

Cleaning SOP for Laboratories During Coronavirus Pandemic

*The purpose of this document is to provide guidance for self-cleaning by researchers of laboratory spaces, including spaces in which a person who may have COVID-19 has been present. This cleaning SOP is designed to disinfect touch surfaces, reduce generation of aerosols and **empower you to safely disinfect your entire laboratory space**. Research laboratories contain sensitive materials and equipment. If you have questions and concerns, please reach out to biosafety@ucmerced.edu.*

Increase Regular Cleaning: Increasing regular lab cleaning regimen can drastically reduce the risk of surface transmission of microorganisms.

Personal Protective Equipment (PPE):

Lab Coat Disposable Gloves Eye Protection [Safety Glasses, etc.]

Clean and disinfect high touch surfaces on a daily basis [Benchtops • Doorknobs/handles & Doorframes • Lights Switch Plates • Phones • Computer Keyboard and Mouse • Tables and Chairs • Railings • Remote Controls • Media/Reagent Bottles • Clean Areas].

Wash areas with soap and water for items that are heavily soiled, and follow with a disinfectant according to the manufacturer's instructions.

Disinfect surfaces or non-porous surfaces, **10% household bleach or alcohol solutions of at least 70%** are known to be effective. Visit this link for proper management of [hazardous materials](#). Allow the disinfectant to sit wet on the surface for the **indicated contact time** (10min for bleach or ethanol), then wipe or air dry. If using bleach to disinfect, a follow up wipe with water is recommended to prevent excessive corrosion from bleach. Be sure to follow the manufacturer's instructions for proper disinfection and safe handling. Use disinfectants in well-ventilated areas. For approved disinfectants effective against coronavirus, please visit: <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

Dispose of cleaning supplies and disposable PPE in red medical waste bin. If you have questions about disposal please reach out to biosafety@ucmerced.edu.

Wash your hands with soap and water for at least 20 seconds.

Disinfection Procedure

Disinfecting touch surfaces is an important step in limiting the spread of the disease. Standard laboratory supplies and disinfectants (such as household bleach) are sufficient for disinfection of spaces in which a person with suspected or confirmed COVID-19 has been present. Due to the sensitive research materials and equipment, the lab will manage the disinfection of the laboratory spaces.

Prior to Disinfection: Allow a **minimum 1 hour isolation time** after the person has exited. **During this time, no personnel should enter the space.** Hang signage (see example below) if necessary and secure

the perimeter to the best of your ability. This isolation will allow any generated droplets/aerosols to settle or be removed from the air. **Your laboratory airflow is designed to help remove airborne contaminants**, and best practice is to allow this system time to work. If the person has not been present in the spaces recently, a wait time is not necessary.



Sample Signage to Isolate Lab Area

Personal Protective Equipment (PPE):

Lab Coat or Disposable Gown

Disposable Gloves

Eye Protection [Safety Glasses, etc.]

Scope of Disinfection: You should disinfect all areas in which the person has been present. This includes **all touched surfaces** in clean areas (marked areas inside labs in which eating and drinking is permitted), and any lab surfaces with which the person had direct contact (lab benches, chairs, chemical cabinets, doorknobs, fume hoods, etc.). It is **not necessary to disinfect floors unless visible or suspected contamination is present** (the person sneezed on the floor, etc.). **Use professional judgement** with regards to disinfecting equipment which may need disinfection based on whether the personnel was wearing PPE (for example, the entire work surface of a biosafety cabinet may not require decontamination, but the side of the glass sash exposed to the person and the first 6 inches of the work surface inside the cabinet may require it). When in doubt, disinfect.

Check for Compatibility: Before selecting a disinfectant, determine what materials or equipment are in the lab that could be incompatible with some disinfectants. For example, bleach solutions may not be compatible with some equipment or may require a secondary wipe-down.

Preparing the Lab: Dispose of any absorbent pads or other disposable porous materials commonly used on the benchtops. All contents of benchtop waste containers should be discarded in the appropriate waste stream. Any cardboard that the person may have contacted should be disposed of as well. No active research should be conducted while the lab is disinfected. A fillable spreadsheet is attached for the labs use. This spreadsheet should be filled out to identify sensitive equipment

Disinfection: After donning your PPE, enter the area to begin disinfection. Use **one** of the following disinfectants:

1. A freshly prepared solution of 10% household bleach.
2. An EPA-certified disinfectant such as a quaternary ammonium [Lysol, RX 44, etc.], hydrogen peroxide [Spore Klenz, etc.] or iodophore-based [Wescodyne, etc.] solution suitable for routine surface disinfection. You may also use wipe-based disinfectants such as Clorox wipes [quaternary ammonium] or Cavicide. A full list of EPA-registered disinfectants can be found [here](#).
3. A solution of 70% ethanol.

Apply the disinfectant to the surface by wiping, spraying, or applying the solution to a paper towel and wiping it onto the surface.

NOTE: If the surface is **visibly contaminated or wet with possible contaminants**, place absorbent material (paper towels, or a disinfectant wipe) directly over the contamination and apply disinfectant. Wipe to remove contamination and dispose of the absorbent material as indicated under **Disposal (below)**, and disinfect the surface again. This method reduces possible aerosol generation during the spraying of surfaces.

