


<b>HARVARD</b> CAMPUS SERVICES  <b>ENVIRONMENTAL          HEALTH &amp; SAFETY</b>	COVID-19  <u><b>Resuming On-Campus Research</b></u>	
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## Introduction

**In preparation for returning to the lab and starting up, Principal Investigators and laboratory personnel should:**

- Create a plan for ensuring health and safety of personnel through physical distancing and lab hygiene. See [Tips for Physical Distancing & Lab Hygiene](#).
- Ensure individuals returning to campus are trained and able to perform their functions safely. Some of this may be outside their regular scope of work.
- Contact Radiation Safety Services to resume work with radioactive materials.
- Confirm that all work with biological materials is covered under a current, approved COMS registration.
- Perform an inventory of what is on hand and what needs to be ordered before work can resume – this will be a driving factor of when people can return to the lab and resume their work.
- Ensure PPE is available and stored properly. Everyone should have access to their own PPE including eye protection, gloves, and lab coat. When PPE must be shared, ensure procedures are in place to clean & disinfect shared PPE with a method that does not damage the PPE. See [Tips for Physical Distancing & Lab Hygiene](#).
- Assess PPE storage and ensure that reusable PPE does not co-mingle after being worn unless being collected for cleaning/disinfection.
- Implement procedures for routine disinfection of heavily touched surfaces and shared equipment. See [Tips for Physical Distancing & Lab Hygiene](#).



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- Conduct initial walkthrough
  - Dispose of supplies that are now expired.
  - Check Biosafety cabinet certification dates and arrange re-certification with a vendor (i.e. B&V testing) as needed.
  - Confirm that fume hoods have been certified within past year. Contact EH&S if certification is needed.
  - Check that chemical containers are intact and that reagents do not appear compromised. Dispose of any items that can no longer be used in research. Contact your LSA if you identify any containers that may require special handling.
  - Ensure handwashing soap and paper towels are available at all sinks.
- Document new lab-specific policies or procedures. Update Lab-Specific Orientation checklist/addendum and retrain all lab members (virtually is Ok).
- Ensure all lab members have completed Lab COVID Awareness training in HTP.



## Tips for Physical Distancing & Lab Hygiene

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**Available Separately:**

- [Reusable Safety Glasses/Goggles/Face Shields: Use, Care, and Decontamination](#)



## COVID-19 Lab Space Tips

**Note to researchers:** This will be a stressful time and will require a lot of collaboration between labs, researchers on the same floors, building operations, and University Environmental Health & Safety (EH&S). Although you as an individual cannot enact all the recommendations below, these guidelines are to inform you and your research groups of strategies that can be taken to minimize the [transmission of SARS-CoV-2](#). Each space will be unique and have its own challenges. If you are not sure how to best enact any of the strategies below, please reach out to [EH&S and your Lab Safety Advisor \(LSA\)](#).

### Resources

1. [COVID-19 Lab Space Tips](#)
2. [SARS-CoV-2 Disinfectant Safety Information](#)
3. Service Contractors
  - If a lab needs to bring in an outside vendor or a service contractor the [Service Contractor Guidance](#) document must first be consulted. Please visit the [EH&S website](#) for other COVID-19 EH&S guidance documents.

### Research Schedule Adjustments

4. **To lower the density of researchers in the lab, consider assigning work shifts** based on research type and tasks. If possible, consider staggering schedules based on where lab work is performed and desk locations to optimize for 6 feet of separation. PIs will be responsible for overseeing lab density plans.
5. **Work shift examples include but are not limited to:**
  - a. Two or more shifts per day (e.g., AM and PM shifts).
  - b. Two or more shifts per week (e.g., Monday-Wednesday and Thursday-Sunday shifts).
  - c. Dividing a several week period into shift blocks (e.g., Team A, B and C stagger work using 5-day blocks on a 15-day cycle: 5 days on, then 10 days off).



**6. Consider staggering:**

- a. Arrival times to reduce overcrowding in elevators and stairwells.
- b. Break and lunch times.

**7. Unique issues arise when performing research outside of standard hours**

- a. Fatigue - working in a lab in a fatigued state can compromise decision making and reaction time.
- b. Although working alone may seem ideal during a pandemic, laboratory work is inherently dangerous and best done with others within proximity (but more than six feet away).
- c. Only your PI can approve working alone in the lab.

Physical Distancing in Labs

- 1. Stagger locations for benchwork to achieve 6 feet distance between researchers.**
- 2. Consider determining maximum room and/or bay occupancy numbers** that will minimize physical contact.
- 3. If you are optimizing distancing** by working in a laboratory space other than your own, you must follow that lab's safety guidelines and be trained in their procedures.
- 4. Consider performing non-bench work remotely**, where possible.
- 5. Try to limit the number of people in in-person meetings, and during break times.**
- 6. Consider creating a lab map (and posting it) to alert people of the different shifts' work and desk areas.** For larger spaces, a map can also outline traffic flow patterns which can help to keep people apart.
- 7. Examples of controlling traffic flow in labs include:**
  - a. Restricting the number of researchers in small lab spaces, like chemical storage rooms, tissue culture rooms, and cold rooms. Depending on the size of the room, it's possible that only one person may be in the room at a time to maintain a 6-foot distance from others;



- b. Minimize traffic by assigning bench space based on proximity to desk space when possible;
- c. Identify frequently used and shared equipment and plan out traffic flow patterns to access such equipment while minimizing likelihood of personnel interaction.

