



# Science and Academic Building Move Manual 2019

Campus Safety  
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# LABORATORY CLOSEOUT STANDARD

## PURPOSE

To provide a systematic process for vacating laboratory areas that ensures hazardous materials, wastes, supplies, furniture and equipment are properly disposed of or transferred and laboratories are left in a safe condition for re-occupancy or renovation.

## SCOPE

The Laboratory Closeout Standard and related Procedure apply to individuals leaving the University or moving to a different laboratory within the University. This also applies to support areas such as shared and/or common use labs, storage rooms, freezers, cold rooms, chemical storage rooms, greenhouses, field storage locations, etc.

A successful laboratory closeout requires cooperation and effective communication between various stakeholders, including laboratory personnel, Facilities and Campus Safety. This manual has been revised to include specific requirements for moving laboratories to the Science & Academic Building (SAB). Additional procedures may be need to be implemented during the closeout.

## RESPONSIBILITIES

### **Department Heads**

- Ensure that the Laboratory Closeout Procedure is implemented as required in their areas.
- Sign and date the Laboratory Closeout form once all the required actions have been completed.
- Retain the original copy of the completed Laboratory Closeout form for vacated area(s).

### **Principal Investigators (PI) / Lab Supervisor**

- Complete the required actions of the Laboratory Closeout Standard and Procedure in a timely manner. This must be initiated at least 4-6 weeks prior to vacating the laboratory by notifying Campus Safety - Safety Services (safety.services@uleth.ca ).
- Ensure that all transfers/disposals of equipment and hazardous materials are documented and inventory records are updated (i.e. retain all documentation for transfers/disposals with the Laboratory Closeout documentation.) Sign and date the Laboratory Closeout Form once all the required actions have been completed.
- Submit the completed Laboratory Closeout Form to the Department head for signature(s).
- Arrange for final inspection of the lab by Safety Services.
- Retain a copy of the completed Lab Closeout Form for vacated area(s).

### **Destination Project Office and SAB Move Team**

- Collaborate with appropriate University departments and affected staff to coordinate the safe movement/transport of all laboratory materials identified for relocation to the SAB. Provide materials, training and appropriate resources to affected staff for packing laboratory items and equipment.

### **Campus Safety – Safety Services**

- Review the Lab Closeout requirements specific to the laboratory area with the PI/Supervisor.
- Perform the final inspection of the laboratory in a timely manner after being notified by PI/Supervisor of the completion of all sections and signatures on the Laboratory Closeout Form.
- Sign and date the Laboratory Closeout Form once all vacated area(s) have been cleared.
- Retain a copy of the completed Lab Closeout form and accompanying documentation.

The **Laboratory Closeout Procedure Form** (Appendix F) outlines the step-by-step process for completing a lab closeout.

Contact [Safety Services](#) for advice and assistance at least 4-6 weeks **prior to initiating the lab closeout.**

### RELATED DOCUMENTS

Clearance to Work in Laboratories Procedures

Laboratory Closeout Procedure & Guidelines (included in this document, “SAB Move Manual 2019”)

Safe Transportation of Hazardous Materials Procedure

Equipment Release Procedure and Form

Hazardous Waste Management Procedure

Lab Chemical Safety and Procedures Manual

Financial Services – Asset Management Policy and Equipment Declaration Form

To access all related documents please go to **Safety Services, Laboratory Safety**  
<http://www.uleth.ca/risk-and-safety-services/laboratory-safety>

# LABORATORY CLOSEOUT GUIDELINES

## PURPOSE

This document provides information and guidance for conducting a laboratory closeout to ensure laboratory spaces and support areas are left in safe condition for re-occupancy or renovation.

The Laboratory Closeout Standard defines responsibilities of personnel when a laboratory space is to be vacated. The Laboratory Closeout Procedure Form outlines the step-by-step process for completing a lab closeout.

## GUIDELINE

Information for specific University requirements can be found in the following documents and procedure manuals:

- Laboratory Chemical Safety and Procedures Manual
- Radiation Safety and Procedures Manual
- Biosafety Code of Practice
- X-ray Safety Manual
- Laser Safety Manual
- Safe Transport of Hazardous Materials Procedure
- Equipment Release Procedure
- Clearance to Work in Laboratories Procedure

The following supplementary information is provided to assist with a successful laboratory closeout.

