

Decontamination Guidelines

Steps for a successful decontamination

When going through decommissioning of laboratory equipment and instrumentation, it is important to ensure cleaning procedures are followed to ensure any hazardous materials are removed free and clear from assets prior to disposition, storage or relocation. The following are general guidelines to follow when cleaning certain categories of equipment and instruments.

All equipment and instruments must be appropriately cleansed of all evident residues and caked material. It is required that all equipment and instruments are wiped down with isopropyl alcohol solution or properly cleaned with soap and water. Visible examinations should be demonstrated to check for spill indication or residue.

Possible hazard concerns must be addressed regarding materials currently or previously used or stored with used/contaminated equipment or instruments. These potential hazards include but are not limited to: **Chemical, Radioactive, and Infectious Biohazard** contaminations.

In the case of a potential **hazardous chemical contamination**, the user must commence the appropriate sanitization process for the material(s) present. It is essential for laboratory personnel to properly decontaminate their laboratory materials and equipment from hazardous chemicals (i.e. flammable items, corrosive supplies, reactive agents and toxic substances) prior to permitting the transportation of equipment from the moving contractor. If any equipment pieces or instruments have noticeable chemical contamination that presents a hazard, the equipment needs to be properly cleaned and disinfected with isopropyl alcohol solution or soap and water by the customer or supplier. It is important to examine each laboratory instrument and/or piece of equipment that carried chemical samples to ensure any/all residue or debris is cleaned and properly removed.

For equipment and instruments used in conjunction with or in contact with **radioactive materials**, ensure that no radioactivity is identified with surveying equipment and/or accompanying swipe tests.

If **infectious or biohazardous** materials were used or pose a potential threat, disinfect all surfaces with the proper material-specific disinfectants.

Once all hazards and contaminants have been properly sterilized and removed, take down all hazard warning labels and signage.

EQUIPMENT CHECKLIST

- Automated Liquid Handling Systems.** These units may contain toxic materials that were involved in drug screening and other processes. All surfaces must be wiped down and properly cleaned. Drain any and all liquids from the system and rinse the lines with extensive amounts of deionized (DI) water.
- Balances or Scales.** Wipe down all units to remove any residual chemical contaminants from both the interior and exterior of the balance or scale.
- Biosafety Cabinets.** Remove any tubes and/or glassware connected to the hood. Clean and wipe down the workspace and walls with isopropyl alcohol solution or soap and water. Ensure the biosafety cabinet is disinfected appropriately with paraformaldehyde or a similar agent.
- Centrifuges.** Examine the centrifuge tubes for water or other leftover samples and ensure they have been properly removed and cleaned from the rotor system. Equipment used with infectious materials, radioactive isotopes or other hazardous chemicals must be decontaminated as necessary.
- Chemical/Fume Hoods.** Properly disinfect and decontaminate the cabinets and workspace of any/all leftover spills or residues. All chemical containers in chemical/fume hoods must be taken out prior to moving the equipment as well.

- Chemical Storage Cabinets.** Remove all chemical containers and properly disinfect the storage cabinets from spills and other residues. All chemical containers from flammable and/or corrosive cabinets must be removed prior to moving the cabinet.
- Colorimeters.** Properly dispose and remove possible cuvetts holding liquids and other specimens.
- Desiccators.** Discard all potential drying agents (i.e. Drierite, NaOH, phosphorus pentoxide) into the proper waste container.
- Gas Chromatographs (GC).** Units with an electron capture detector contain a radioactive source. Follow the proper guidelines for handling and disinfecting radioactive materials and items.
- Heating Blocks.** Remove all samples and mercury thermometers. Decontaminate the heating block if necessary.
- High Performance Liquid Chromatography (HPLC).** These units may have containers, solvent lines and columns that possibly contain organic solvents. Drain each column and waste line into the appropriate waste container and properly wash the system and columns thoroughly with deionized (DI) water.
- Incubators.** Remove any leftover samples and drain the water from the jacket and pan(s). Remove all mercury thermometers and wipe down any and all used laboratory equipment with the proper disinfectant or a specialized decontamination formula with paraformaldehyde. Hazardous substances and radioactive isotopes must be properly disinfected by the user(s).
- Ovens.** Remove all mercury thermometers and/or containers holding specimens or other liquids. For older models, inspect the lining of the oven for the presence of a possible inhalation hazard from asbestos.
- Photo-Processing Equipment.** Properly drain the three storage tanks holding the caustic developer, acidic photographic fixer and rinse water into the appropriate chemical waste containers, along with the supply and drain hoses prior to moving the equipment.
- Refrigerators/Freezers.** Remove all items, including mercury thermometers, chemical indicators and radioactive isotopes. Dispose of any frozen tissues or samples through incineration, autoclave and/or pick up by an eligible biohazard waste merchant. If there is buildup of ice in the unit(s), properly defrost the freezer or refrigerator. If any equipment held radioactive isotopes, infectious materials or toxic chemicals, ensure the equipment is decontaminated appropriately. Please follow radiation decontamination guidelines for assessing refrigerators/freezers that held radioactive isotopes. Prior to being removed, the refrigerator/freezer unit(s) must be completely vacant.
- Silver Recovery Cartridges.** These cartridges are connected to photo-processing units and contain slightly acidic photographic fixers and silver salts. The silver recovery cartridge must be properly disposed and recycled through the supplier.
- Spectrophotometers.** Remove all possible automatic sample feeders holding sample containers or standards. Flush all lines with deionized (DI) water as needed.
- Tissue Dehydrating Units.** Remove and drain all ethanol and xylene from the storage tanks. Properly dispose of the solvents and follow the suitable health and safety guidelines for handling chemical waste.
- Vacuum Pumps.** Vacuum pumps that contain vacuum pump oil must be drained into an appropriate waste container; these units cannot be shipped with oil in the pump.
- Water Baths.** Drain all water from the bath and remove any leftover samples or mercury thermometers appropriately.
- Water Purification Systems.** Remove all free standing water from purification cartridges prior to moving the unit.

The above document is strictly a guideline and does not include all potential hazards in this environment. It is the responsibility of the company or equipment owner to ensure all equipment is decontaminated and handled as appropriate.