**8. Examples of controlling traffic flow in lab buildings include:**

- a. Limit movement in the building to one floor if possible.
- b. If using equipment on other floors, coordinate the lab's use of those facilities or instruments to limit the number of people moving and number of people in stairwells/elevators/halls.
- c. Coordinate sample transfers and pick-ups to designated areas.

**9. Relocate equipment where possible to create barriers and section off work areas that are 6 feet or more apart.**

**10. Consider designating specific entrance/exit doors** (reduce to single entrance and exit to minimize cross traffic).

- a. Relocate shared equipment away from specified entrance/exits to minimize the chances of crowding.

**11. Consider assigning parts of common areas like break rooms to different teams to minimize crossover.**

**Cleaning/ Disinfecting**

- 1. Consider creating a log along with a checklist that communicates when and what items were disinfected.
- 2. Try to disinfect your desk area and personal items regularly.
- 3. Consider disinfecting common surfaces that are frequently touched, like door handles, light switches, water faucets, etc. It is especially important to disinfect surfaces that are commonly touched with bare hands. Keep disinfecting materials near these surfaces along with a waste receptacle for used paper towels or wipes.



#### PPE and Personal Item Storage/Handling

1. Consider designating separate storage areas for clean and used/contaminated PPE. Store personal PPE in designated area to indicate it is not for communal use.
2. Personal items can be carriers of SARS-CoV-2:
  - a. Do not touch personal items when wearing PPE (this is not a new policy).
  - b. Try to bring in your own personal dishes and utensils if you plan to eat while at work. Wash hands after handling communal items and using utensils.
  - c. Consider bringing home water bottles after shift to avoid crowding of common shelves.

#### Other Considerations

1. **Improper use of PPE can decrease effectiveness, we recommend frequent hand washing rather than gloves to limit the spread of SARS-CoV-2 s in public spaces.**
2. **Eating/drinking is still prohibited in lab spaces.**
3. **Treat ALL evacuation alarms as real. Evacuate as you typically would.**
4. **Restrict Access** - Ensure all who want to enter labs have taken the Lab COVID Awareness training. If a service contractor is needed, you must ensure they comply with [service contractor University health and safety guidelines](#).

#### COVID-19 Tips for Shared Equipment

Employee infection prevention recommendations are based on an approach known as the [hierarchy of controls](#). This approach groups actions by their effectiveness in reducing or removing hazards. In most cases, the preferred approach is to eliminate a hazard or process; install engineering controls; and implement appropriate cleaning, sanitation, and disinfection practices to reduce exposure or shield workers. Administrative controls are also an important part of an approach to prevention in these workplaces.





The following tips are **recommendations** that are based on the elements of the hierarchy of controls. Each space will be unique and have its own challenges. If you are not sure how to best enact the strategies below, reach out to EH&S and your Lab Safety Advisor (LSA).

#### Resources

1. [COVID-19 Lab Space Tips](#)
2. [SARS-CoV-2 Disinfectant Safety Information](#)
3. [PPE in Labs: SARS-CoV-2 Considerations](#)
4. [SARS-CoV-2 PPE Disinfection Flow Chart](#)

#### Exclusions

##### 1. Minimize shared items:

- a. When possible, each person should be provided with their own lab items e.g. safety glasses, pens, notebooks, pipettes, reagent bottles, etc.
- b. When refilling liquid nitrogen dewars at centralized filling area, bring your own PPE (face shield and cryogloves or gauntlets at a minimum), if possible. Review Personal Protective Equipment in Labs: SARS-CoV-2 Considerations for shared PPE.

##### 2. Cold rooms/warm rooms:

- a. Environmental rooms typically continuously recirculate air - there is usually no mechanically supplied air or exhausted ventilation.
- b. Designate a single person/restrict number of people working in or retrieving material from these spaces. If working in the space, disinfect work area after use.
- c. Disinfect door handles upon exiting space.

##### 3. High risk tasks/processes that require multiple people should be postponed if possible.

##### 4. Limit access to equipment rooms:

- a. Where possible, work with facilities to limit access to equipment rooms.



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- Use schedules to limit occupancy to as few occupants as possible. Maintain these online and post near equipment space entrances.
  - If possible, revise key card access permissions to restrict access to specific individuals for designated time slots.
  - If possible, rekey locks and provide keys only as needed.
- b. Establish space usage guidelines that optimize the distance between people.

### 5. Machinery hazards:

- a. Eliminate any additional hazards created by face masks or poorly fitting PPE (e.g., face mask ties that dangle or catch, PPE that is loose and requires frequent adjustment or tends to fall off) with respect to the work environment (e.g., flames, machinery in which PPE could get caught).

