



Face Masks for Employee and Customer Safety

 IQ GROUP

A Guide to Provide Face Masks for Employee and Customer Safety

From regulatory agencies to different mask types, it's important to conduct due diligence to protect your workplace.

Regardless of your industry, the coronavirus is a very real threat. Though the rate of infection has begun to drop in some regions, there are still over one million cases in the United States¹. At the moment, many states are navigating how to reopen the economy without causing a spike in new infections. As stores, restaurants, and factories resume activity, employee and Customer safety are of the utmost concern, and face masks and gloves became the most important pieces of personal protective equipment (PPE) for every worker.

However, identifying the right mask for your staff isn't an easy task. The pandemic has created two dilemmas for employers:

- If you're providing masks for your employees for the first time, what type is most effective, appropriate, and accessible?
- If your employees already require masks for their job duties, what are the best alternatives when the masks they need sell out?

Answering these questions requires a great deal of information, starting with who oversees the production and testing of each mask type.

¹ CDC. (2020). Cases of Coronavirus Disease (COVID-19) in the U.S. Retrieved from: <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html>

Regulatory Agencies

There are three regulatory agencies who test the efficacy of specific mask types and/or provide public guidance about mask use.

- The Occupational Safety and Health Administration ([OSHA](#)), part of the U.S. Department of Labor, provides detailed regulations for worker safety.
- The U.S. Food and Drug Administration ([FDA](#)) regulates surgical masks as well as medical devices, radiation-emitting products, vaccines, blood, and biologics, as well as other categories. It's important to check these agencies' sites regularly for updated mask usage guidelines.
- The National Institute for Occupational Safety and Health ([NIOSH](#)) is a division of the Centers for Disease Control and Prevention (CDC) and evaluates and tests N95 respirator masks and other respirators, among other duties.

Additionally, wearing a mask approved by one of these agencies can provide more peace of mind for everyone involved.

Types of Masks

The ultimate objective of any face mask is to act as a barrier between objectionable, infectious or dangerous materials and the wearer's mouth, nose, eyes, and skin.

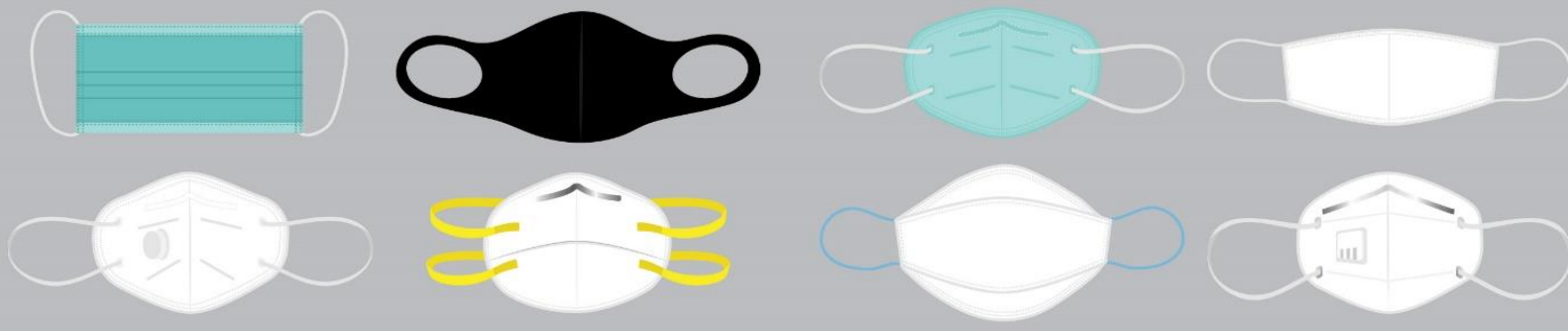
There are three main categories of threats:

1. *Chemical*: Chemical masks are respirators, most of which are designed to filter out dangerous particles, chemicals, gases, or vapors². This category includes the NIOSH-approved N95 respirator, a disposable mask that filters out at least 95% of airborne particles. (The N95 has an equivalent recognized in China and Europe, the K95). The CDC has recommended that the general public reserve these masks for frontline healthcare workers only. In addition to the "N" designation, there are "R" and "P" models in 95, 97 and 100 ratings. The N95 filters 95% of non-oil particulates and the P100 filters 99.97% of oil and non-oil particulates.
2. *Nuclear*: These are basically more advanced versions of chemical masks that are designed to stop you from breathing in radiation or nuclear particulates.
3. *Biological*: Bio masks are typically worn by doctors and include some type of plastic face shield or are paired with eyewear³. These masks can protect the healthcare employee and the patient, ensuring that the sterile field is not compromised by the mask, the medical provider's presence and can also provide the medical provider protection from many infectious agents from the patient. These are the medical masks that are in high demand and are regulated by the FDA. There are three classes of FDA Medical Masks depending on their intended use, but all FDA masks are sterile to avoid contaminating a sterile environment.