### 1. Clearance to Work in Laboratories

- Laboratories are complex and challenging to move. There will be times that non-lab workers (i.e. facilities staff, contractors, external technicians and the move team) will need to enter the laboratory before a complete lab close-out has been conducted.
- When it is necessary for non-lab workers to enter a laboratory, prior to close-out, a **Clearance to Work in Laboratories** (Appendix: E) form **must be completed by the Person in Charge of the laboratory and posted** on the entrance of the lab to indicate to non-lab workers that the area that they will be entering and working in is free of hazards.
- **Note: In the new lab spaces Clearance to Work in Laboratories forms must be completed if non-lab workers are required to perform work activities in the lab space.**
- If you need assistance with a Clearance to Work in Laboratories form please contact [safety.services@uleth.ca](mailto:safety.services@uleth.ca).

## 2. Preparation:

All hazardous materials and equipment will need to be identified and accounted for. Identify all items that will be:

- Moved
- Disposed
- Surplus
- Transferred to another user within the University
- Transferred to another user/location outside the University

**Note:** Ensure that additional materials and equipment acquired or created by the research group in alternate storage locations are included in the inventories (e.g. chemical storage rooms, shared freezers and cold rooms, common use labs, greenhouses, field storage locations, etc.)

Contact [Safety Services](#) for advice and assistance at least 4-6 weeks prior to initiating the lab closeout.

## 3. Moving of Hazardous Materials

### **Read Safety Procedure: Safe Transportation of Hazardous Materials Procedure**

**Hazardous materials inventories must be reconciled prior to move.** All containers must be in good condition, sealed and have appropriate WHMIS labels applied and CHEMATIX inventory barcodes applied.

Hazardous materials may be transferred to the new lab location (or another research group) within the University as follows:

- **Chemicals:** inventories of chemicals must be transferred to the new lab location (and storage units) using CHEMATIX. Chemicals to be disposed as waste must be identified in the Waste Disposal module of CHEMATIX. Unwanted chemicals can be identified as "Surplus" or transferred to another user in CHEMATIX.
- **Waste Material:** No waste material will be moved into the SAB from existing labs. Dispose of waste material following the routine lab waste procedures.
- **Compressed Gas cylinders:** inventories must also be reconciled in CHEMATIX, including disposals and transfers to other users. Refer to the Lab Chemical Safety Manual for

proper storage requirements. Materials Management must also be notified of any inventory changes for reconciliation of rental accounts.

- **Biological Materials:** (inventories must be transferred using BIOLOGOSTIX when available). Relocation and transfer of RG2 materials must have prior approval by the Biosafety Officer to ensure compliance with regulatory requirements. Refer to the Biosafety Code of Practice.
- **Radioactive Materials:** (inventories must be transferred using RADIOLOGISTIX when available). Relocation and transfer of radioactive materials must have prior approval by the Radiation Safety Officer to ensure compliance with regulatory requirements. Refer to the Radiation Safety and Procedures Manual.

For hazardous materials transfers/disposals that cannot be documented in CHEMATIX:

- Create a “Hazardous Materials Transfer List” in an Excel spreadsheet or complete a “Hazardous Waste Disposal Form”.
- Request review and advice from Safety Services
- Request approval from the appropriate Faculty Representative

#### 4. Equipment

Equipment may be moved to a new lab location or transferred to other research groups within the University. Equipment may also be disposed or moved to a researcher’s new lab at a different institution.

**If disposing of equipment, transferring equipment to another UofL researcher, or moving equipment to** another institution, complete an “**Equipment Declaration Form**” (available from Financial Services).

If the equipment contains or has been in contact with hazardous materials it **must be decontaminated** and an “**Equipment Release Form**” must be completed and submitted to [Safety Services](#) before the equipment is removed from the lab.

Some equipment may contain hazardous materials that are intrinsic to the item itself (e.g. lead shielding; mercury switches). In these cases, the hazardous materials may need to be removed prior to transfer, disposal or surplus.



**Note:**

Relocation of certain types of equipment may be subject to **weight loading restrictions**. **Utility requirements** (electricity, water, natural gas, etc.) must also be considered prior to relocation equipment. **Review and approval by Facilities may be required**.