### Arrangement

#### 1. Rearrange Equipment:

- a. To allow researchers to be spaced at least six feet apart in all directions (e.g. side-to-side and/or facing one another)
- b. To avoid having high traffic areas

#### 2. Post markings/signage on shared equipment:

- a. To remind and clarify policies intended to ensure social distancing / minimize potential for infection

#### 3. Physical barriers:

- a. Use physical barriers such as plexiglass to create partitions in high traffic areas.
- b. Partition material should be non-porous / of a nature that can be easily decontaminated and flame-resistant.

#### 4. Marking of floors:



- a. Mark floors around shared equipment with tape (i.e. instruments) to achieve 6 ft separation, where possible.
- 5. Evaluate any equipment that directs air flow** (e.g. fans for equipment cooling, air guns for drying glassware, soldering fume extractors etc.):
- a. This equipment should be evaluated to ensure that air is not being directed in a way that could be increasing the potential for spreading respiratory droplets.

## Cleaning

- 1. Disinfection of Shared Equipment** (e.g. glove boxes, microscopes, lab computers, scales, hand tools, fume hood and biosafety cabinet sashes, etc.):
  - a. Develop a disinfecting plan specific to each piece of shared equipment.
  - b. Provide cleaning supplies and procedures that are kept close to each piece of equipment.
  - c. Specify disinfectants per equipment and ensure use in accordance with manufacturer's instructions.
    1. Ensure compatibility between disinfectants and various equipment surfaces.
    2. Consult equipment manufacturers for any cleaning procedure guidance.
    3. [EPA-registered disinfectants](#)
  - d. [SARS-CoV-2 Disinfectant Safety Information](#)
  - e. Clean commonly touched equipment surfaces before and after use (last person to use the item when finished as well as the next person before proceeding).
  - f. Wipe down sashes/surfaces close to faces (gloveboxes, fume hood sashes, microscope oculars, biosafety cabinet sashes, magnifying viewing pieces).
- 2. Disinfectants:**
  - a. Disinfect hard, non-porous surfaces using EPA approved disinfectants.



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- b. Soft surfaces are not easily disinfected, consider replacing them with hard surfaces (e.g. cloth seats for vinyl seats).
- c. Purchase single-use disinfectant wipes for touchpoints within their workspaces.
- d. Avoid putting disinfectant gels or liquids on electronics and other equipment unless they have been indicated as safe to use on those devices.
- e. If an EPA approved disinfectant is not available, please contact EHS for assistance.
- f. Do not mix bleach or other cleaning and disinfection products together.
- g. [SARS-CoV-2 Disinfectant Safety Information](#)

### Training

1. **In-Person Equipment Training (in order to minimize time doing in person training consider the following tips):**
  - a. Place SOPs on Wiki pages.
  - b. Develop online instructions and quizzes for core labs.
  - c. Restrict equipment trainings to one-on-ones while maintaining social distancing as much as possible and ensuring compliance with University PPE guidance.
  - d. Create a video.

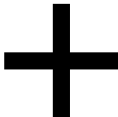

### Scheduling

1. **Scheduling system for shared equipment** to limit number of occupants in one space at a time and allow sufficient time for disinfection between use.
2. **Plan time-sensitive research activities accordingly** and prepare contingency plans in case of workflow disruption.
3. **Equipment Service Contractors:**
  - a. If a service contractor is needed, you **must** ensure they comply with [service contractor University health and safety guidelines](#).



- b. Schedule contractors to come to labs during times of no or low researcher occupancy.

### Personal Protective Equipment in Labs: SARS-CoV-2 Considerations

<p><b>Recommendations</b></p> <p><b>Herein Do Not Replace PPE Nor Research Safety Protocols</b></p> 	<ul style="list-style-type: none"> <li>• This guidance is not to replace standard PPE requirements and training, nor cleaning or disinfection procedures. It is to serve as a supplemental guide to minimize the spread and potential contact with SARS-CoV-2 enveloped viral pathogens.</li> <li>• If your lab/group or product manufacturer already has cleaning and disinfection protocols that include EPA-registered disinfectants for use against the novel coronavirus, those protocols can take precedence over the guidelines below.</li> <li>• Cloth face coverings are not PPE; surgical/procedure masks and respirators are PPE. We recommend having separate face coverings that are worn while doing lab research, if necessary, and ones you wear during your commute.</li> </ul>
<p><b>Preparing PPE: Before Use</b></p>	
<ul style="list-style-type: none"> <li>• Before disinfecting reusable PPE, it is best practice to clean surfaces and objects that are visibly soiled first. If surfaces are dirty to sight or touch, they should be cleaned using a mild detergent soap and water prior to disinfection.</li> <li>• Although we have PPE shortages, not all PPE is reusable or should be reused. For instance, if some PPE is contaminated with particularly hazardous materials that cannot be safely cleaned and disinfected, follow appropriate disposal procedures.</li> </ul>	<p><b>Soiled or Contaminated</b></p> 



#### Disinfection



We recommend following the manufacturer's guide. If not available or not compatible with SARS-CoV-2, we recommend 1% to 3% hydrogen peroxide (ex. Oxivir disinfectants), 70% ethanol solutions, or chlorine-based solutions (10% bleach solution) followed by water rinse or wipe down for PPE disinfection.

