

Reusing Masks? Keep Your Workers Safe During a Supply Shortage

Long before COVID-19, portable sanitation workers wore masks as part of their personal protective equipment (PPE) in some settings. During the epidemic it has been essential for service technicians and many others in our industry to include masks as a normal safety precaution when carrying out their duties. Making the change to any new protocol is challenging enough, but it is even harder now that masks are in short supply. So what are your options for keeping your team safe when masks are in short supply?



Something is better than nothing. Generally, workers wear PPE to protect themselves from hazards they may encounter on the job. While that is certainly still true for portable sanitation teams during COVID-19, it is not the only reason.

Today, masks and face coverings are also needed to protect people with whom your colleagues may come into contact. We now know that people can carry and transmit the virus for up to three weeks before developing the antibodies necessary to eliminate the virus. This is true even if the carrier never feels ill. A face covering should be worn at all times outside the truck and whenever other staff are in close contact—meaning within 6 feet—of customers and co-workers. Here are the most common options you can consider.

Covering Type	Attributes	Can They Be Reused?
N95 Mask	N95 face masks—regulated by the Food and Drug Administration (FDA) and National Institute for Occupational Safety and Health (NIOSH)—are PPE that protect wearers from airborne particles and liquid contaminating the face. The N is for “Not resistant to oil” and the 95 refers to the minimal efficiency level at 0.3 microns (95% efficient). These masks are currently in extremely short supply globally. They are generally available only to medical personnel.	In times of insufficient supply, procedures for extended use and limited reuse can be employed until supplies can be replenished (see below).
KN95 Mask	KN95 masks, though not NIOSH regulated, are also considered PPE and can be used to protect the wearer from hazards. These masks are often identical to N95 masks and are the “N95 equivalent” for medical usage in China. In the US, they are primarily used in industrial settings and offer the same filtration as N95 face masks with a rating of 95% at 0.3 microns. These masks are often produced on the same assembly lines as N95 masks but are not sent for NIOSH regulation. In April 2020, the FDA approved KN95 masks for use by medical professionals.	In times of insufficient supply procedures for extended use and limited reuse can be employed until supplies can be replenished (see below).

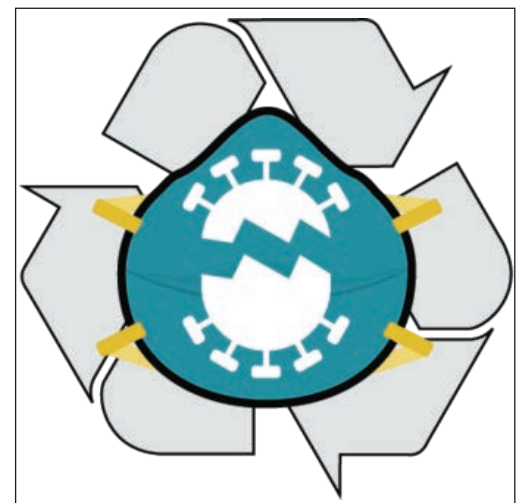
Covering Type	Attributes	Can They Be Reused?
Disposable Mask	Disposable masks offer varying degrees of filtration. Some are medical grade, offering K95 or KN95 protection. Most that are readily available now protect are not sufficient for PPE-level protection. These masks help prevent the spread of COVID-19 by blocking droplets exhaled by the wearer. Many are also fluid-resistant and provide the wearer some protection against splashes or sprays of bodily or other hazardous fluids. If these masks are being used, face shield are also needed to increase protection to the wearer.	Only as a last resort. These masks are not designed for reuse and become damaged when attempts are made to sanitize them.
Cloth Mask	Cloth masks do not give the wearer full protection against viruses in the air and are not considered PPE. If your team is using cloth masks, they should also use a face shield to increase protection to the wearer. Cloth masks primarily protect others by barricading biological aerosols or “droplets” containing the virus inside the cloth. This is especially effective in cases where asymptomatic people (infected people who show no symptoms) may be releasing the virus without knowing it.	Generally, yes.

Reduce usage rates wherever possible. If someone is doing the sort of work that requires a mask and/or face shield, they should always be wearing this PPE. However, the US Centers for Disease Control (CDC) advises companies to make changes to operations wherever possible to decrease the usage rate of PPE-level masks and extend their supply. For example, you can put up plexiglass barriers in your office or restrict visitors so that employees in those spaces do not need masks most of the time. You can also continue work from home arrangements and video conferencing for some staff, reducing their exposure to others and thus the need for precious masks.

When reuse is the only choice, be sure to do it appropriately to protect your staff and preserve the integrity of the mask. Information about how to protect yourself and your team from COVID-19 is constantly evolving. Mask decontamination strategies are actively being investigated by the [CDC](#), [mask companies](#), and [large academic/industry collaboratives](#). At this time, these sources have put forth some general principles for processing masks and other PPE.