**Financial Services may have asset tracking and inventory requirements** that must be adhered to. Contact Financial Services for further information.

Some equipment may contain the following which must be identified prior to disposal/surplus:

- Asbestos Containing Material
- Mercury
- Lead
- Fuel/Oil/Lubricant
- Polychlorinated Biphenyls
- Others, such as sealed radioactive sources (e.g. Liquid Scintillation Counters, Gas Chromatograph Electron Capture Detectors)

**These hazardous materials may need to be removed prior to disposal/surplus and may also need to be accounted for on regulatory reporting inventories maintained by Safety Services. Completion of the Equipment Release Form is also required.**

#### 4.1 Regulated Equipment

**Contact [Safety Services](#) prior to moving or disposing regulated equipment.**

**Please read *Campus Safety Moving Regulated Material and Equipment* (Appendix D)**

Safety Services maintains inventories of certain types of equipment for regulatory reporting and certifications. These include the following:

- Biosafety Cabinets
- Autoclaves
- Designated Radiation Equipment (e.g. Class 3B and Class 4 Lasers; X-Ray Equipment)
- Radiation Devices (e.g. Liquid Scintillation Counters, Electron Capture Detectors)
- Geiger Counters/Detectors used for radioactive material contamination survey.

#### 4.1.1.1 Biosafety Cabinets

- Biological safety cabinets (BSC) must be emptied of all material and equipment.
- All equipment and surfaces of the BSC must be surface disinfected with appropriate disinfectant depending on BSC use.
- When cleaned adhere a green clean sticker, initialed and dated indicating to the movers the item is hazard free and able to be decontaminated by certified technician.
- BSC may require decontamination by an accredited contractor before being moved.
- The Biosafety Officer will conduct review of the BSC hazard use; and in consultation with accredited contractor will determine the appropriate decontamination process.
- The BSC must also be recertified at the new location before it can be used to ensure that it is operating within the certification requirements of NSF/ANSI 49 Standard.

Safety Services maintains an inventory of all BSCs and must be advised of relocations/disposals. Science Facilities are responsible for coordinating the move of the BSC into the SAB and will supply Safety Services with the Master Equipment Schedule.

#### 4.1.1.2 Liquid Scintillation Counters (LSCs)

- LSC must be emptied of all samples and racks.
- Radioisotope standards need to be removed and properly stored.
- LSC needs to be cleaned to be free of radioactive contamination.
- Submit indirect contamination surveys to the Radiation Safety Officer for verification.

For more detail refer to the SAB Moving Regulated Material and Equipment Procedure (Appendix D).

#### 4.2 Refrigerators and freezers

- Please reference **SAB Moving Fridges and Freezers** (Appendix: C).
- Fridges and freezers which contain regulated material (biohazardous/Radioactive) please reference **SAB Moving Regulated Material and Equipment** (Appendix: D).
- All fridges and freezers must be emptied, defrosted, cleaned and decontaminated if required. Cleaning the inside and outside surfaces of the fridge and freezer.

Note: most of the large freezers, -80C will need to have the freezer doors removed to enable the move into the SAB. The contents of the freezers need to be removed, packed and transported to the new lab location following the **Packing and Moving Regulated Biological Material (RBM) Guideline** (Appendix: D).

#### 4.3 Centrifuges

- Inspect centrifuge to ensure all samples and balance tubes have been removed.

- Clean the inside and outside of the centrifuge and all rotors.
- If possible remove centrifuge rotors and pack for transport. Due to the extreme weight of some rotors they may not be able to be packed into boxes.
- Centrifuges which were used with infectious agents, radioactive isotopes, or hazardous chemicals must be properly decontaminated following prescribed lab procedures.

#### **4.4 Ovens**

- Remove all thermometers.
- Remove any samples from the oven.
- For older ovens, check the lining for the presence of asbestos. If the oven lining appears to be constructed of asbestos, contact Safety Services for assistance.
- Ovens which were used with infectious agents, radioactive isotopes, or hazardous chemicals must be properly decontaminated following prescribed lab procedures.