For the full list of EPA-registered disinfectants approved for SARS-CoV-2, visit [List N: Disinfectants for Use Against SARS-CoV-2](#). After disinfection, rinse, wipe down and/or dry PPE, especially eye and face PPE, before donning. Many disinfectants may have potential health hazards and can be incompatible with other disinfectants and materials typically located in research laboratories. For example, disinfectants can remain on surfaces and cause sensitization and irritation if a final rinse or wipe down is not performed. Always check the Safety Data Sheet (SDS) prior to use. If you have any questions, please reach out to EH&S.

If possible, do not share PPE. If it is necessary to share, limit shared PPE to as few people as possible.

- Purchase PPE for individuals (ex. eye protection).
- Assign PPE to designated users (ex. laser goggles).
- Purchase individual boxes of PPE for each user (ex. disposable gloves).

#### Limit Sharing





**PPE Practices**

**PPE in Public Spaces**



Policies pertaining to PPE in public spaces still hold:

- Do not touch door handles with gloves (nitrile, latex, lab gloves).
- Practice the one-glove policy while transporting research materials.
- Do not take PPE home from lab or for personal use outside of the research setting.
- There are jobs and tasks outside of research areas that require PPE to be worn by building/facilities staff. If researchers believe they have a task that requires PPE outside of the lab, please contact your [Lab Safety Advisor \(LSA\)](#). If you have questions or concerns about PPE in public spaces, reach out to EH&S or your LSA.
- Cloth face coverings are not PPE and have state and university guidelines for use in public spaces.

**PPE disposal:**

- The CDC has no special requirements for PPE that may be contaminated with SARS-CoV-2. Dispose of PPE as you normally would in hazardous/chemical, biological or trash waste streams.
- Guidance: [CDC: Clinical Questions about COVID-19: Questions and Answers: Waste Management](#)

**Waste**





**PPE Storage**



- Store PPE in a clean area separate from used/contaminated equipment.
- If you are using dedicated PPE such as safety glasses or boxes of disposable gloves, store in a secure area to prevent communal use.
- Do not store PPE at desks.
  - Face coverings are not PPE and can be stored at desks.
- We recommend storing in paper bags if possible, to allow drying and ventilation after disinfection.
- If using shared PPE equipment and it can be disinfected, disinfect before storage.
- Do not stack PPE, especially lab coats.
- If you are unsure of where to store PPE, coordinate with your PI or LSO.

**PPE Use**

- Wash your hands. This prevents the contamination of the outer part of the glove.
- If you are using shared PPE and it can be disinfected, disinfect before use, even if it was disinfected after prior use.
- If you are using reusable PPE, disinfected or not, wear disposable PPE under it when possible. Example: Don disposable gloves before heat resistant gloves.
- Do not reuse soiled or chemically contaminated PPE that cannot be cleaned and decontaminated.

**Donning for all PPE**







**Single Use PPE**



- Dispose of PPE in appropriate waste stream. Always wash hands after removing PPE.
- If possible, assign a box of disposable gloves to each researcher. Label with designated user(s) names and store near workspace. Do not store gloves at desks.
- Never reuse disposable gloves or single use PPE.
- Wear clean disposable PPE underneath any shared or reusable PPE, where possible.
- Surgical masks and single use respirators:
  - There should already be a disposal or disinfection protocol. If you or your department are considering reuse or extended use of disposable respirators, contact EH&S.
  - Cloth face coverings are not a substitute.

**Disposable Gloves | Disposable Shoe Coverings | Sleeve Covers | Ear Plugs | Surgical Mask | Single Use Respirators**



- We recommend treating these items as potential SARS-CoV-2 carriers.
- Wear disposable PPE under it when possible. Ex. Don disposable gloves before heat resistant gloves.
- Store away from new and disinfected PPE.
- Thoroughly disinfect workspace after work if possible.
- If using shared equipment in other lab spaces, try to bring your own PPE when possible. Ex. Cryogenic fill stations (face shield and cryogenic gauntlets).

**Cryogenic Gauntlets/Gloves | Heat Resistant Gloves | Nomex Lab Coats | Leather Gloves | ESD Gloves (Anti-Static Gloves)**

Most disinfectants will cause deterioration of leather/organic based gloves. In addition, protective coatings can decline with frequent washing.

**PPE That Cannot Be Readily Disinfected**





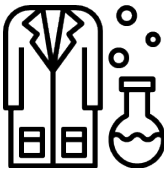

**PPE With UV Or Protective Coatings**



[PPE with UV or Protective Coatings](#)

- Laser safety eyewear should be cleaned with a mild detergent soap and plenty of lukewarm water. Attention should be paid to the parts of the eyewear that directly touch the skin (e.g., bridge of nose, ears).
- Avoid scratching the lenses, especially for eyewear with dielectric coatings.
- AVOID harsh chemicals and other cleaning products as they may damage the lens.



