

FACEMASKS

Helping you face
infection control

a comprehensive guide
for safety and protection



Prevention is a lot easier when you're properly equipped with appropriate PPE. TIDI Products offers a complete line of single-use personal protective equipment including:



ISOLATION AND CHEMO GOWNS
for high, medium and low exposure environments



GLOVES
that are tested to ASTM standards to ensure maximum protection



PROTECTIVE EYEWEAR
designed to protect against life-threatening infectious materials



PPE CABINETS
that provide convenient point-of-use access to PPE

TIDI understands that choosing which type of facemask to purchase, how to wear it, and what application is best for each type can be difficult. This education reference will help you understand what facemasks are best to protect healthcare workers.

This is why TIDI Products offers P2®, a line of Personal Protection Equipment (PPE) that provides a high level of protection for healthcare workers. P2®'s product line consists of facemasks, isolation gowns, exam gloves, and storage cabinets to house PPE at point of use.





Facemasks in Healthcare an organizational viewpoint

Prominent safety organizations in the United States suggest healthcare workers wear facemasks when there is the possibility of coming into contact with blood or body fluids. Examples of this are shown by the following organizations:

OSHA (Occupational Safety and Health Administration)

– *Personal protective equipment will be considered ‘appropriate’ only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee’s work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes, under normal conditions of use and for the duration of time which protective equipment will be used.”¹*

CDC (Centers for Disease Control)

– *“The mucous membranes of the mouth, nose, and eyes are susceptible portals of entry for infectious agents, as can be other skin surfaces if skin integrity is compromised (e.g., by acne, dermatitis). Therefore, use of PPE to protect these body sites is an important component of Standard Precautions.”²*

NIOSH (National Institute for Occupational Safety and Health)

– *“Proper eye and face protection is needed whenever hazardous drugs may splash.”³*

/ Explanation of ASTM F2100-07 /

The ASTM F2100-07, Standard Specification for Performance of Materials Used in medical Face Masks⁶, was developed to test the qualities of facemasks in the market. It is the most current and only standard specification available for specifically testing the performance of medical facemasks. With the help of the five tests below, facemasks are then put into three categories of low barrier, moderate barrier and high barrier (performance table shown on next page).

1. Fluid Penetration Resistance

Technical Talk: This test is performed with the ASTM F1862, *Test Method for Resistance of Medical Face Masks to Penetration by Synthetic Blood (Horizontal Projection of Fixed Volume at a Known Velocity)*.

What does this mean?: This test shows results as a pass or fail at three velocities, corresponding to the speed of blood exiting a puncture, at human blood pressures of 80, 120 and 160 mm Hg.

2. Bacterial Filtration Efficiency (BFE)

Technical Talk: Test is performed with the ASTM F2101, *Test Method for Evaluating the Bacterial Filtration Efficiency (BFE) of Medical Face Masks Materials, Using a Biological Aerosol of Staphylococcus aureus*.

What does this mean?: This test measures the effectiveness of a material to filter bacteria. This is shown as a percentage of a quantity that does not pass through a material.

3. Sub-micron Particulate Filtration Efficiency (PFE)

Technical Talk: This test is performed with the ASTM F2299, *Standard Test Method for Determining the Initial Efficiency of Materials Used in Medical Face Masks to Penetration by Particulates Using Latex Spheres*.

What does this mean?: PFE is the ability of a material to filter aerosol particles. This is shown as a percentage of a quantity that does not pass through the material.

4. Differential Pressure (Delta P)

Technical Talk: This is measured according to the US Department of Defense Military Standard, MIL-M36954C, *Military Specification: Mask, Surgical, Disposable (June 12, 1975)*.

What does this mean?: This test measures a material's resistance to air flow. This can also be known as the "breathability." This is shown as mm of H₂O, where the higher the number, the lesser the breathability.

5. Flammability

Technical Talk: This is measured according to the US Code of Federal Regulations, 16 CFR Part 1610, *Standard for the Flammability of Clothing Textiles*.

What does this mean?: This test is used to determine what materials demonstrate a higher than normal flammability than other materials. Materials labeled as Class 1 are considered to have "normal flammability."

TIDI facemasks are tested with the ASTM F2100-07 “Standard for Performance of Materials Used in Medical Facemasks.” This is the only specific standard available that provides performance classes for facemasks to fall into. The performance classes range from low, moderate, and high barriers.