#### **4.5 Incubators**

- Remove any remaining samples and thermometers.
- Drain the water from the incubator jacket if required.
- Laboratory equipment which was used for infectious agents, radioactive isotopes, or hazardous chemicals must be properly decontaminated by the researchers following prescribed procedures.

#### **4.6 Water baths**

- Drain the water from the unit and remove any remaining samples or thermometers.
- Clean and if required disinfect.

#### **4.7 Balances and scales**

- Wipe clean to remove any remaining chemical contamination inside the balance or on the scale.
- If required lock balances for moving.

#### **4.8 Heating blocks**

- Remove all samples and thermometers.
- If necessary, decontaminate the heating block.

#### **4.9 Equipment with vacuum pumps/transformers**

- Pump oil should be drained prior to moving.
- Used vacuum pump oil must be disposed as Hazardous Material via CHEMATIX.
- Transformers in older equipment may contain Polychlorinated Biphenyls (PCB).

Contact [Safety Services](#) for advice on disposal requirements

**When equipment is cleaned adhere a green clean sticker, initialed and dated to all unpacked items indicating to the movers the item is hazard free and able to be moved. *Science Facilities will supply all labels with the packing materials.***

#### 5. Packing of the Laboratory

- Science Facilities will be supplying packing materials and supplies including labels at least **30 working days prior** to the scheduled lab move.
- It is recommended that all lab activities cease and attention is given to organizing and packing of the lab contents.
- Prepare a **clean staging area in the lab for the packing and temporary storage of lab boxes that will be moved into SAB**. When preparing a clean staging area use a detergent solution or decontamination solution as appropriate for the hazards of the materials that may have been used in the lab. All items in the staging area are clean, free of hazards and able to be handled by the SAB moving team.
- Spill kits should be on hand in the laboratory to handle any breakage or spills. Some boxes.
- Glassware - must be cleaned and appropriately packaged for transport.
- Equipment- must be free of hazards, this may require cleaning before packing.
- The primary (stock) containers of hazardous materials must be labelled with the contents, appropriate hazard warning or WHMIS labels, and inventory barcode labels.
- **Hazardous materials** must be packed in a sealable, leak-proof secondary container (e.g. cardboard box with sealable plastic liner; plastic box).
- The secondary container must be large enough to contain the volume of material being transported.
- Ensure all primary containers are in good condition and caps are tightly closed. Damaged containers must not be transported (i.e. cracked or broken primary containers).
- Sufficient packaging material must be used to prevent breakage.

Each box must be labelled with the following completed packing label.

DEPT: \_\_\_\_\_  
RM# FROM: \_\_\_\_\_ TO: \_\_\_\_\_  
Contents: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
PACKED BY: \_\_\_\_\_ Box # \_\_\_\_ of \_\_\_\_



Cleaned items/equipment not packed in boxes must be labelled with the following “clean” sticker. The label needs to be initialed and dated by the packer.



Initials: \_\_\_\_\_ Date: \_\_\_\_\_

### ***Packing of specific hazardous materials:***

#### 5.1 Chemicals

Segregate chemicals according to hazard classification (**Appendix A Laboratory Chemicals by Compatibility Group** and **Appendix B Chemical Incompatibility Guide**). (i.e. do not pack incompatible materials such as acids and bases into the same box).

Some chemicals are sensitive to air, heat and movement. Carefully examine sensitive chemicals to ensure they are safe to transport. Refer to supplier’s Safety Data Sheet and the Laboratory Chemical Safety Manual for further information. Contact **Peter Dibble and Kris Fischer** for advice regarding chemicals that may pose a risk during transport

## Chemicals are to be packed as follows:

- All chemicals must be packed in sealable, leak-proof secondary container (i.e. plastic tubs).
- Neutral compounds are OK to be packed together in the plastic containers.
- Carefully place chemical containers taking care to place any liquids upright and surrounded by other containers so they won't spill.
- Flammables are to be packed separately. No more than 5L can be stored outside of flammable storage cabinets. **Prepare the boxes and labels in advance so that these can be packed on the day of the move.**
- Flammables requiring cold storage must only be placed in flammable storage or explosion proof refrigerators (specifically engineered for this purpose).
- Acids and bases are to be packed in the plastic containers, or shipping boxes.
- **DO NOT** pack acids and bases together.
- Oxidizers are to be packed separately from all other chemicals.