² CDC. (2020). Respirator Fact Sheet. Retrieved from:

<https://www.cdc.gov/niosh/nppt/topics/respirators/factsheets/respfact.html>

³ Breen, Kerry. Can plastic shields prevent the spread of coronavirus? Retrieved from: <https://www.today.com/health/plastic-face-mask-are-face-shields-better-masks-t179641>



Surgical masks are in high demand. They're disposable and loose-fitting. Surgical masks are fluid-resistant and protect against large droplets, splashes, and sprays of bodily or other hazardous fluids. However, they don't reliably provide these same protections for smaller droplets and particles as a N95 or greater respirator.

Due to a lack of availability of protective masks, the CDC has recommended that all Americans wear a cloth face covering when out in public⁴. The COVID-19 virus and the shortage of available protective masks have created a new unofficial hybrid mask category that is not designed to protect the wearer, but to provide protection to other individuals the wearer may encounter in their travels. Referred to as a "sneeze shields", these masks reduce respiratory velocity and diffuse or capture respiratory vapor or droplets. Often, infected hosts are symptom free and highly contagious for several days before they feel sick, and these masks are designed to reduce the possible spread during these first few days when the infected person is very mobile.

Efficacy

When casually assessing the effectiveness of a mask intended for professional duties, it should satisfy a shortlist of criteria we refer to as the **3 F's**:

Fluid Resistance, Filtration & Fit®:

- 1. Fluid Resistance:** the mask should have the lowest possible risk of fluid exposure, meaning bodily fluids can't be inhaled or reach the mouth or nasal areas.
- 2. Filtration:** particulates, bacteria, or viruses should be filtered out by the mask. The smaller the size of the particulate or bacteria blocked out, the better. Some filters are designed to resist oil-based chemicals, or even biological elements with fatty coatings.
- 3. Fit:** The mask should fit tightly to create a seal around the nose and mouth⁵. Most N95 masks offer an adjustable nose bridge and form fitting moldable side cups that give a strong seal. If the mask is loose, the user's protection is impaired. And if it's too tight or uncomfortable, the wearer may risk compliance as a tradeoff for comfort.



⁴ CDC. (April 3, 2020). Recommendation Regarding the Use of Cloth Face Coverings, Especially in Areas of Significant Community-Based Transmission. Retrieved from: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover.html>

⁵ OSHA. (2020). Transcript for the OSHA Training Video Entitled Respirator Fit Testing. Retrieved from: https://www.osha.gov/video/respiratory_protection/fittesting_transcript.html

In addition to the 3 F's, it's also important to consider the objective of using masks in your workplace. Your needs will likely fall in one of four categories:

1. **You need to provide protection in a medical or first-responder environment.** This article is a primer for business managers in the retail, distribution, and manufacturing industries; it cannot effectively address medical needs.
2. **You need masks that protect the wearer.** These masks should be of the highest quality (NIOSH – N95 grade which provides Filtration & Fit). It may be that you will have many employees working in proximity. These masks can come fitted with an exhale valve, which is important in warm and hot environments. If so equipped, they provide protection to the wearer, but do not offer protection to surrounding colleagues without such masks. Due to the shortage of PPE in the U.S., the available stock has been reserved and directed to medical staff and first responders.
3. **You need masks that provide (even limited) protection to the wearers, their colleagues, and Customers.** These masks can somewhat address the 3 F's, but they'll likely need to be disposable and replaced for every shift. Alternately, multiple layer fabric masks with a tighter fit (e.g. nose bridge, elastic cheeks, etc.) can attempt to contain the shedding of bacteria or a virus, reduce the velocity of a sneeze or a cough, and may provide some shelter to the user. If made of paper, they would be disposable; and if made of fabric, they could be washable and reusable.
4. **You need masks that protect colleagues and Customers:** These masks do not ensure significant protection for the user, have a loose fit, may be a single layer and are washable and reusable. They don't adequately address the 2 F's, but they do restrict the wearer's shedding of infectious particles and they're the lowest cost mask type.

When you choose a mask, you must be certain it is comfortable to wear during a shift, and you must educate employees on how to use a mask.

