

**University of Washington
Environmental Health and Safety**

**Safe Procedures for
Servicing and Disposal of Laboratory Equipment**

What is the problem?

1. Lab equipment can be contaminated

Laboratory equipment can potentially be contaminated with biological material, chemicals or radioisotopes. The equipment must be cleaned/decontaminated to protect the worker servicing the equipment, the environment or those purchasing surplused equipment. Examples of equipment which must be decontaminated to assure the removal of hazardous materials prior to servicing or disposal include:

Centrifuges	Incubators	Cryostats	Fume Hoods ⁺
Ovens	Refrigerators	Freezers	Biological Safety Cabinets
Sinks	Tanks*	Warm Rooms	Walk-in Refrigeration Units

Other storage cabinets, lockers, bins used to store hazardous materials

- * potential confined space
- refer to "Safe Procedures for Fume Hood maintenance and Repair" for additional information on fumehoods.

The exact decontamination procedure will be dependent upon equipment use.

2. Lab equipment can contain hazardous materials

Some laboratory equipment can contain materials which present hazards to repair personnel and/or the environment. Examples include fluorescent light ballast which may contain PCB's or thermometers which contain mercury.

How to prevent exposure?

1. Lab personnel responsible to decontaminate equipment

It is the laboratory's responsibility to assure that the equipment is cleaned and that the non-laboratory staff are informed of the potential hazards present. Environmental Health and Safety has prepared procedures for laboratory employees titled "Preparing Laboratory Equipment for Service or Disposal."

2. Follow the Safety Hazards Review Procedures

During the scheduling of work, follow the procedures in Facilities Services *Safety Hazard Review*. Verify that laboratory personnel are familiar with their requirement to properly decontaminate their equipment and post the proper form. If they are not familiar with the decontamination requirements give them a copy of the procedures "Preparing Laboratory Equipment for Service or Disposal with the form UoW 1803, *Notice of Laboratory Equipment Decontamination*. (Attached)

3. Before work begins check for the required University form

Make sure that the *Notice of Laboratory Equipment Decontamination* form, UoW 1803, is completed and attached to the equipment prior to beginning repairs or moving the equipment.

Need More Information?

Contact Environmental Health and Safety:	Evaluation of Worksites	543-7388
Biosafety/Environmental Health	543-9510	Chemical Use/Hazard Communication 543-0467
Radiation Safety	543-6328	Chemical Waste Disposal 685-2848

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Preparing Lab Equipment for Service or Disposal

Laboratory equipment can potentially be contaminated with biological material, chemicals or radioisotopes. The equipment must be cleaned/decontaminated to protect workers servicing the equipment, the environment or the public purchasing surplus equipment. Examples of equipment which must be decontaminated to assure the removal of hazardous materials prior to servicing or disposal include:

Centrifuges	Incubators	Fume Hoods
Cryostats	Ovens	Refrigerators
Freezers	Sinks	Warm Rooms*
Tanks*		
Biological Safety Cabinets		
Walk-in Refrigeration Units*		
Other storage cabinets, lockers, bins used to store hazardous materials		

* potential confined space

The exact decontamination procedure will be dependent upon equipment use.

The laboratory is responsible for assuring equipment is decontaminated before services or disposal.

Some laboratory equipment can contain materials which present hazards to repair personnel and/or the environment. Examples include fluorescent light ballast which may contain PCB's or thermometers which contain mercury. These items may have to be disposed of as chemical waste.

It is the laboratory's responsibility to assure that the equipment is cleaned and that the non-laboratory staff are informed of the potential hazards present. UoW Form 1803, *Notice of Laboratory Equipment Decontamination* is to be attached to the decontaminated equipment.

Beginning September 1, 1996, Physical Plant maintenance personnel will not service laboratory equipment unless a completed Notice of Laboratory Equipment Decontamination form (UoW Form 1803) is attached to the equipment.

Always use appropriate personal protective equipment (PPE) when working in the laboratory and make sure that non-laboratory personnel use appropriate PPE when working in your laboratory. Remember to prepare a working area which is clean, free of hazards, with enough space and easy access around equipment for non-laboratory personnel who must enter the lab to work on or remove equipment. Mop the floors with detergent cleaner if workers have to crawl on the floor. Remove hazardous items stored near, on or under the equipment so workers have access.