	<ul style="list-style-type: none"> <li>If your lab does not have a sink, please clean the eyewear in a restroom prior to and after use.</li> </ul> <p style="text-align: center;"><b>Laser Safety Glasses   Welding Masks</b></p>
<ul style="list-style-type: none"> <li>Follow manufacturer’s guidance for cleaning and disinfection. If no guidance is available, consider the use of 1% to 3% hydrogen peroxide (ex. Oxivir disinfectants), or chlorine-based solutions (10% bleach) followed by water rinse or wipe down for PPE disinfection. At least 70% ethanol solutions are also recommended but could decrease the lifetime of plastic/rubber-based material.</li> <li>Laundry lab coats frequently (at least once a week). Do not reuse soiled or chemically contaminated lab coats.             <ul style="list-style-type: none"> <li>Reminder that <a href="#">lab coats are required PPE in BL2 labs</a>.</li> </ul> </li> <li>Do not share PPE if possible.</li> <li>Disinfect before and after use.</li> </ul> <p style="text-align: center;"><b>Reusable Gloves   Glove Box Gloves   Hardhats   Earmuffs   Safety Glasses   Face Shields   Lab Coats   Reusable Shoe Covers</b></p> <p>Please note that if the glove box arms extend into walking paths, they could become high contact areas and require more frequent cleaning and/or disinfection.</p>	<p style="text-align: center;"><b>PPE That Can Be Readily Disinfected</b></p> <div style="text-align: center;">      </div>
<p style="text-align: center;"><b>PPE That Is Typically Not Reused</b></p> <div style="text-align: center;">  </div>	<p><a href="#">Contact EH&amp;S</a> before changing any reuse of PPE policies.</p> <ul style="list-style-type: none"> <li>Tyvek suits/jackets/pants</li> <li>Surgical mask and single use respirators             <ul style="list-style-type: none"> <li>If you or your department are considering reuse or extended use masks, contact EH&amp;S.</li> </ul> </li> </ul>



○ Cloth masks are not a substitute.

If required for research, [contact EH&S](#) for fit tests and questions.

- Follow manufacturer’s guidance for cleaning and disinfection. There should already be a disposal or disinfection protocol. If you or your department are considering reuse or extended use of disposable respirators, contact EH&S.
- Cloth face coverings is not a substitute for respiratory PPE.

**PAPR hood | Filtering face piece | Reusable respirators: half mask or full mask**

#### Respiratory PPE



#### Doffing/Removing PPE



- Remove Tyvek suit, lab coat and/or apron if you are wearing one.
- Remove gloves.
- Wash your hand or use hand sanitizer if a sink is not available.
- Remove eye protection.
- If necessary, remove cloth face covering or PPE respiratory protection.
- Don PPE for cleaning and/or disinfection of any reusable PPE.
- Store or dispose of PPE as appropriate.
- Wash hands again as necessary.

### Face Coverings in The Lab Environment



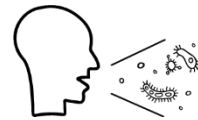
There are a number of state, local, university, and school specific regulations regarding face coverings and masks. Please follow the most stringent guideline for the space you are entering or planning to work.

The guidance below is for cloth face coverings but also has a lot of similarities to other potential face coverings that may be recommended or required such as surgical masks.

The guidance below covers best practices for use and potential storage of coverings and masks. Note that laundering recommendations do not apply to surgical masks and N95-masks are they are designed to be single use PPE.

If you have questions or concerns about the use of PPE serving as face coverings to minimize the spread of SARS-CoV-2, please contact EH&S.

### SARS-CoV-2 Droplet Exposure Minimization



### General Information And Guidance





Cloth face coverings are not PPE. EH&S created a [Masks, Respirators Selection Procurement guide](#) to aid purchasing decisions and a [Cloth Face Coverings Supplemental information document](#) available to better understand fit and efficacy of your cloth face covering.

Face coverings do not provide protection against volatile organic solvents and should not be used for protection where a fume hood or other respiratory protection would otherwise be used.



Guidance for face coverings as recommended by the [CDC](#):

- Fit snugly but comfortably against the side of the face.
- Be secured with ties or ear loops.



	<ul style="list-style-type: none"> <li>• Allow for breathing without restriction.</li> <li>• Can be laundered and machine dried without damage or change to shape.</li> <li>• Include multiple layers of fabric.</li> </ul>
<p><u><a href="#">Face Coverings: General Use</a></u></p> <ul style="list-style-type: none"> <li>• Wash hands for 20 seconds with soap and water every time you put on and take off the face covering. If soap and water are not available, use an alcohol-based hand sanitizer.</li> <li>• Individuals should be careful not to touch their eyes, nose, and mouth when removing the face covering.</li> <li>• Coverings should be changed out/replaced if they become wet or soiled; do not put a used face covering in places where others can touch them or where germs trapped in your face covering can touch other surfaces, such as counter tops. Keep a paper bag with you to store your face covering if you will be taking it off outside the house.</li> <li>• Coverings should be laundered with detergent and machine dried.</li> <li>• We recommend having separate face coverings that are worn while doing lab research, if necessary, and ones you wear during your commute.             <ul style="list-style-type: none"> <li>○ Disposable ear-loop style masks are easily removed. Schools may be providing face coverings.</li> </ul> </li> <li>• If your face covering becomes contaminated with a hazardous material, dispose of the face covering as hazardous waste.</li> </ul>	<p style="text-align: center;"><b>Care and Use</b></p>  