HOW TO WEAR A MEDICAL MASK



1

Clean your hands with soap and water or hand sanitizer



2

Hold the mask by the ear loops and place a loop around each ear



3

Mold or pinch the stiff edge to the shape of your nose



4

Pull the bottom of the mask over your mouth and chin



5

Avoid touching the front of the mask when wearing

HOW TO REMOVE A MEDICAL MASK



Mask Fabrics

Aside from understanding the types of masks available and the efficacy of each type, it's also important to get familiar with the types of fabrics used in each mask:

- Paper and synthetic filter fibers – you'll find these fibers used in surgical masks and N95 respirators. The fibers are formed into a web of fine filaments using melt-blown or spunbonded technology, instead of being woven together⁶. This makes them more capable of filtering out microscopic particles.
- Polyester fibers – these fibers are ideal for printing designs or decorating, but they wick moisture (soak up liquid) and have low filtration capability, both of which are negative mask traits.
- Natural fibers (e.g. cotton, cloth) – these fibers retain moisture and swell, which isn't ideal, but they have high filtration capability.
- Antimicrobial fibers – these are more comfortable and effective for all-day wear near the skin, but not as part of the filterable area.

Fabric Effectiveness

A recent review (not published or peer reviewed) of the effectiveness of textile materials in face masks was conducted by Scott Segal⁷, MD, chair of anesthesiology at Wake Forest Baptist Health in Winston-Salem, North Carolina, in partnership with the Wake Forest Institute for Regenerative Medicine. It found that one piece of cloth filtered 1% of particles, while a second layer filtered 79%.

The analysis also suggested that higher-grade cotton fabrics performed better and suggests holding a mask up to the sun or a bright light. "If light easily filters through, the filtration is likely not as good". Dr. Segal suggests: "If it blocks more of the light, it likely performs better." He also suggested that "If you can't comfortably breathe through the material for several minutes, it won't make a good mask, no matter how effective it is in filtering".

⁶ Bain, Marc. (March 30, 2020). US fashion brands having to make medical masks expose a failure of the health system. Retrieved from: <https://qz.com/1826057/us-fashion-brands-making-masks-expose-a-failure-of-the-health-system/>

⁷ <https://www.wakehealth.edu/Providers/S/B-Scott-Segal>

“Well, [bad] times like that bring out the best in some people and the worst in others.” J.K. Rowling, *Harry Potter and the Goblet of Fire*

While healthcare workers and essential workers throughout the globe are stepping up, regardless of the risks, for the benefit of many, there are those who are ready to plunder. “FDA-Approved” counterfeit products with no efficacy are abundant⁸, pre-paid orders are often not delivered, and products that are mislabeled are being seized at the border. U.S. Customs and the FBI are hard at work, but often their involvement occurs late in the ordering process. Profiteering is another issue. Know and research your sources, and if it seems too good to be true, it likely is.

The Needs of Your Stakeholders

The value equation has changed. Value used to equal Price, Quality and Convenience. You can now add Safety to the equation.

Though all the information covered above is important in making the right decision about face masks for your business, the needs, and even the concerns of your customers and employees should guide your final choice.

Making the right choice will require some analysis and leadership. The U.S. does not currently have the capacity to manufacture enough surgical or N95 masks for the entire population, hence the directive to wear cloth face coverings. The current ethos is – something is better than nothing. But soon, the public’s expectations will evolve, and the guiding ethos will shift – they’ll believe that nothing should be spared to protect employees and customers.

Employers will likely need to provide employees with masks, similar to how many industries provide their staff with uniforms or other PPE. As an example, look to Walmart, which started providing all employees with masks in mid-April⁹.



⁸ https://www.osha.gov/video/respiratory_protection/niosh_transcript.html

⁹ Tyko, Kelly. (April 18, 2020). Walmart to require all employees wear face masks starting Monday as part of coronavirus response. Retrieved from: <https://www.usatoday.com/story/money/2020/04/18/coronavirus-prevention-walmart-requiring-employees-wear-face-masks/5158840002/>

Who would ever want to share COVID-19 with others? A proper mask can help reduce the risk and the spread.

No one wants to encounter COVID-19 firsthand by going to work or overseeing a business. A proper mask, handwashing, social distancing, and discipline can reduce the risk and the spread until a vaccine can be administered.



IQ Apparel Group provides mask solutions for employers of all industries, sizes, and scopes. We can supply N95 masks and other non-medical masks that provide varying levels of protection. We offer a variety of visibly functional masks that convey a tight fit in fashionable styles, or ones that include subtle branding that reflect your brand's standard for the health and safety of customers and employees alike.

IQ masks focus on the 2 F's:

- **Filtration:** Our masks have several layers of fabric that may include polyester and cotton blends in both woven and non-woven forms. We've combined several fabrics to give users the benefits of each fiber type. The filter targets exhaled air by retaining vapor and reducing velocity of a sneeze or a cough to provide a fair level of protection for colleagues and Customers.
- **Fit:** Each mask is designed to sit high on the nose for maximum surface contact with the nose, and features an adjustable form-fitting nose bridge to reduce gaps by the nose and cheeks, wide cheek areas for a flush mask-to-cheek fit, and head straps for all day comfort. Increased comfort will lead to higher compliance amongst staff.

To learn more about how to find the right mask solution for your business, [get in touch with IQ Apparel Group!](#)