



**International
Standard**

ISO 24269

**Nonwovens — Performance
requirements and test methods for
filtration and safety — Materials for
general use face coverings**

*Nontissés — Exigences de performances et méthodes d'essai
de filtration et de sécurité — Matériaux pour masques faciaux
d'usage général*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 38, *Textiles*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

There are many different types of masks that cover the mouth, nose and chin, including those for medical, dust-proof and general use. While the performance evaluation standards for these masks vary by countries and regions, the test methods for evaluating the performance of medical masks and dust-proof masks are similar.

However, general use face coverings which are masks used by the general public in their daily lives are, in reality, subject to different performance, safety parameters and test methods. Therefore, it is believed that masks for general use should also have universal standards.

Unlike medical and dust-proof masks, general use face coverings used by the general public are focused on ensuring a certain level of performance and safety for the wearer; they are not required to have the performance of respiratory protective devices as discussed in ISO TC94, Personal safety -- Personal protective equipment, SC15, Respiratory protective devices and are considered sufficient if their performance meets the requirements of the general public's daily living environments.

Thus, by standardizing test methods, performance and safety parameters for general use face coverings, people around the world can wear general use face coverings with peace of mind and maintain their health in their daily lives. In addition, the standardization of performance of general use face coverings is expected to lead to the development of new materials and products, thereby invigorating the market. In this way, a smooth and stable supply of general use face coverings can be made available to greater numbers of the general public.

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Nonwovens — Performance requirements and test methods for filtration and safety — Materials for general use face coverings

1 Scope

This document specifies the performance requirements and test methods for filtration property and safety of materials for nonwoven general use face coverings for single use.

This document specifies the following filtration properties:

- sub-micron filtration efficiency (PFE),
- water aerosol filtration efficiency with bacteria (BFE),
- water aerosol filtration efficiency with viruses (VFE),
- pollen particle filtration efficiency, and
- differential pressure.

This document specifies the following safety items:

- free formaldehyde,
- specific azo dye,
- heavy metals, and
- pH.

This document applies to nonwoven general use face coverings. It does not apply to medical face masks (see EN 14683 [\[1\]](#)), medical devices, or personal protective equipment (PPE) in the scope of ISO/TC94/SC15, Respiratory protective devices (RPD).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3071, *Textiles — Determination of pH of aqueous extract*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 14184-1, *Textiles — Determination of formaldehyde — Part 1: Free and hydrolysed formaldehyde (water extraction method)*

ISO 14362-1, *Textiles — Methods for determination of certain aromatic amines derived from azo colorants — Part 1: Detection of the use of certain azo colorants accessible with and without extracting the fibres*

ISO 14362-3, *Textiles — Methods for determination of certain aromatic amines derived from azo colorants — Part 3: Detection of the use of certain azo colorants, which may release 4-aminoazobenzene*

ISO 16604, *Clothing for protection against contact with blood and body fluids — Determination of resistance of protective clothing materials to penetration by blood-borne pathogens — Test method using Phi-X 174 bacteriophage*

ISO 29463-1, *High efficiency filters and filter media for removing particles in air — Part 1: Classification, performance, testing and marking*

ISO 80000-1, *Quantities and units — Part 1: General*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

general use face covering

product worn on the face, specifically covering at least the wearer's nose and mouth, with the primary purpose of providing source control which reduces the spread of potentially infectious aerosols by the wearer and to provide a degree of particulate filtration to reduce the amount of inhaled particulate matter in the normal life environment, instead of in the hazardous environment where the PPE or RPD is required

Note 1 to entry: For many users, the term "mask" is synonymous with any product worn on the wearer's face that provides a certain level of filtration efficiency. In other words, the general use face coverings in this document are also masks, but to clarify the difference between medical face masks and other face masks, this document refers to general use face masks as face coverings.

3.2

sub-micron particulate filtration efficiency

sub-micron PFE

efficiency of the filter material in capturing aerosolized particles smaller than one micron, expressed as the percentage of a known number of particles that do not pass through the *general use face covering* (3.1) material at a given flow rate or face velocity

[SOURCE: ASTM F2100-25 [2]]

3.3

water aerosol filtration efficiency with bacteria

water aerosol BFE

effectiveness of the general use face coverings in preventing the passage of aerosolized bacteria, expressed in the percentage of a known quantity that does not pass the general use face covering material at a given aerosol flow rate

[SOURCE: ASTM F2101-25 [3]]

3.4

water aerosol filtration efficiency with viruses

water aerosol VFE

efficiency to collect aerosol containing virus among the droplets produced when coughing, sneezing, and talking

[SOURCE: JIS T9001 [4]]

3.5

pollen particle filtration efficiency

efficiency to collect pollen particles in the air

[SOURCE: JIS T9001 [4]]

3.6 differential pressure

air permeability of the general use face covering, measured by determining the difference of pressure across the general use face covering under specific conditions of air flow, temperature and humidity

Note 1 to entry: The differential pressure is an indicator of the “breathability” of the general use face covering.

[SOURCE: EN 14683:2025 [\[5\]](#)]

3.7 personal protective equipment

PPE

any device or appliance designed to be worn or held by an individual for protection against one or more health and safety hazards

[SOURCE: ISO/TS 20141:2022 [\[6\]](#), 3.8]

3.8 respiratory protective device

RPD

personal protective equipment ([3.7](#)) designed to protect the wearer’s respiratory tract against inhalation of hazardous atmospheres

[SOURCE: ISO/TS 16975-1:2016 [\[7\]](#), 3.8]

3.9 medical face mask

item of protective garment designed to protect portions of the wearer's face, including at least the mucous membrane areas of the wearer's nose and mouth, to minimise the direct transmission of infective agents between staff and patient

[SOURCE: ISO 11610:2023 [\[8\]](#), 10.2.3]

4 Performance requirement

4.1 Filtration

General use face covering shall be subjected to at least one filtration performance test item shown in [Table 1](#), to conform to this document. The differential pressure test shall be performed.

Table 1 — Performance requirement of general use face covering

Functional test item		Unit	Performance requirement	Test methods (Clause No.)
Sub-micron particulate filtration efficiency (PFE)	using polystyrene latex particles	%	≥95	5.1.2
	using NaCl		≥50	5.1.3
Water aerosol filtration efficiency with bacteria (BFE)		%	≥95	5.2
Water aerosol filtration efficiency with viruses (VFE)		%	≥95	5.3
Pollen particle filtration efficiency		%	≥95	5.4
Differential pressure		Pa	<300	5.5

The tests are applied to the main product part related to breathing only (excluding accessories such as elastic head harness).