ENVIRONMENTAL HEALTH & SAFETY

Laboratory Housekeeping: Expectations for Cleaning and Disinfection

All personnel must strive to protect themselves and others from virus transmission in the laboratory (i.e. restricted areas requiring badge access). In addition to standard recommendations to stay home if symptomatic, cover coughs, dispose of paper tissues immediately after use, etc., university community members should:

1. Clean and disinfect hard surfaces of laboratory work area daily
   a. Before and after working with any biological materials, especially in the biological safety cabinet (BSC) and laboratory benches
   b. After any spills

2. Dispose of absorbent pads after one use with biohazardous materials (i.e. human blood/tissue, infectious agents, recombinant nucleic acids, viral vectors, whole animals).
   - Wipe down with disinfectant twice daily commonly touched surfaces, depending upon their use, including but not limited to:
     - Door handles
     - Pipettors
     - Centrifuge controls, lids
     - Sink faucets
     - Phones
     - Microscopes
     - Freezer/refrigerator doors, key pads, locks
     - Shared equipment
     - Shared computer keyboards

3. Facilities Management contractors are responsible in public areas for disinfecting high touch surfaces, such as door handles, elevator buttons, restrooms, water fountains, break rooms/kitchens, etc.

4. Hands must be washed with soap and water for 20 seconds:
   a. Immediately after removal of nitrile gloves, before leaving laboratory area
   b. After touching commonly shared surfaces without gloves

5. Gloves are considered contaminated while being worn, therefore the wearer:
   a. Must not touch their face, nose, eyes with gloved hands
   b. Must not wear gloves into non-laboratory areas such as break rooms, offices, elevators, etc.

6. Hand sanitizers containing at least 60% alcohol can be used as a temporary measure until hands can be washed with soap and water.

7. If someone in a research group or laboratory area has tested positive for the SARS-CoV-2 virus, a more rigorous, extensive cleaning and disinfection may be needed.

8. All of these recommendations are considered “best practices” for research laboratories even when there is not a possible pandemic.
Tips about the most commonly used disinfectants used in laboratories:

1. 70% ethanol:
   a. Acceptable for cleaning dust or residues from hard surfaces
   b. In Colorado’s dry climate, it is not considered to be an effective disinfectant because it so quickly evaporates that it is hard to obtain a ten minute contact time
   c. May be used as a rinse after using an efficacious disinfectant containing bleach or quaternary ammonias
   d. Dispensing bottle should be clearly labeled

2. Bleach: 10% vs 1%
   a. Household bleach (5.25% sodium hypochlorite) starts to deteriorate when the bottle is opened but maintains an acceptable level of active chlorine for one year
   b. 10% dilution should be prepared weekly; 1% dilution should be prepared daily
   c. Both are effective against enveloped viruses
   d. Label bottle with concentration, date it was diluted and preparer’s initials
   e. Should be kept away from heat and sunlight

A complete list of EPA approved disinfectants considered effective against SARS-CoV-2 can be found at [https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2](https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2)

Only a few brands of wipes are approved so far by the EPA. These may not be available through the university’s Marketplace purchasing system.

Take note of a product’s active ingredients. Although “Brand A” may typically be associated with bleach products, it may also market a product containing a quaternary ammonium. Ensure the product being used is efficacious against the potential pathogens with research materials and enveloped viruses being used, and that the appropriate contact time is followed.

A reminder from freshman chemistry: NEVER mix a product containing chlorine with a product containing ammonia. The resulting release of ammonia gas can cause injury.

For questions about choosing a disinfectant or procedures (i.e., decontaminating sensitive electronic equipment), contact Biological Safety, 303-724-0345.

RESOURCES:
Environmental Protection Agency (EPA). Selected EPA-Registered Disinfectants. [https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants](https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants)
Environmental Protection Agency (EPA). Emerging Viral Pathogen Guidance for Antimicrobial Pesticides. [https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2](https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2)