

MASKS FILTERING, FACE PIECE, AND FABRIC COVERINGS RESOURCE

	FILTERING FACEPIECE RESPIRATOR	SURGICAL MASK	KN95	NON-MEDICAL MASK	NON-MEDICAL MASK	FACE SHIELDS
	PERSONAL PROTECTIVE EQUIPMENT			SOURCE CONTROL		
Common Name(s)	N95 respirator, Respiratory Protection, FFR	Mask (Medical mask, Procedure mask)	Respirator	Disposable Mask, daily protective mask	Fabric Face Covering or cloth mask, Source Control	Face Shields, transparent visor,
Who is this designed to protect?	Wearer, from exposure to aerosols	Wearer, from direct blood sprayed from a patient	Wearer, from exposure to aerosols	Others, from saliva droplets generated by the wearer, to a limited degree for wearer	Others, from saliva droplets generated by the wearer, to a limited degree for wearer	Others, from saliva droplets generated by the wearer, to a limited degree for wearer
Who certifies or tests the device?	United States: National Institute for Occupational Safety and Health (NIOSH) 42CFR84	United States: American Society for Testing and Materials International (ASTM) formerly ASTM F2100	China: Standardization Administration of the People's Republic of China GB2626-2006	China: Standardization Administration of the People's Republic of China GB/T32610-2016	Not Applicable	Health Canada - Medical Device Bureau of the Therapeutic Products Directorate. Depending on the device CSA 94.3:20, eye and face protectors
What is the classification?	N - non-oil E.g. N95, N 99 and N100 R - oil resistant P - oil proof Note: 95, 99 and 100 refer to efficiency of particulate filtration <0.3 um	Level 1, 2, or 3 3.0 um >95% 0.1 um >95%	KN95 and as Non-Medical. Seek guidance from the US FDA on list of approved suppliers and verification by supplier by NIOSH.	Non-Medical Tested to PM 2.5 um environmental pollutant	No classification	Class 1 - Medical Device OR Class 1 to 6 - CSA

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Fitting	Tight fitting and is verified through a fit test and daily user seal check. Must not have facial hair	Loose fitted, no verification. No mention of beard	Tight fitting and is verified through a fit test and daily user seal check. Must not have facial hair	Loose fitted, no verification. No mention of beard	Loose fitted, no verification. No mention of beard	Loose fitted, No verification. No mention of beard
Air leakage when inhaling or exhaling?	No air leakage, if fitted correctly, with no facial hair	Does leak. Not intended to prevent air leakage	If fitted correctly, for user wearing correctly, with no facial hair, should be no air leakage	Does leak. Not intended to prevent air leakage	Does leak. Not intended to prevent air leakage	Does leak. Not intended to prevent air leakage
Washable?	No	No	No	No	Yes	Yes
Major concern	Not currently available. Very expensive, and counterfeit product in market	Limited availability. Very expensive, poor understanding on fit and use by general public	Available. Ear loop style may not provide good fit for all users. Counterfeit products on market	Available. Ear loop style may not provide good fit for all users. Counterfeit products on market	Available. Anyone can make them with any material. Not tested nor approved. Too many variables	Very expensive. Poorly understood by general public – It does not replace a mask.

NOTE: Prior to using this table as a resource for controls, a workplace risk assessment must be conducted and the Hierarchy of Control must be followed. Protective Equipment of any kind is not the sole method of control.

CAUTION: There are currently a variety of protective equipment on the market. Buyers should be aware that there are counterfeit products as well as non-certified products that are currently being sold. There are also products manufactured and certified by organizations outside of North America and may be effective in providing protection. Always use reputable sources for purchasing protective equipment. Wearers with pre-existing breathing conditions should consult their physician before using respiratory protective equipment.