If there are potentially **sharp materials which could cut you** present in the contamination, these should be removed using mechanical means (with tongs, forceps, etc.) and placed in a biohazardous sharps container.

The surface must remain wet for the contact time indicated for the disinfectant used. This is variable based on the product, generally from 4 minutes for quaternary ammonium wipes, to 10 minutes for spray compounds. Some Cavicide wipe products have a contact time of 1 min, but most are longer. Always read the label of the product used. **Household bleach and 70% ethanol both require a contact time of 10 minutes.** If the surface dries, reapply the solution. As 70% ethanol is very volatile and dries quickly, you may wish to use it as a secondary cleaner following a 10 min application of 10% bleach. This will remove corrosive residue from the surface.

Disposal: Dispose of contaminated cleaning products (paper towels, wipes, etc.) in a **labeled biohazard bin lined with labeled red biohazard bags** in accordance with campus procedure for biohazardous waste disposal. If your laboratory does not generate biohazardous waste, **indicate this to the Emergency Operations Center when you first report the possible case** of contamination. The EOC will coordinate with EH&S to provide you with an appropriate bin and bags.

Remove PPE: Remove PPE and dispose of disposable PPE in the biohazardous waste bin as you do the contaminated cleaning products. Make certain to safely **doff your PPE without contaminating yourself**.

Gloves: Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove. Hold removed glove in gloved hand. Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove. Discard in designated waste container. Wash your hands in a laboratory sink with soap and water.

Lab Coat/Disposable Gown: Unfasten gown ties or unsnap/unbutton your lab coat, taking care the outside of the coat or sleeves don't contact your body. Pull the gown or coat away from your neck and shoulders, touching the inside of gown or coat only. Turn gown or coat inside out. **Discard**

disposable coats in a biohazardous waste container. If you use a reusable lab coat, use a cotton-polyester standard white coat or barrier lab coat only (DO NOT USE A FLAME-RETARDANT BLUE LAB COAT). If you do not have a white, barrier, or disposable lab coat, reach out to the EH&S.

For reusable lab coats, decontaminate the lab coat using one of the appropriate methods below. If you do not have a secondary lab coat available, a loaner of appropriate size will be provided to you through the PPE office.

1. Place your lab coat (standard white cotton polyester, barrier, or FR blue) in a **clear plastic** autoclave bag (NOT a red bag) or a sterilization sleeve, and autoclave at **121 degrees Celsius, 15 psi, for 30 minutes (gravimetric cycle with 30min steam cycle and 5min drying cycle) or for 4 minutes in a prevacuum sterilizer at 132 degrees Celsius (4 minute exposure, 15 minute exhaust)**. If you do not have access to any autoclave bags or sterilization pouches, wrap the lab coat in aluminum foil, place the lab coat in a tray and add a second tray to the autoclave containing water (not the same tray). Remove the coat and allow it to dry overnight.
 - a. **Do not autoclave your lab coat if it is contaminated with household bleach or other chemicals.** In the case of bleach, allow the bleach to remain on the coat for a minimum of 10min, rinse the contaminated sections and allow to air dry before autoclaving. If your lab coat is grossly contaminated with chemicals, containerize it and submit it as chemical waste. As textiles are susceptible to ignition (can catch fire) or can otherwise be compromised by excessive heat, please err on the side of using shorter drying cycles when autoclaving your coats in gravimetric autoclaves.
2. If you do not have access to an autoclave AND your reusable coat is standard white cotton-polyester, you may soak your lab coat in a **solution of 10% bleach for a minimum of 30min**. Make sure the bleach soaks the coat entirely and all of the coat is immersed. Remove the coat and allow it to dry overnight. If campus laundry services are active, submit the coat in a lab coat envelope for laundering.

Eye Protection: Remove safety glasses, wipe with disinfectant and then wash with soap and water to remove any chemical residue.

WASH HANDS AND WRISTS WITH SOAP AND WATER FOR 20 SECONDS.

References:

Center for Disease Control and Prevention. (2020) *Disinfection and Sterilization*, Retrieved April 2, 2020, [<https://www.cdc.gov/infectioncontrol/guidelines/disinfection/index.html>].

Center for Disease Control and Prevention. (2020) *Steam Sterilization*, Retrieved April 2, 2020, [<https://www.cdc.gov/infectioncontrol/guidelines/disinfection/sterilization/steam.html>].

Medline. (2020) *SURGICAL – Laundering Recommendations*.

UC Davis. (2020) *Personal Protective Equipment (PPE) FAQs*, Retrieved April 2, 2020, [<https://safetyservices.ucdavis.edu/fag/personal-protective-equipment-ppe-faqs>]

California Department of Public Health. (2020) , Retrieved 03/19/2020, [<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Guidance.aspx>]

Cal/OSHA Aerosol Transmissible Diseases Standard (title 8 section 5199)

[\[https://www.dir.ca.gov/title8/5199.html\]](https://www.dir.ca.gov/title8/5199.html)

Cal/OSHA Interim Guidelines for General Industry on 2019 Novel Coronavirus Disease (COVID-19)

[\[https://www.dir.ca.gov/dosh/coronavirus/General-Industry.html\]](https://www.dir.ca.gov/dosh/coronavirus/General-Industry.html)