

FAQ: PPE Considerations

Hierarchy of Controls for Biological, Chemical and Physical Agents

This document contains guidance to frequently asked questions about PPE, links to credible resources and other options you may consider in the absence or limited availability of PPE.

Q. The use of N95 masks has been deemed necessary in your work environment. Disposable N95 Respirators are unavailable, what do you do?

- A. The classification of respirators comes from the National Institute for Occupational Safety and Health (NIOSH) where the **N (not oil proof)** rating is applied. If N95 respirators are not available, consider the use of **R (oil resistant)** or **P (oil proof)** rated respirators. These are all respirators that also filter out particulate at 3 microns. Each of these N, P and R particulate filters can have three levels of filtration efficiency. The number in the name refers to the level of efficiency in filtering particulates at 3 microns in diameter and categorized as 95, 99 and 100. Disposable masks are not designed to be washed or wetted. Speak to your supplier as to what is currently available. You can also investigate these options.
1. Half-face respirators and power air purifying respirators are another option and offer greater protection than disposable N95 respirators. Both types of respirators require the use of one or two HEPA filter cartridges that can be replaced, depending on the style. These respirators can be cleaned and reused. Follow the manufacturer's instructions.
 2. Workers that are required to use an alternate style of respirator should be informed of any changes and included in the selection process in order to minimize the potential for user acceptance issues.
 3. Irrespective of the type of respirator, the wearer must be trained and properly fit tested to the equipment, its use and limitations. Refer to the Canadian Standards Association Z94.4-18 – Selection, use and care of respirators, for further guidance. Correct user seal checks and doffing methods to prevent cross contamination must be adhered to. In all cases, ensure that manufacturer directions for use, cleaning and maintenance are followed. www.csagroup.org
 4. When fit testing respirators, the fit testing hood and associated equipment must be sanitized between users. <https://multimedia.3m.com/mws/media/18191540/fit-test-hygiene-during-covid-19-pandemic.pdf>

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5. When removing the respirator after use, precautions must be taken to avoid contaminants from spreading. The mask should be disposed in a manner to avoid contaminating other surfaces. https://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95respirator_coveralls/doffing_16.html
6. Re-assess why respirators are used in the workplace and consider alternatives to eliminate the need for this personal protective equipment. Eliminate tasks that require the use of respiratory protection wherever possible or delay the work until appropriate PPE can be obtained. Controls at the source of the hazard and along the path may offer better protection in the long run and be more cost effective.
7. If you determine that disposable/single use respirators are the only feasible alternative, look to other countries that have respirators. Note that the rating system may differ and the criteria may be different from the N95 rating provided by NIOSH. <https://multimedia.3m.com/mws/media/17915000/comparison-ffp2-kn95-n95-filtering-facepiece-respirator-classes-tb.pdf>. Ensure you purchase PPE from a reputable supplier. The FDA in the US has approved certain manufacturers of KN95 Respirators. Although they are not approved by NIOSH, they are approved for use during this crisis. <https://www.fda.gov/media/136663/download>
8. NIOSH is re-evaluating the expiry date on old unused respirators and extending the life for some respirators. They are also providing extensions regarding the end of use for respirators due to the current shortage. These guidelines are intended for the healthcare industry and may not apply to industrial settings. <https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html>
9. Note that item 5 and 6 are primarily intended for health care environments.

Q. Disposable protective apparel are unavailable, what do you do?

- A. Although these products are disposable, they can be re-used multiple times and should be discarded when damaged. These garments may not be designed for disinfecting or washing. Seek direction from the manufacturer.**
1. Remove and discard contaminated disposable apparel to avoid cross contamination of surfaces.
 2. Consider the use of fabric clothing that can be commercially laundered and re-used. Consider the application and appropriateness of the fabric and the hazard posed in the workplace. For example, static discharge from wearing certain fabrics in the presence of flammable vapours or explosive dusts.

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3. For any soiled uniforms, laundry etc., minimize shaking and disturbance; If possible, arrange to ensure the laundering of items using the warmest appropriate water setting for the items and dry items completely and clean and disinfect hampers or other carts for transporting laundry and sanitation equipment. Use a commercial laundry service to avoid cross contamination and at home washing of contaminated clothing.
4. Workers that are required to use an alternate style or type of apparel should be informed of any changes and included in the selection process in order to minimize the potential for user acceptance issues.