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General Guidance:

1. **Face coverings** is a generic term used to describe a variety of styles and designs that resemble, but do not follow any written standard or protocol for manufacturing and are not tested or rated. The variability is introduced with the fabric being used, the density of the weave, the fibre blend, number of layers, design etc. The second factor is the fit and use by the wearer, as there is no concern for beards, facial structures or user training. People below the age of 2 or those with breathing difficulty should consider other options for protection.
2. **Surgical masks** and **filtering face piece respirators** are designed, manufactured and meet the certification and testing for efficiency and performance requirements from a body like ASTM or NIOSH in the United State of America.
3. **Always start with a risk assessment to determine the level of risk and hazard posed by the work environment. Employ the Hierarchy of Controls to ensure all other methods of controls have been considered or not feasible before resorting to the use of PPE.**
4. Irrespective of the protective equipment used, there should be some level of user training or knowledge to ensure the item is worn, cleaned and stored to avoid cross contamination or a false sense of protection.
5. Physical (Social) distancing and other measures must always be considered as options before proceeding with protective equipment.
6. If you feel compelled to wear a fabric face covering, it's for situations when physical distancing is not possible (i.e. grocery store). The secondary benefit is that it acts as a reminder not to touch your face, and the psychological comfort of others and yourself. This will all work if self-screening and physical distancing are used diligently and consistently.
7. The value of hand washing or hand sanitizing along with sneezing and coughing etiquette should not be underestimated in its effectiveness in controlling the spread of SARS-CoV-2.

Other Questions Posed:

- Q. How long can one covering (is this mask or cloth face covering?) be worn for (how often should it be changed in an 8 hour shift)?**
- The length of use must be based on the type of protective equipment, the contaminant in question, the availability of the equipment, and the potential risk to the wearer. No single guidance can be applied across the board for the variety of protective equipment currently available.
 - Surgical masks and disposable masks are normally not intended to be used more than once. If your mask is damaged or soiled, or if breathing through the mask becomes difficult, you should remove the face mask, discard it safely, and replace it with a new one.

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- Seek guidance for your industry or trade on current advice during the shortage of protective equipment during the pandemic. The CDC has provided directions for the health care sector on this matter for length of use and re-use of surgical masks. The current guidance during the pandemic is quite different due to the shortage of equipment and its availability.
- The worker must take care not to touch their facemask. If they touch or adjust their facemask they must immediately perform hand hygiene.
- Be advised that non-medical face coverings are not designed or manufactured or tested to any standard and no single guidance can be applied across the board.
- Typically filtering facepiece respirators have and continue to be used in industry for extended timeframes to protect the wearer from industrial contaminants, without noted adverse effects from extended use over a work shift.

Q. What is the risk of bacteria accumulation on the coverings and the risk related to that to the worker?

- The risk of bacteria is ever present in our environment, the current pandemic is based on the virus SARS-CoV-2.
- The risk arises if the wearer touches surfaces or their face covering, and do not wash or sanitizing their hands. Hence, the secondary benefit of face covering to act as a barrier or reminder to those who inadvertently or habitually touch their face, mouth, nose or eyes.
- The reusable non-medical fabric face coverings should be washed with soap and water and follow the manufacturer's direction and dried. Inspect for damage or wear and tear prior to re-use. Discard if damaged.

Q. What is the risk of reduced oxygen due to the face covering over an 8 hour shift?

- Hypoxia is defined as the lack of oxygen. Hypoxia is not a known or observed issue with the use of filtering face pieces or surgical masks in the literature. Hence, it could be extrapolated that fabric face coverings would not cause hypoxia. It's not a leap in faith that the user is wearing a permeable fabric face covering.
- It is commonly misunderstood that discomfort during the use of any face covering etc. leads to heat build-up and varying degree of breathing resistance and does not constitute hypoxia condition. The micro climate within the mask can become uncomfortable with moisture building up inside of the mask. Exercise caution when wearing masks in hot, humid environments, or during physically demanding work, to avoid the effects of added heat strain on the wearer.