<ul style="list-style-type: none"> <li>We recommend having spare face covering in the event your face covering is soiled or contaminated.</li> </ul>	
<p><b>Removing Face Coverings and Storage</b></p> 	<ul style="list-style-type: none"> <li>Bring in a clean paper bag to store “in-use” face coverings during breaks.</li> <li>When removing the cloth face covering during the day, such as for breaks, remove it using the approved technique: fold the outer sides together so the clean side faces out, and slip into a small, clean paper bag or similar clean bag. When ready to wear again during that same shift, open the face covering and carefully put it on. Next, wash hands, and then put on fresh single-use gloves.</li> <li>Bring a paper bag to put your used or soiled cloth covering(s) in to carry home for laundering and label this bag with your name.</li> <li>These are not PPE; you can store these at your desk in an “in-use” paper bag.</li> <li>We recommend having spare face coverings in the event yours is soiled or contaminated.</li> </ul>
<ul style="list-style-type: none"> <li>Regular glasses are not considered Personal Protective Equipment (PPE).</li> <li>When wearing a face covering, mask or other respiratory protection with prescription glasses, safety glasses, goggles, and/or face shields, fogging might occur. To mitigate this issue, we advise the use of anti-fog safety glasses, anti-fog goggles</li> </ul>	<p><b>Eye Protection in Conjunction with A Cloth Covering, Mask or Other Respirator Protection</b></p> 



and/or antifog spray. Also, soap and water can act to [reduce surface tension on the lenses](#) and serve to minimize fogging.

#### Resources

#### [APIC Do's and Don'ts for Gloves](#)

Below is a list of options available through VWR for fogging prevention:

#### **Anti-Fog Safety Glasses (66025-074)**

- [VWR® Protective Eyewear with Adjustable Temples](#)
- [Blackjack® Clear Anti-Fog Lens, MCR Safety](#)
- These fit over (most) prescription glasses: [Law OTG® Protective Eyewear, Crews](#)
- IN STOCK: [KleenGuard™ Maverick™ Safety Glasses, Kimberly-Clark Professional®](#)

#### **Anti-Fog Goggles**

- [Crews® Stryker Goggles](#)
- #10790-630 IN STOCK: [Uvex Stealth® Goggles, Honeywell Safety](#)

#### **Anti-Fog Spray**

- [BioClean™ Sterile Anti-Fog Spray, Ansell](#)
- Anti-fog sprays: There are several suppliers.

#### **SARS-CoV-2 Disinfectant Safety Information**

*Updated May 2020*

The SARS-CoV-2 pandemic has led to an increased need for disinfection in homes, public areas, and throughout the campus including laboratories. This document provides some general information about EPA-registered disinfectants, such as potential health hazards and personal protective equipment recommendations. As always, we recommend you refer to the chemical safety data sheet and the manufactures warning labels.





Category	Notes	Chemical Disinfectant Chemical/Products	Potential Hazards	Controls
<p><b>Hydrogen peroxide</b></p> <p><b>(Oxidizing Agent)</b></p> <p><b>0.5-10%; 3% is most common</b></p>	<ul style="list-style-type: none"> <li>No toxic residues (degrades to water and oxygen)</li> <li>Extremely stable when properly stored (e.g., in dark containers)</li> <li>Intermediate/High Biological Activity—effective against bacteria, viruses, yeasts, fungi, spores (at higher concentrations/ contact times). NOT prions.</li> </ul>	<ul style="list-style-type: none"> <li>Oxivir Tb &amp;HC</li> <li>Clorox Healthcare HP Cleaner Disinfectant Wipes</li> <li>Accel TB</li> <li>Clorox Commercial Solutions Clorox Hydrogen Peroxide Disinfecting Cleaner</li> </ul>	<ul style="list-style-type: none"> <li>Concentrated peroxide solutions are reactive and explosive.</li> <li>Irritants - may cause respiratory irritation and chemical burns of the skin and eyes when concentrated.</li> </ul>	<ul style="list-style-type: none"> <li>Disposable nitrile gloves</li> <li>Safety glasses or goggles where splash potential exists</li> <li>Long sleeve shirt and long pants</li> <li>Closed toe shoes</li> </ul>



Category	Notes	Chemical Disinfectant Chemical/Products	Potential Hazards	Controls
<b>Alcohols</b>	<ul style="list-style-type: none"><li>• Low contact time (rapid evaporation)</li><li>• Intermediate Biological Activity—effective against bacteria, enveloped viruses, fungi, yeasts. NOT spores, prions</li></ul>	<ul style="list-style-type: none"><li>• <math>\geq 70\%</math> Ethanol</li><li>• Super Sani Cloth Germicidal Wipe (Isopropanol and quaternary ammonium compound)</li><li>• Opti-Cide Surface Wipes (alcohol and quaternary ammonium compound)</li><li>• Lysol Neutra Air<sup>®</sup> 2 in 1</li></ul>	<ul style="list-style-type: none"><li>• Highly flammable and could form explosive vapor/air mixtures.</li><li>• May react violently with strong oxidants.</li><li>• Alcohols may cause dermatitis with frequent skin contact</li><li>• Inhalation of concentrated alcohol vapor may cause irritation of the respiratory tract and effects on the central nervous system.</li></ul>	<ul style="list-style-type: none"><li>• Disposable nitrile gloves</li><li>• Use in well-ventilated areas away from ignition sources</li><li>• Wear long sleeve shirt and pants</li><li>• Closed toe shoes</li></ul>