Q. Disposable Nitrile Gloves are unavailable, what do you do?

- A. Nitrile gloves are one variety of impervious gloves available from manufacturers. Speak to your supplier to determine if other glove materials like Viton, PVC, latex, etc. are safe to use with the type of chemical you are using. The manufacturer may be able to guide you on an alternate glove material for your application.**
1. Determine if your company has been purchasing medical grade gloves or industrial grade. Select the correct grade of glove for the application.
 2. Be advised that the colour of the glove material is not an indication of level of protection or use.
 3. There are different densities of glove materials. Consider the importance of tactile sensation required for handling materials and determine if a thicker glove of the same material is appropriate for the application.
 4. Be advised that washing and re-using gloves should only be done in consultation with the manufacturer as chemicals may permeate the glove without visual signs of damage (discolouration, texture) and affect the skin if worn repeatedly or for extended periods of time.
 5. Users should be aware of cross contamination of clean surfaces (door knob, handles, face or other body parts) when gloves are contaminated.
 6. Due to the impervious nature of gloves, extending the wearing time may impact the skin and may lead to dermatitis due to the sweat accumulation inside of the gloves.
 7. User training in the removal of contaminated gloves and proper disposal should be followed to avoid cross contamination. <https://www.publichealthontario.ca/-/media/documents/ect-gloves-doffing.pdf?la=en>
 8. Always wash your hands after removing gloves. <https://www.cdc.gov/handwashing/index.html>
 9. Workers that are required to use an alternate style or type of gloves should be informed of any changes and included in the selection process in order to minimize the potential for user acceptance issues.

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Reconsider the use of PPE as the first line of defence. There are other options to consider at the source, along the path or at the worker. The following list is based from high to low in reliability and effectiveness:

A. Elimination

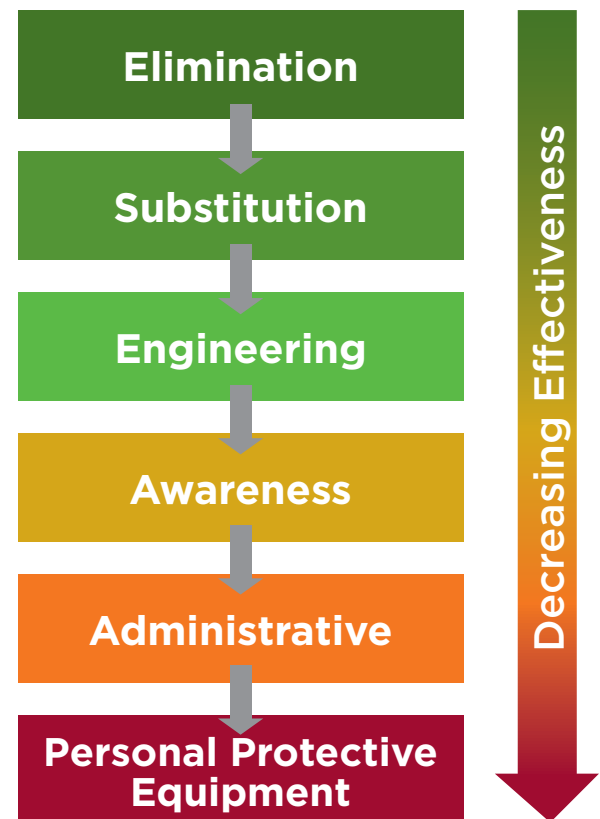
- i. Postponing non-essential projects
- ii. Eliminate non-essential tasks
- iii. Eliminating the hazard where feasible

B. Engineering controls

- i. Substituting the process that generates contaminant with a method that produces less contaminant. For example, if cutting a material using a dry method, use a wet method to control particulate migration and dust generation
- ii. Enclose the process to separate the source from the worker
- iii. Add local exhaust ventilation to extract the particulate at the source of generation (For example – add a vacuum system to remove particulate from the enclosed process)
- iv. Increase fresh air intake when possible

