clark 46827 (size small) and Kimberly-Clark 46727 (size regular) may not provide the expected level of protection to the wearer when past their manufacturer-designated shelf life of 5 years.

### **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<sup>[ii]</sup> 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.

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.

#### **Preliminary findings – NIOSH performance standards**

- The majority of respirator models tested continued to meet performance standards regardless of the facility from which they were sampled.
  - 3M 1860 (8 facilities), 3M 1870 (3 facilities), 3M 8210 (3 facilities), 3M 9010 (3 facilities), 3M 8000 (4 facilities), Gerson 1730 (3 facilities), Medline/Alpha Protech NON27501 (1 facility), Moldex 1512 (1 facility), and Moldex 2201 (1 facility).
  - Thirty-four Kimberly-Clark 46827 units (6.1%) failed filtration performance out of 559 units tested.
  - Forty Kimberly-Clark 46727 units (10.3%) failed filtration performance out of 387 units tested from 5 of the stockpile facilities.

- Two 3M 1860 units (0.16%) failed filtration performance out of a total of 1,247 units tested from 8 of the stockpile facilities. Both failing units came from a single facility where another 170 units of the same model had no failures. The 2 units came from different production lots, manufactured in 2006 and 2009. This facility had no temperature or humidity controls or active monitoring in place for the majority of the units' storage time. Eighty-six units for a second respirator model also tested from this facility had no failures.
- The Gerson 1730 and the Medline/Alpha Protech NON27501 models do not have a manufacturer-designated shelf life. All other models included in the study exceeded their manufacturer-designated shelf life.

Original Website URL: <https://www.cdc.gov/coronavirus/2019-ncov/release-stockpiled-N95.html>