Category	Notes	Chemical Disinfectant Chemical/Products	Potential Hazards	Controls
<p><b>Chlorine Compounds (Hypochlorites)</b></p> <p><b>Bleach-1:10 dilution= 0.5%</b></p>	<ul style="list-style-type: none"> <li>No toxic residues</li> <li>Unaffected by water hardness,</li> <li>Inexpensive &amp; fast acting</li> <li>Low incidence of serious toxicity</li> <li>Intermediate/High Biological Activity—effective against bacteria, viruses, yeasts, fungi, spores (at higher concentrations/ contact times). NOT prions.</li> </ul>	<ul style="list-style-type: none"> <li>Sodium hypochlorite</li> <li>Clorox Clean-Up Cleaner + Bleach</li> <li>10% Bleach Solution</li> <li>Clorox Toilet Bowl Cleaner with Bleach</li> <li>Chlorine dioxide</li> <li>Sodium dichloroisocyanurate</li> </ul>	<ul style="list-style-type: none"> <li>Mixing hypochlorite with strong acids may result in violent chemical reactions.</li> <li>Reacts explosively with ammonia, amines, or reducing agents.</li> <li>May cause skin irritation. Concentrated hypochlorite solutions can cause chemical burns of the skin.</li> <li>May cause serious eye irritation.</li> <li>Corrosive overtime without proper rinsing</li> <li>Do not mix with ammonia-based cleaners or disinfectants</li> </ul>	<ul style="list-style-type: none"> <li>Disposable nitrile gloves</li> <li>Safety glasses or goggles where splash potential exists</li> </ul>



Category	Notes	Chemical Disinfectant Chemical/Products	Potential Hazards	Controls
<b>Phenols</b>	<ul style="list-style-type: none"><li>• Long contact times needed</li><li>• Low/Intermediate Biological Activity—effective against bacteria and viruses (NOT ALL). Some yeasts and fungi. NOT spores or prions.</li></ul>	<ul style="list-style-type: none"><li>• Thymol</li><li>• Benefect Botanical Daily Cleaner Disinfectant Spray</li></ul>	<ul style="list-style-type: none"><li>• Phenols can cause skin and eye irritation and potentially burns.</li><li>• When phenol compounds are inhaled, ingested, or applied to the skin at high concentrations, the chemicals are harmful to humans.</li><li>• May be corrosive and reacts to metals.</li></ul>	<ul style="list-style-type: none"><li>• Disposable nitrile gloves</li><li>• Safety glasses or goggles where splash potential exists</li><li>• Protective clothing to minimize skin contact</li></ul>



Category	Notes	Chemical Disinfectant Chemical/Products	Potential Hazards	Controls
<b>Quaternary Ammonium Compounds (Quats)</b>	<ul style="list-style-type: none"><li>• Use for non-critical surfaces only</li><li>• DO NOT mix with chlorine compounds (bleach)</li><li>• Low Biological Activity—effective against bacteria, enveloped viruses, yeasts. NOT spores, prions, tuberculoïdal bacteria</li></ul>	<ul style="list-style-type: none"><li>• Lysol® and Clorox® wipes</li><li>• Alkyl dimethyl benzyl ammonium chlorides</li><li>• SC-AHD-256</li><li>• Virex II/256 and II/64</li><li>• Super Sani Cloth Germicidal Wipe</li><li>• Maquot 64</li><li>• CaviCide</li><li>• Kennelsol HC</li></ul>	<ul style="list-style-type: none"><li>• Contact dermatitis</li><li>• May trigger respiratory irritation</li><li>• Eye and skin burns or irritation</li><li>• Oral and gastrointestinal injuries from swallowing solutions</li><li>• Do not mix with bleach-based cleaners or other chlorine solutions</li></ul>	<ul style="list-style-type: none"><li>• Adequate ventilation</li><li>• Disposable nitrile gloves</li><li>• Safety glasses or goggles where splash potential exists</li><li>• Long sleeve shirt and long pants</li><li>• Closed toe shoes</li></ul>