Requirements	Low Barrier	P2® 9040 Facemasks	Moderate Barrier	P2® 9030 Facemasks	High Barrier	P2® 9010/9020 Facemasks
ASTM F1862 Resistance to penetration by synthetic blood (mm HG)	80	80	120	120	160	160
ASTM F2101 Bacterial Filtration efficiency (BFE %)	≥ 95	≥ 99	≥ 98	≥ 99	≥ 98	≥ 99
ASTM F2299 Sub-micron particulate filtration efficiency at 0.1 micron (PFE %)	Not required	≥ 99	≥ 98	≥ 99	≥ 98	≥ 99
Differential Pressure (Delta P)	< 4.0	< 2.0	< 5.0	< 2.0	< 5.0	< 5.0
Flame Spread	Class 1	Class 1	Class 1	Class 1	Class 1	Class 1

*Based on independent testing

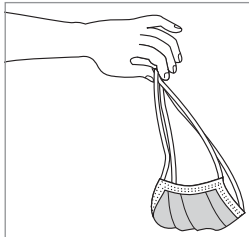
/ Proper Donning and Removal Techniques of Facemasks /

To greatly reduce the chance for infecting the healthcare worker, facilities should ensure that healthcare workers are taught proper donning and removal techniques of facemasks while observing Standard Precautions.⁴ The CDC recommends these practices for donning and removal of facemasks.



Donning:

Secure facemask on head with either ties, elastic, or earloops. Fit nose piece over bridge of nose. Take a moment to make sure that the facemask is fit snugly against face with no open gaps.⁵



Removal:

The front of the facemask is to be considered contaminated and should not be touched.⁵ Remove by handling only the ties, elastic, or earloops. Pull the facemask away from the face and discard it into a designated waste receptacle.

References

1. OSHA, Occupational Safety and Health Standards, Standard 29 CFR Part 1910.1030(d)(2)(i)
2. "Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings 2007." Centers for Disease and Control and Prevention. June 2007. 11 Feb. 2009 <http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/Isolation2007.pdf>
3. "Personal Protective Equipment for Health Care Workers Who Work with Hazardous Drugs." *NIOSH: The National Institute for Occupational Safety and Health Center for Disease Control and Prevention*, Oct. 2008. Web. 10 Sep. 2009 <http://www.cdc.gov/niosh/docs/wp-solutions/2009-106/default.html>.
4. "Standard Precautions." Centers for Disease Control and Prevention. 12 Oct. 2008. 11 Feb. 2009 http://www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html
5. "Guidance for the Selection and Use of Personal Protective Equipment (PPE) in Healthcare Settings." Centers for Diseases Control and Prevention. 20 May 2004. 7 Feb. 2009 <http://www.cdc.gov/ncidod/dhqp/pdf/ppe/PPEslides6-29-04.pdf>
6. "Standard Specification for Performance of Materials Used in Medical Face Masks." *ASTM: American Society for Testing and Materials (2007)*. Print.

TIDI's fluid resistant facemasks were designed from end user feedback to offer best-available protection and comfort. Manufactured in the USA using soft, breathable materials, our facemasks feature comfortable earloops for long-wear, and surpass protection standards.

features

- Made in the USA
- Tested using the ASTM F2100-07 test standard
- Earloop design for quick and easy donning
- Fog free strip (Item #9020 only)
- Made from lightweight and breathable materials
- Downward folding pleats to prevent pooling
- Odorless
- Latex free



CODE	COLOR/PRINT	SIZE	UNIT QUANTITY	DESCRIPTION
9010	Light Blue	Universal	10 boxes of 50 500 facemasks/case	HiRisk™ Fluid Resistant Facemask. High Barrier Protection.
9020	Light Blue	Universal	10 boxes of 40 400 facemasks/case	HiRisk™ Fog Free Fluid Resistant Facemask. High Barrier Protection.
9030	Blue	Universal	10 boxes of 50 500 facemasks/case	SafetyPlus™ Fluid Resistant Facemask. Medium Barrier Protection.
9040	Yellow	Universal	10 boxes of 50 500 facemasks/case	SafetyPlus™ Procedure Facemask. Low Barrier Protection.



Perfect for use in areas such as:

- Intensive Care Unit
- Central Sterilization
- Sterile Processing Department
- Emergency Department
- Isolation



Customized packaging allows for easy top and front access when stored in cabinets, shelves, and drawers.



Fog free strip prevents safety eyewear from fogging (Item #9020 fog free strip shown).



TIDI Products maintains an unwavering commitment to minimizing the risk of contamination and the spread of infection, protecting both the caregiver and the patient. To manage this responsibility, TIDI Products is focused on understanding the needs of medical and dental providers and the requirements of the patients.