





Risk assessment:














All as in BSL-1
Moderate-risk agents

Biosafety Level 3

All as in BSL-1 and -2

Agents with a potential for respiratory transmission with serious or lethal infections

Work is discouraged at Roosevelt

Lab personnel must have specific training in handling agents and are supervised while conducting experiments

All work done in BSC or other enclosed equipment

Controlled access to lab and special ventilation to prevent accidental release

Lab must have specific design and containment equipment

- Air lock, shower, or changing room required between unrestricted areas and lab

- Surfaces of walls, floors, and ceilings must be water resistant

- Windows are closed and sealed

- Exhaust system provided to prevent release of agents

PPE required and may include respirator, double gloves, gowns, etc. Lab coats are not suitable

Workers must comply with entry and exit procedures

Vacuum lines protected with HEPA filters and liquid traps

Biosafety Levels 4

All as in BSL-1, -2, and -3

Work is performed in a Class III BSC at Roosevelt

Agents with high risk of lethal disease, easily transmitted (aerosol), with little or no treatment options

Class III BSC or full-body, air-supplied positive pressure suit required for working

Controlled access to labs, specialized ventilation, and waste management systems



Aseptic Technique

Method of laboratory work that prevents contamination by (unwanted) microorganisms

Provides barrier between sterile cell cultures and microorganisms in the environment

Varies depending on whether working on the bench or in a BSC

Aseptic Technique

For proper bench-top aseptic technique, watch the following video:

<http://www.youtube.com/watch?v=bRadiLXkqoU>

Lab workers may require in-person training depending on procedures, experience, and agents being used

Instructors **MUST** train their students (students cannot train other students)

In-person training will be provided by instructor or laboratory manager



Basic biological spill kit should contain:

Disinfectant (e.g. bleach 1:10 dilution, diluted quaternary solution, or other suitable disinfectant)

Absorbent material (paper towels, spill pillows, etc.)

Waste container (biohazard bags and sharps containers)

PPE

Mechanical tools (forceps, dustpan and broom)

Biohazardous

BSL-1 spills:

Notify others

Wear PPE

Surround spill with disinfectant

Clean up with paper towels (if large, use spill pillows)

Re-apply disinfectant to the surface and let sit for 10 minutes.
Clean again.

Put contaminated waste in biohazard bags for autoclaving

Wash hands

Notify lab manager to assure proper cleanup

BSL-2 spills:

Evacuate the room and close doors; notify lab manager

Remove any contaminated clothing and decontaminate body surfaces

Allow at least 30 minutes for potential aerosols to be reduced before re-entering

Don protective clothing and respiratory protective equipment

Decontaminate spill with appropriate disinfectant and allow 10 minutes of contact time

Clean spill with paper towels or spill pillows and dispose in biohazard bag

Pick up sharps with forceps or tweezers, never with hands, and dispose of

Biohazardous Spills

Biosafety Cabinet Spill

Keep cabinet running during the cleanup

Remove any contaminated PPE and replace with clean

Apply appropriate disinfectant to the spill (bleach can be used but should be used with caution; it will corrode the stainless steel)

Wipe up spill and dispose of paper towels in biohazard bag

Reapply disinfectant and clean again

If bleach is used, clean the surface of the cabinet with water to remove traces of bleach

Items that must be removed should also be decontaminated before unloading from cabinet

Run UV/germicidal lamp for at least 15 minutes for final decontamination (formaldehyde gas can also be used)



Waste Disposal

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Biohazardous waste

Waste containing infectious or potentially infectious substances (e.g. blood, bacterial cultures, liquid waste from cell culture, etc.)

All waste must be disposed of in bags marked with biohazard symbol; bags can go into labeled, leak-proof containers to await autoclaving

Autoclaved before disposal in regular trash

Autoclave should be checked regularly for proper functioning (reaches temperature and pressure, etc.)

Obtaining Biohazardous Materials

- Lab Manager approval required for new organisms
- Check risk group and recommended biosafety level
- Determine if necessary or if a lower-risk organism can be used instead
- Submit for lab manager approval
 - Will check requirements to determine if Roosevelt has appropriate facilities
 - Currently no facilities for BSL-3
 - Fill out required paperwork in order to obtain organism
- Training with new organism must be conducted by lab manager or instructor