**If you have any questions about the packing of specific chemicals please contact Peter Dibble (320-2305 [dibble@uleth.ca](mailto:dibble@uleth.ca)) or Kris Fischer (329 2343 [fiske@uleth.ca](mailto:fiske@uleth.ca)) for assistance.**

### 5.2 Biological Materials

Please refer to ***Regulated Material and Equipment Procedure***

If you have any questions about the packing of regulated biological material contact the Biosafety Officer Lorna Selinger (329 4484 [lorna.selinger@uleth.ca](mailto:lorna.selinger@uleth.ca))

### 5.3 Radioactive Material

Please refer to ***Regulated Material and Equipment Procedure***

If you have any questions about the packing of radioactive material contact the Radiation Safety Officer Carolin Cattoi-Demkiw (329 2350 [carolin.cattoidemkiw@uleth.ca](mailto:carolin.cattoidemkiw@uleth.ca))

### 5.4 Gas Cylinders

Make arrangements with Materials Management for the removal of empty compressed gas cylinders or of gas cylinders that are no longer required. Ensure gas cylinder regulators are removed and a safety cap is secured over the cylinder valve prior to transport of any compressed gas cylinders.

## 5.5 Cryogen Dewars

Dewars may be moved with their contents provided the Dewar lid is appropriately secured. Arrangements must be made with Materials Management to transport Dewars between buildings by vehicle. **Refer to the Cryogen Safety Manual for details.**

## 6. Cleaning Laboratory Spaces

- **Maximum of 14 days** post move out of old lab space, PI are required finalize the lab closeout (Appendix F).
- Ensure all laboratory surfaces including, benchtops, cabinets, drawers, storage units and fume hoods are emptied and cleaned with detergent solution or decontamination solution as appropriate to the hazards in that location. This will facilitate efficient inspection of the laboratory by Safety Services.
- When all items have been moved from the lab and all cleaning/decontamination is complete, **contact [Safety Services](#) to arrange for final inspection and lab closeout sign off.** Safety Services will not sign the laboratory closeout form if any equipment, hazardous waste or laboratory supplies are still located within the lab.

**Note:**

**Radioisotopes:** refer to the Radiation Safety and Procedures Manual for decontamination and/or decommissioning requirements and approvals.

**Biological Materials:** refer to the Biosafety Code of Practice for disinfection procedures.

## 7. Moving Items to a New Laboratory Location

- Science Facilities is responsible for the scheduling and moving of lab materials and equipment.
- The PI or a knowledgeable lab designate will be required to accompany the SAB Move Team when moving lab chemicals.
- Large equipment may move prior or after the scheduled lab move. Please consult the Master Equipment Schedule for dates.
- **5 working days** prior to the scheduled lab move date complete a **Lab Clearance to Work in Laboratories** form, post it on the door of the lab.
- Within that **5 day** window Safety Services will inspect the packed lab to ensure compliance with moving procedures.
- Chemical inventories in CHEMATIX will be transferred to new location. Safety Services will assist with this transfer ([lorna.selinger@uleth.ca](mailto:lorna.selinger@uleth.ca) 403 329 4484).

**Note:** Proper hazard signs for the laboratory space must be requested. Contact [Safety Services](#) to request a new sign.

## 8. Receiving Items in New Laboratory Locations

- Ensure someone is present at the new laboratory location to receive boxes of hazardous materials and equipment.
- Open boxes carefully and examine contents for breakage or damage.
- Some boxes may require opening in fume hood. Check box labels for hazards.
- Spill kits should be on hand in the laboratory to handle any breakage or spills. Some boxes.
- When unpacking chemicals, store them according to compatibility groups in designated locations. Refer to **UofL Laboratory Chemical Safety and Procedures Manual** for information on the storage of chemicals.
- When unpacking radioactive material, store the material in a secure location that is listed on the research group's Radionuclide Permit. Verify that all radioactive stocks that were inventoried prior to the move have been received at the new location. **Contact the Radiation Safety Officer if any concerns arise.**
- When unpacking regulated biological material, store the material in a secure location that is listed on the research group's Biosafety Permit. Verify that all regulated biological material stocks that were inventoried prior to the move have been received at the new location. **Contact the Biosafety Officer if any concerns arise.**
- Once plastic tubs of hazardous materials have been emptied, labels removed and cleaned if necessary, return emptied plastic tubs back to E820 for reuse.
- Each PI will need to complete a reconciliation/update of chemical inventory within two weeks of entering the new lab space to account for new storage units if necessary.
- Ensure compressed gas cylinders are securely attached to the wall or bench with a proper strapping system.

