

Large Laboratory Equipment Decontamination Standard Operating Procedure

Protocol

- Identify contamination: What material has this equipment been used with:

Chemical: (Contact [EH&S lab safety](#) for assistance)

Radiological: (Contact [EH&S Radiation Safety](#) for assistance)

[NOTE: Perchloric acid can build up in equipment and generate shock sensitive metal perchlorates. If perchloric acid contamination is possible, contact [EH&S lab Safety](#).]

- Identify appropriate cleaning/neutralizing/sterilizing agents for the identified contaminants.
- De-energize system (electrical, mechanical) using appropriate procedures. Refer to manufacturer's instructions as needed. Use [lock-out/tag-out protocols](#) if the decontamination takes multiple days or if the equipment will be otherwise unattended for a period of time.
- Drain fluids, if necessary, using appropriate procedures (pump/pneumatic oils, refrigerant). Refer to manufacturer's instructions as needed.
- Confirm that any storage compartments in the equipment are empty.
- Cleaning Procedure:
 - Avoid dry brushing, wiping, blowing with compressed air, or vacuuming as this can aerosolize contaminants and create a significant respiratory hazard.
 - Moisten a paper towel with the appropriate cleaning agent, and wipe all surfaces gently, to avoid kicking up particulate matter. Progress from less dirty areas to more dirty areas. Dispose of soiled towels in a solid waste bag.
 - A second pass with the moistened towels may be necessary to decontaminate some surfaces. As the first pass will have removed most loose powder, a more aggressive scrubbing is now possible.

- If removing radiological contamination, contact the [Radiation Safety](#) group at Environmental Health & Safety to confirm successful decontamination.
- Remove any chemical or radiological warning labels or signage.
- If the equipment is to be disposed of, relocated, repaired or put into storage, please fill out the attached **Laboratory Equipment Decontamination Form**.

Personal Protective Equipment

- **Respiratory Protection**

As large equipment is often too large to move into a fume hood or other local exhaust device, the inhalation of dusts and fumes is of primary concern. All respiratory protection must be obtained through the campus [Respiratory Protection Program](#). Please contact this group to get advice on and access to the appropriate equipment.

- **Eye Protection**

At a minimum, ANSI compliant safety glasses with side shields must be worn. Chemical splash goggles should be worn if working with larger quantities of liquid, or if a splash risk is present. If the cleaning agent or the contaminants are skin-contact hazards, a face shield should be worn.

- **Skin and body protection**

A well-fitted chemically resistant lab coat must be worn, along with long pants and closed-toe shoes. A flame-resistant lab coat is required when working with flammable or pyrophoric liquids.

A chemical resistant apron should be worn when using larger volumes of liquid, or if a splash risk is present.

- **Hand protection**

At minimum, disposable nitrile gloves must be worn. Consult the manufacturer's glove compatibility chart to ensure that the glove you plan on using are compatible with the cleaning agents and the contaminants.

Additional personal protective equipment may be required if the specific procedure or contaminants present additional risk. It is the PI/Supervisor's responsibility to ensure that any additional PPE requirements are identified and communicated to researchers. Contact [EH&S for consultation](#).

Waste Disposal

General Guidelines:

- All chemically contaminated solids (e.g. wipes, paper towels, etc.) should be bagged, labeled with the appropriate hazards and disposed of as solid hazardous waste through the [EH&S hazardous Waste Program](#).
- All liquid chemical waste should be stored in a compatible sealable container, labeled with the appropriate hazards and disposed of as liquid hazardous waste through the [EH&S hazardous Waste Program](#).
- Radiologically contaminated waste should be treated and/or disposed of via the requirements of the [Radiation Safety](#) group.



Laboratory Equipment Decontamination Form

This equipment is being decontaminated for: Disposal Relocation Repair Storage

Type of Equipment/Model: _____ Serial #: _____

Current location (building/room): _____

Department: _____ Owner: _____ Phone: _____

• **Stored Energy** (e.g. electrical, pneumatic) discharged or de-pressurized NA

• **Fluids** drained and appropriately captured or disposed of (e.g. pump oil NA
refrigerant).

• **Radioactive Material** used in the equipment NA

- Fully monitored for radioactive materials, has been decontaminated, and is not radioactive.
- Radiation hazard label removed.
- EH&S Radiation Safety Officer has cleared the equipment

Signature: _____ Name: _____ Date: _____

• **Hazardous Chemicals** used in the equipment NA

- Removed, cleaned and/or neutralized with appropriate cleaning agent
- Chemical warning labels removed or defaced

I certify that, to the best of my knowledge, the equipment is free of hazardous materials or hazards, including those noted above.

Signature: _____ Name: _____ Date: _____

Comments: