

Recombinant & Synthetic Nucleic Acid (r-s-DNA) Spill Protocol

Small spills:

Wipe up spill with a disinfectant-soaked paper towel & clean the surface with a suitable disinfectant. Dispose of contaminated paper towels as infectious waste.

Larger spills:

Within a Biological Safety Cabinet (BSC)

- BSC must run during cleanup to contain aerosols & HEPA-filter exhaust air.
 - Don appropriate personal protective gear before initiating cleanup.
 - Initiate clean up as soon as possible using a germicidal disinfectant (phenolic or iodophor). Alcohol is **not** acceptable.
 - If the spill is contained on a bench diaper, remove the contaminated bench diaper & discard as infectious waste.
 - If the spill is on the work area surface, cover spilled material with disinfectant-soaked towels. Allow 20 minutes contact time then remove the contaminated towels & discard as infectious waste.
 - Wipe down the interior of the cabinet & any splatter on items within the cabinet with a disinfectant-soaked towel.
 - Wipe down non-autoclavable materials with disinfectant. Allow 20 minutes of contact time with disinfectant before any items are removed from cabinet.
 - Place items designated as contaminated used sharps in an appropriate infectious waste sharps container using tongs/forceps. Place other contaminated disposable materials used in the cleanup process in an autoclave bag. Process as infectious waste.
 - Place contaminated re-usable items in biohazard bags, autoclavable pans with lids or wrap them in newspaper. Sterilize, preferably by autoclaving, then clean for re-use.
 - If the cabinet has a catch basin beneath the work surface & the spill resulted in liquids flowing into this area, more extensive decontamination is required.
- 1) Ensure the drain valve under the cabinet is closed.
 - 2) Pour disinfectant onto the work surface & through the front and rear grilles into the drain pan. Allow 20-30 minutes contact time.
 - 3) Absorb spilled fluid-disinfectant from work surface with paper towels & discard in biohazard bag.
 - 4) Prepare to empty drain pan. Place disinfectant solution in a collection vessel. Attach flexible tubing to the drain valve. The tube should be of sufficient length to allow the open end to be submerged in the collection vessel to minimize aerosol generation.
 - 5) Open the drain valve & empty the drain pan into the collection vessel containing disinfectant. Flush the drain pan with water & remove the flexible tubing. Manage contaminated materials as if they are infectious.

6) Remove protective clothing used during cleanup & place in a biohazard bag for autoclaving. Wash hands when gloves are removed.

7) Notify Principal Investigator or supervisor and EHRS (215-898-4453). Consult with EHRS to determine whether formaldehyde decontamination of the cabinet and filters is necessary, especially if a high-risk agent or a major spill of a moderate-risk agent occurred.

8) Run BSC at least 10 minutes after cleanup, before resuming activity in the cabinet.

Outside the Cabinet, Inside the Laboratory

- If a spill occurs in a Biosafety Level 2 facility, outside the BSC, notify other individuals in the laboratory to evacuate.
- Exit the laboratory to the hallway, closing the door behind you.
- Remove any contaminated clothing (turn contaminated portion inward) & place it in an autoclave bag.
- Wash all exposed skin.
- Place signs on door(s) to the laboratory warning individuals who may want to enter that a spill occurred & access is denied.
- Allow aerosols to settle for 30 minutes before re-entering the laboratory.
- **Notify EHRS (215-898-4453) before proceeding with cleanup.**
- Assemble supplies (disinfectant, sharps containers, towels, tongs, autoclave bags, etc.) before entering the laboratory.
- Don appropriate personal protective equipment (i.e. disposable gown, protective eyewear, gloves, shoe coverings & respiratory protection [if needed]).
- Clean up spill with a suitable disinfectant as follows:
 - 1) Surround spill area with disinfectant or diking material that is soaked in disinfectant.
 - 2) Place paper towels soaked in a disinfectant over the entire spill area.
 - 3) Allow 20-minute contact time with the disinfectant to ensure adequate germicidal action.
 - 4) Wipe down non-autoclavable materials with germicidal disinfectant.
 - 5) Place items designated as contaminated used sharps in an appropriate infectious waste sharps container. Place other disposable materials used in the cleanup process in an autoclave bag. Process as infectious waste.
 - 6) Place contaminated re-usable items in biohazard bags or autoclavable pans with lids. Sterilize, preferably by autoclaving, then clean for re-use. Remove protective clothing used during cleanup then place in a biohazard bag for autoclaving.

- Wash hands when gloves are removed.
- Notify Principal Investigator or supervisor & EHRS (215-898-4453)

Inside a Centrifuge

*The potential for multiple infections from a single centrifuge accident is great. Aerosols are created when fluid escapes from the rotor or cup while the centrifuge is operating at high speed. **All opening of centrifuges must be performed slowly.***

Unsealed buckets:

- If a centrifuge tube breaks while the centrifuge is running, turn off motor. Allow the machine to be at rest for 30 minutes before opening. If breakage is discovered after the machine has stopped, re-close the lid immediately & allow the unit to be at rest for 30 minutes.
- Unplug centrifuge before initiating clean up.
- Don strong, thick rubber gloves & other PPE before proceeding with clean up.
- Flood centrifuge bowl with a germicidal disinfectant. Place paper towels soaked in a disinfectant over the entire spill area. Allow 20 minutes contact time.
- Use mechanical means (such as forceps) to remove broken tubes & glass fragments. Place them in a sharps container for autoclaving & disposal as infectious waste.
- Remove buckets, trunnions & rotor then place in disinfectant for 20 minutes or autoclave.
- Unbroken, capped tubes may be placed in disinfectant & recovered after 20 minutes contact time or autoclaved.
- Use mechanical means to remove remaining disinfectant soaked materials from centrifuge bowl & discard as infectious waste.
- Place paper towels soaked in a disinfectant in the centrifuge bowl & allow it to soak overnight, wipe down again with disinfectant, wash with water & dry. Discard disinfectant soaked materials as infectious waste.
- Remove protective clothing used during cleanup & place in a biohazard bag for autoclaving. Wash hands whenever gloves are removed.
- Notify Principal Investigator or supervisor & EHRS (215-898-4453).

Sealed buckets (safety cups):

- If breakage is suspected, remove the sealed bucket to a biological safety cabinet before opening.
- If breakage occurred, replace the cap on the safety cup loosely and autoclave.
- Notify Principal Investigator or supervisor & EHRS (215-898-4453).