## 9. Commencing Work in New Laboratory Locations

Prior to commencing research at the new location, follow the steps below that apply to your research group:

- The PI must receive confirmation from the Biosafety Officer that testing of biological safety cabinets at the new location was completed.
- All fume hoods within the new laboratory must have a certification sticker indicating the average face velocity of the unit and the date the velocity test was conducted. Fume hoods moved from another location must be tested prior to being used.
- The PI must ensure that internal permits for radioisotope and regulated biological materials, as well as other required postings for designated radiation equipment (x-ray, laser) are installed at the new location.
- PI should review all hazard assessments and make any required amendments. Hazard assessments should be available to all workers in the lab. If applicable, the PI must update emergency procedures (assembly points, location of fire extinguishers, etc.) and reorient lab staff for the new location. Contact [Safety Services](#) to update the CHEMATIX profile for the lab.



## 10. Shared Spaces

Some areas in research facilities are designated as shared between several research groups. In order to ensure the safety of research personnel, groups who are sharing space must consider the following:

- The research groups will learn the location of the nearest emergency shower and eye wash, first aid kit, fire alarm pull station, emergency exits spill kits and other safety/emergency equipment. All members of the research group shall receive and sign-off on a documented orientation of the locations of this safety equipment. The research groups will work together to develop information on common practices such as waste management storage locations, contact personnel for shared equipment, and operation and maintenance procedures for shared core facilities.
- Groups shall collaborate to cross-train personnel on hazards each group is working with and to review decontamination and safety procedures for common use areas and equipment to confirm the procedures are appropriate for all hazards in use.
- Researchers are asked to assign primary and secondary emergency contact personnel who can speak on behalf of all the groups using the space in the event of an incident (i.e., burst pipe, freezer failure, detection of a spill, etc.). This discussion should be used to fill out and submit one hazard sign order form for the particular shared space involved.

### RELATED DOCUMENTS

Laboratory Chemical Safety and Procedures Manual 2019

Safe Transportation of Hazardous Materials Procedure

SAB Moving Regulated Materials and Equipment

SAB Moving Fridges and Freezers

Equipment Release Procedure

Financial Services Procedures

Materials Management procedures

Hazardous Waste Disposal Procedure

Laboratory Closeout Standard

Laboratory Closeout Procedure

Chemical Safety – WHMIS Requirements

To access all related documents please go to **Safety Services, Laboratory Safety**  
<http://www.uleth.ca/risk-and-safety-services/laboratory-safety>

## Appendix A: Laboratory Chemicals by Compatibility Group

When determining in which compatibility group a given chemical should be placed, it is often found that it will fall in to more than one category. In these situations, it is necessary to determine what the primary hazard associated with the chemical is, and whether there are any specific incompatibilities that preclude storing with other chemicals in a given hazard group. This is best determined through consultation with the SDS for specific reactivity and compatibility information.

**Note that this is not meant to be an exhaustive list, but a guide.  
For details on any chemical, always consult the SDS.**

### Pyrophoric Chemicals

Pyrophoric chemicals are those that may spontaneously ignite upon exposure to air. They should be kept in a tightly sealed container, and in many cases should be stored under an inert solvent or atmosphere to minimize the possibility of contact with air.