Q. Can a KN95 mask be fit tested?

- Yes, as it is considered a tight fitting respirator. The actually pass rate may vary compared to N95 mask due to the ear loop design. Ensure you purchase your masks from the approved manufacturers list published by the FDA.

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Resources

Legislation:

Control of Exposure to Biological or Chemical Agents, R.R.O. 1990, Regulation 833. Retrieved from: <https://www.ontario.ca/laws/regulation/900833?search=833+>.

OHS Standards:

Canadian Standards Association (CSA). (2018). *Selection, use, and care of respirators*. Toronto, ON. CSA Group.

Guidance Documents:

3M. (May, 2020). *Comparison of FFP2, KN95, and N95 and Other Filtering Face piece Respirator Classes*. Retrieved from: <https://multimedia.3m.com/mws/media/17915000/comparison-ffp2-kn95-n95-filtering-facepiece-respirator-classes-tb.pdf>

National Institute for Occupational Safety and Health [NIOSH]. (April, 2020). *NIOSH-Approved Particulate Filtering Facepiece Respirators*. Retrieved from: https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html

Public Health Ontario [PHO]. (May, 2020). *Mask Use for Non-Healthcare Workers*. Retrieved from: <https://www.publichealthontario.ca/-/media/documents/ncov/factsheet/2020/05/factsheet-covid-19-masks-not-healthcare.pdf?la=en#:~:text=When%20wearing%20masks%2C%20it%20is,alcohol%20based%20hand%20rub%20often.&text=Masking%20for%20source%20control%20needs,strategy%20to%20reduce%20transmission%20risk.&text=Medical%20masks%20are%20to%20be%20conserved%20for%20use%20in%20healthcare%20workers>.

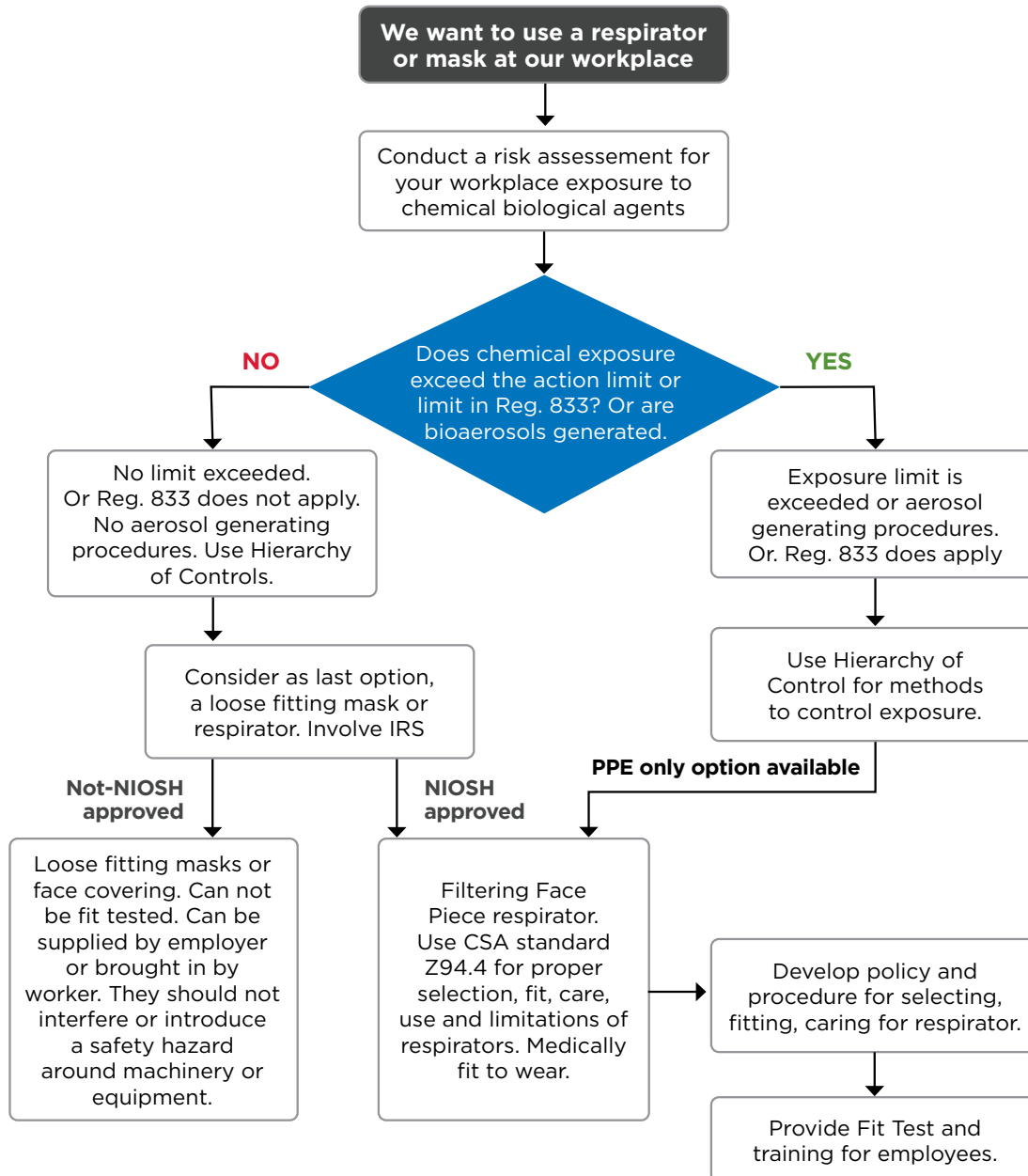
U.S. Food and Drug Administration [FDA]. (July, 2020). *Coronavirus (COVID-19) and Medical Devices: Masks and Respirators*. Retrieved from: <https://www.fda.gov/medical-devices/emergency-situations-medical-devices/coronavirus-covid-19-and-medical-devices#masksrespirators>