C. Administrative controls and/or work practices

- i. Relocate employees from contaminant generating process
- ii. Educate employees on work practices that reduce aerosol generation and implement procedures to reduce or eliminate generation hazards (example – eliminate the use of compressed air for cleaning of equipment and provide alternative tools/methods)

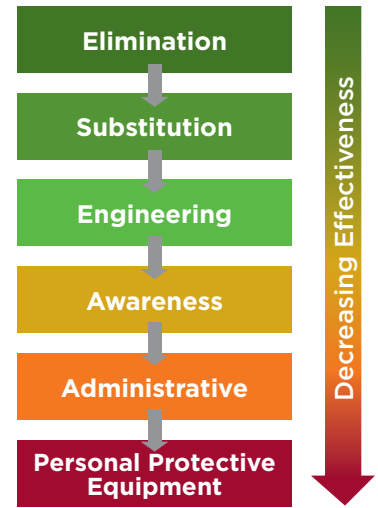


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- iii. Limit the number of people (workers, contractors, public) in one space so that they can distance themselves from each other by:
 1. Staggering shifts and break times
 2. Practicing physical distancing during breaks
 3. Not entering work areas where physical distance cannot be maintained
 4. Consider limiting the number of entry points, using floor markings to show distance to be kept apart and desired people flow
 5. Consider changing the work layout
- iv. Clean surfaces (e.g. counters, doorknobs, switches, tools, equipment etc.) – ensure cleaning supplies are available and proper location of supplies to ensure they are accessible to all workers required to carry out cleaning
- v. Reduce or eliminate face-to-face interactions and when in-person interactions are essential, adhere to physical distancing recommendations
- vi. Reduce time in the work area by establishing or increasing frequency of job rotation
- vii. Have all employees and visitors wash their hands thoroughly before entering the facility, after contact with others or with surfaces others have touched. Be sure to include handwashing before breaks, and at shift changes. Keep an adequate supply of soap, paper towels, etc.
- viii. Use good hand washing techniques, (minimum 20 seconds) and avoid touching your face. Use paper towels instead of using an air dryer for hand drying.
- ix. Evaluate the supply chain and implement controls: know where objects are coming from and verify that suppliers have implemented controls upstream to reduce hazards related to materials being received
- x. Screen workers regularly for health issues, using guidelines on the Ministry of Health and Long-Term Care website. Implement procedures for reporting the illness and keeping these workers away from others.
- xi. Train employees on the Workplace Hazardous Materials Information System (WHMIS)
<https://www.wsps.ca/Shop/Training/E-Courses/WSPS-WHMIS-2015-for-Workers-eCourse.aspx>



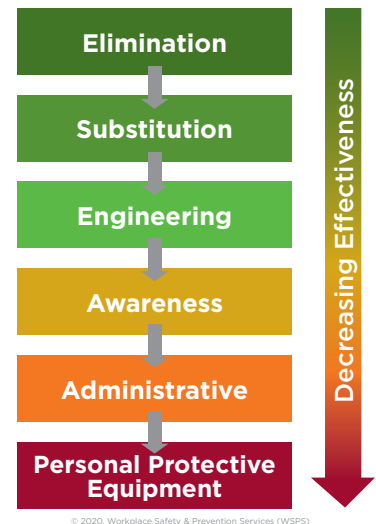
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D. PPE: If the above recommendations are still not enough for your workplace, as a last resort, consider PPE. PPE is only effective if people wear it correctly. Ensure PPE training includes the fit, use, care, putting on and taking off, maintenance, cleaning and limitations of the PPE. Provide and maintain appropriate containers for disposal of used PPE.

Some examples of PPE that may be suited to workers include:

- i. Overcoats or gowns
- ii. Gloves – single use gloves can help limit contact with certain surfaces, product, etc. Set up practices for suitable disposal and change when soiled. Be sure you consider other hazards that may be present in the workplace before introducing gloves – in some cases, gloves can be an ‘entanglement’ hazard and should not be worn.
- iii. Safety Glasses, Goggles or Face Shields – should be assigned to people and not shared, but can be used regularly if kept clean. Be sure to have that considered if you determine you’ll use them and ensure use does not result in workers touching their faces more often due to heat or discomfort.



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