1. The method must sufficiently inactivate the viral load on the mask.
2. The mask cannot be soiled (bodily fluids or makeup must not be present; residue on the mask may adversely affect the integrity of the material after re-processing, so foundation, sunscreen, or other forms of make-up should not be worn underneath a mask)
3. The filtration capacity and electrostatic charge must be preserved as much as possible.
4. The fit of the mask cannot be compromised.

The information below is current as of May 9, 2020 and is [adapted from CDC resources](#) and information from [n95decon.org](#). Be sure to check the [CDC](#), [OSHA](#), or [PSAI](#) websites for additional information.



95Decon Logo



Means of decontaminating masks include:

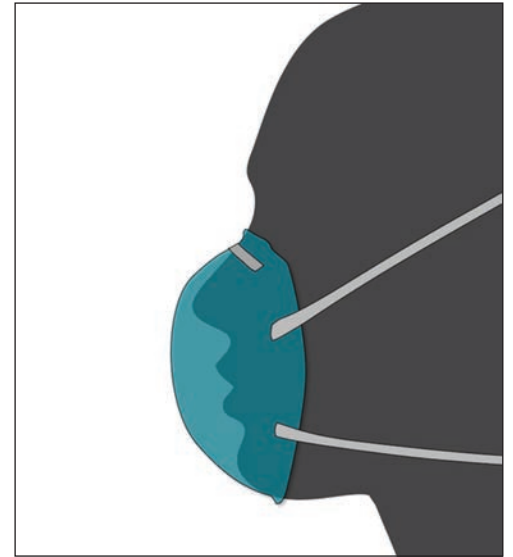
Does Work	Notes
Vaporous hydrogen peroxide	Requires special equipment not even available in most hospitals.
Ultraviolet germicidal radiation	Requires special equipment to achieve the right UV levels. Too much will damage the mask; too little will fail to kill the virus. UV light is harmful to eyes and skin; proper training, engineering controls, and PPE are required before use. Click here to learn more.
Moist heat	<p>Plastic reservoirs with perforated tops are filled with tap water at room temperature. The contaminated mask is placed atop the center of the assembly, loaded into a microwave oven, and exposed to radiation for two minutes (one minute each side of mask).</p> <p>Using microwaves to produce steam to decontaminate masks is not without limitations. Not all microwaves are the same and some are more powerful than others. The effect of higher power microwaves on masks is unknown. Furthermore, the metal nose bands of masks may cause arcing, sparks inside the microwave oven, during exposure to microwaves.</p>
Isolation and time	<p>Storage at room temperature (72F/22C, 40–65% humidity) for 7 days is expected to significantly reduce risk of exposure. Each employee should be issued one week’s worth of masks. At the end of each shift, the mask should be placed in a closed, breathable container (such as a paper bag) and left untouched for 7 days. During this period any active virus is expected to become inactive.</p> <p>The masks should only be re-used by the same wearer.</p> <p>The virus may survive substantially longer if the storage area is cooler than 72F/22C or if the humidity is higher/lower than the range above. Masks that are damaged, soiled with cosmetics, blood, other bodily fluids, or no longer sealing properly should be discarded.</p> <p>This method has not been validated in an FDA process and should be used only if no other method is available. Click here for more information.</p>

Never try the following:

Do Not Use	Notes
Autoclave; dry heat; isopropyl alcohol; soap and water; dry microwave irradiation	Causes substantial filter degradation to masks and particle penetration levels does not meet the levels that NIOSH would allow for approval as PPE.
Bleach; disinfectant wipes	Degrades the filtration and leaves dangerous fumes in the fibers that may be harmful to the wearer.
Ethylene oxide	Fumes may be harmful to the wearer.
Home oven	Bringing potentially bio-hazardous materials home is highly dangerous and carries significant contamination risk.
Overnight storage	Viruses similar to COVID-19 have been shown to live on surfaces for 3 days or more. Overnight storage at room temperature will not be sufficient to inactivate the virus.

Team members should take the following precautionary measures before using a decontaminated mask:

- Clean hands with soap and water or an alcohol-based hand sanitizer with at least 60 percent alcohol before and after touching or adjusting the mask.
- Avoid touching the inside of the mask.
- Use a pair of clean (non-sterile) gloves when donning the mask and performing a user seal check.
- Visually inspect the mask to determine if its integrity has been compromised.
- Check that mask components such as the straps, nose bridge, and nose foam material did not degrade, which can affect the quality of the fit and seal.
- If the integrity of any part of the mask is compromised, or if a successful [user seal check](#) cannot be performed, discard the mask.
- Users should perform a user seal check immediately after they don each mask and should not use a mask on which they cannot perform a successful user seal check.



More mask questions? Check out the recordings of the PSAI's Virtual Roundtables on the COVID-19 resource page or [email Karleen](#) at the PSAI. ❖