Equipment Used to Process or Store Radioisotopes

A thorough radiation survey of all accessible surfaces must be performed with an appropriate instrument. If radioactive contamination is detected, the equipment must be cleaned with small amounts of warm detergent water to avoid splash. Blot dry with paper towels. Commercial radiation decontamination solutions containing chelating agents may be helpful. Resurvey to assure contamination has been removed to less than 100 counts per minute per 100 cm². If contamination persists or you have other questions, contact the Radiation Safety Section of EH&S at 543-6328.

Equipment Used to Process or Store Chemicals

Safely remove, drain, or discharge chemicals from the equipment. Collect the material for reuse or chemical waste pick up by EH&S. If applicable, use an inert gas or liquid to purge, rinse or flush out residue chemical. Check with the Chemical Waste Section of EH&S at 685-2849 regarding appropriate disposal of rinsate. Rinsates such as those containing alcohol or

other solvents, those used to clean a "p listed" chemical usually require disposal as a chemical waste. Refer to the Chemical Waste Section of the Laboratory Safety Manual for a list of "p listed" chemicals.

Refrigerators, ovens and other storage equipment with non-permeable surfaces can be decontaminated by scrubbing with warm soapy water. If you have questions, contact the Chemical Safety Section of EH&S at 543-0467 for more specific information.

Fume Hood. When maintenance personnel must enter the inside of a fume hood the user must remove all containers and thoroughly wash the interior surfaces with warm, soapy water.

Equipment Used to Process or Store Biological Material

Remove biological material from the equipment. Clean the equipment with warm, soapy water and scrub as necessary. Sanitize with a 1:10 bleach solution. After 10 minutes contact time, rinse metal surfaces as bleach is corrosive.

Contact Biosafety/Environmental Health Section of EH&S to decontaminate biological safety cabinets.

If you have questions, contact the Biosafety/Environmental Health Section of EH&S at 543-9510.

Miscellaneous Laboratory Equipment

- Contact the EH&S Radiation Safety Section prior to servicing or removing equipment containing sealed radiation sources (gas chromatographs, liquid scintillation counters, etc.), x-ray equipment, lasers, or equipment producing non-ionizing radiation (UV radiation).

- Contact the EH&S Chemical Waste Section prior to servicing or removing equipment/instruments containing mercury (thermometers, baumanometer [blood pressure devices], hygrometers, etc.), gas cylinders, or pressurized containers and vessels.
- Contact the EH&S Biosafety/Environmental Health Section prior to servicing or removing equipment containing capacitors, transformers containing PCB's, or fluorescent light ballasts.
- Contact the EH&S Occupational Health and Safety Section prior to service on or removal of equipment containing asbestos. Fume hood liners, ovens and older counter tops could contain asbestos.
- Contact the EH&S Occupational Health and Safety Section prior to sanitizing large tanks, walk-in refrigeration/freezer units or warm rooms which have failed, as these units can potentially be confined spaces.

UoW Form 1803, *Notice of Laboratory Equipment Decontamination*

Clean and decontaminate the equipment as recommended. Attach the *Notice of Laboratory Equipment Decontamination* (copy attached) to the equipment which will be serviced or surplus.

Resources - For more information contact Environmental Health and Safety at the numbers listed below. UoW Form 1803 is available from the Physical Plant order desk, from EH&S, and will be included in Appendix E, Forms & Checklists in the upcoming revision of the Laboratory Safety Manual.

EH&S Lab Safety Update is published by the Environmental Health and Safety Department to advise on accident prevention and health concerns, to answer frequently asked questions, and to offer updates on regulatory and policy changes. *EH&S Lab Safety Update* and a companion newsletter *EH&S Health and Safety Update* are published bimonthly. Questions on newsletter content and distribution or ideas for articles should be communicated to John Eriksen, Box 354400, 543-7201, or jeriksen@u.washington.edu.

EH&S Phone Numbers:

Information	3-7262
Accident Reporting	3-7388
Biosafety	3-9510
Chemical Safety	3-0467
Chemical Waste Pick-Up	5-2848

Fire Safety	3-0465
Occupational Health	3-7225
Radiation Safety	3-0463
Sanitation	3-9510
Training	3-7201
Worksite Safety	3-7388

Environmental Health and Safety, Box 354400