## Notes

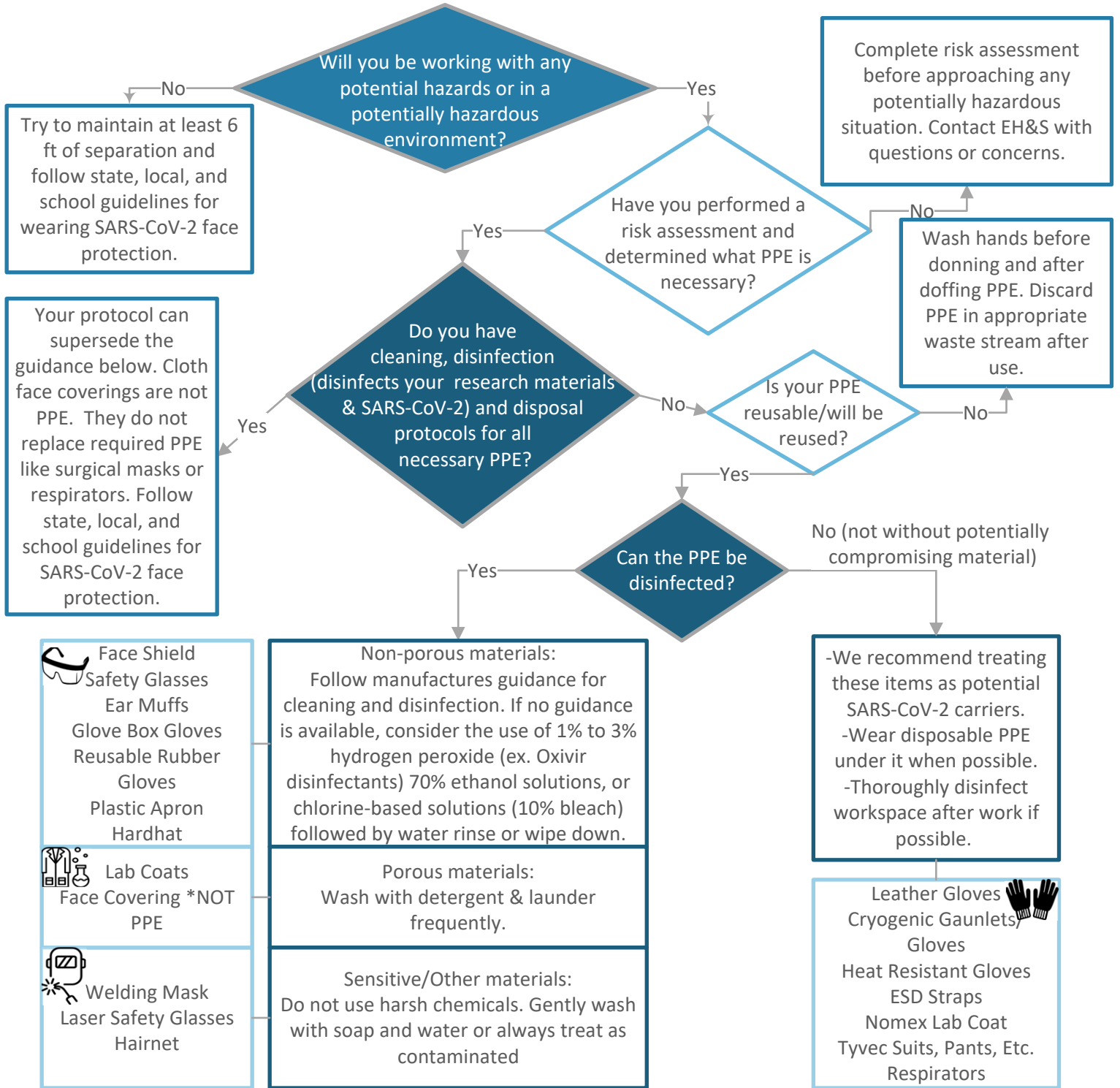
- Always follow the manufacturers product-use instructions to ensure safe application.
- Controls listed are suggestions. Always check the Safety Data Sheet (SDS) prior to use.
- Additional controls and procedures may be necessary. Consult with EH&S if you have questions or concerns.
- Lab coats or aprons may be recommended when using these disinfectants based on quantity, concentration, and if splash potential exists. Contact EH&S with questions.

This list is not exhaustive as there are a large number of disinfectants currently on the market. For the full list of EPA-registered disinfectants for SARS-CoV-2, see the [EPA List N: Disinfectants for Use Against SARS-CoV-2](#).



## Appendix A: SARS-CoV-2 PPE Disinfection Flow Chart

# SARS-CoV-2 PPE Disinfection Flow Chart



- Donning for all PPE:**
- Wash your hands. This prevents the contamination of the outer part of the glove.
  - If you are using shared PPE and it can be disinfected, disinfect before use, even if disinfected after use.
  - If you are using reusable PPE, wear disposable PPE under it when possible. Ex. Don disposable gloves before heat resistant gloves.
  - Do not reuse soiled or chemically contaminated PPE that cannot be cleaned and decontaminated.
  - Follow state, local, and school guidelines for wearing SARS-CoV-2 face protection; fogging of (safety) glasses may occur. Use of anti-fog spray or anti-fog safety glasses are options to mitigate this problem.

- Doffing PPE**
- Remove Tyvek suit, lab coat and/or apron if you are wearing one.
  - Remove gloves.
  - Wash your hand or use hand sanitizer if a sink is not available.
  - Remove eye protection
  - If you need to remove face mask or PPE respiratory protection.
  - Don PPE for cleaning and/or disinfection of any reusable PPE.
  - Store or dispose of PPE as appropriate.
  - Wash hands again as necessary.