World Health Organization [WHO]. (January, 2020). *Advice on the use of masks in the community, during home care and in health care settings in the context of the novel coronavirus (2019-nCoV) outbreak: interim guidance*. Retrieved from: <https://apps.who.int/iris/handle/10665/330987>

World Health Organization [WHO]. (August, 2020). *Coronavirus disease (COVID-19) advice for the public: When and how to use masks*. Retrieved from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks>

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General Principles and questions to ask before selecting Respiratory Protection during Pandemic. Industrial and Manufacturing sector.



LEGEND

Reg. 833 - Control of Exposure to Chemical and Biological Agents, made under the Occupational Health and Safety Act in Ontario
CSA Z94.4 - Canadian Standards Association Selection, use and care of respirators.
NIOSH - National Institute for Occupational Safety and Health in the USA
IRS - Internal Responsibility System

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For more information, visit www.wsps.ca

NOTE: This document is intended for informational purposes only to provide an overview of the potential hazards posed in the workplace due to COVID-19. It is not intended as medical advice, to provide a comprehensive risk assessment for all workplaces, or to replace any legislated workplace safety obligations. WSPS has not endorsed and does not endorse any particular product or company as a solution to the risk presented by COVID-19. Due to the ongoing evolution of the situation in Ontario and around the world, this document may be used as a guide for Employers in addition to guidance delivered by public health authorities such as the World Health Organization (WHO), Ontario Ministry of Health, Public Health Ontario and the Centers for Disease Control and Prevention (CDC). Any use which is made of this document by any Employer or individual, or any reliance on or decisions to be made based on it, are the responsibility of the Employer or individual. WSPS and its partners, officers, directors, employees, agents, representatives, suppliers and service providers accept no responsibility for any errors or omissions in content or for damages of any kind or nature suffered by any Employer or any third party as a result of use of or reliance on this communication.