- Grignard reagents, RMgX
- Metal alkyls and aryls, such as RLi, RNa, R<sub>3</sub>Al, R<sub>2</sub>Zn
- Metal carbonyls, such as Ni(CO)<sub>4</sub>, Fe(CO)<sub>5</sub>, Co<sub>2</sub>(CO)<sub>8</sub>
- Alkali metals such as Na, K
- Metal powders, such as Al, Co, Fe, Mg, Mn, Pd, Pt, Ti, Sn, Zn, Zr
- Metal hydrides, such as NaH, LiAlH<sub>4</sub>
- Nonmetal hydrides, such as B<sub>2</sub>H<sub>6</sub> and other boranes, PH<sub>3</sub>, AsH<sub>3</sub>
- Nonmetal alkyls, such as R<sub>3</sub>B, R<sub>3</sub>P, R<sub>3</sub>As
- Phosphorus (white)

### Oxidizing Agents

The primary hazard associated with oxidizers lies in their ability to act as an oxygen source and thus readily contribute to the combustion of organic materials. Typical oxidizers include those chemicals with the following oxygen containing groups:

Bromates	Nitrites
Chlorates	Perborates
Chlorites	Perchlorates
Chromates	Permanganates
Dichromates	Persulfates
Hypochlorites	Peroxides
Nitrates	Superoxides

In addition, the halogens (fluorine, chlorine, bromine) also react as oxidizers and should be treated accordingly.

## **Reducing Agents**

In practical, chemical safety terms, reducing agents are those chemicals that are good sources of hydride and thus react vigorously with many other substances: Some strong reducing agents typically found in laboratories:

- Hydrogen
- Metal Hydrides (ex: NaH, LiAlH<sub>4</sub>)
- Grignard reagents, RMgX
- Sodium Borohydride
- Boranes
- Alkali Metals
- Alkyl Lithium, Alkyl Sodium

## **Water Reactive Chemicals**

Water reactive chemicals should be stored in a dry, cool, location, protected from water and the fire sprinkler system.

- Alkali metals, such as Na, Li, K
- Alkali metal hydrides, such as LiH, CaH<sub>2</sub>, LiAlH<sub>4</sub>, NaBH<sub>4</sub>, alkali metal amides, such as NaNH<sub>2</sub>
- Metal alkyls, such as lithium and aluminum alkyls
- Grignard reagents, RMgX
- Halides of nonmetals, such as BCl<sub>3</sub>, BF<sub>3</sub>, PCl<sub>3</sub>, PCl<sub>5</sub>, SiCl<sub>4</sub>, S<sub>2</sub>Cl<sub>2</sub>
- Inorganic acid halides, such as POCl<sub>3</sub>, SOCl<sub>2</sub>, SO<sub>2</sub>Cl<sub>2</sub>
- Anhydrous metal halides, such as AlCl<sub>3</sub>, TiCl<sub>4</sub>, ZrCl<sub>4</sub>, SnCl<sub>4</sub>
- Phosphorus pentoxide
- Calcium carbide
- Organic acid halides and anhydrides of low molecular weight (ex: acetylchloride, acetic anhydride)

## Appendix B: Common Chemical Specific Incompatibles

The following list is a quick reference of incompatibilities of many chemicals commonly encountered in the laboratory. It is not a comprehensive list of all possible combinations and chemicals. For details on any chemical, check the SDS, and follow the segregation guidelines in section 5 *Storage of Chemicals*.

Chemical	Is Incompatible With
Acetic acid	Chromic acid, nitric acid, perchloric acid, peroxides, permanganates
Acetylene	Chlorine, bromine, copper, fluorine, silver, mercury
Acetone	Concentrated nitric acid and sulfuric acid mixtures
Alkali and alkaline earth metals	Water, carbon tetrachloride or other chlorinated hydrocarbons i.e., powdered aluminum or magnesium, carbon dioxide, halogens, calcium, lithium, sodium, potassium
Ammonia (anhydrous)	Mercury (in manometers, for example), chlorine, calcium hypochlorite, iodine, bromine, anhydrous HF
Ammonium nitrate	Acids, powdered metals, flammable liquids, chlorates, nitrites, sulfur, finely divided organic or combustibles
Aniline	Nitric acid, hydrogen peroxide
Arsenical materials	Any reducing agent
Azides	Acids
Bromine	See Chlorine
Calcium oxide	Water
Carbon (activated)	Calcium hypochlorite, all oxidizing agents
Carbon tetrachloride	Sodium
Chlorates	Ammonium salts, acids, powdered metals, sulfur, finely divided organic or combustible materials
Chromic acid and chromium trioxide	Acetic acid, naphthalene, camphor, glycerol, alcohol, flammable liquids in general
Chlorine	Ammonia, acetylene, butadiene, butane, methane, propane (or other petroleum gases), hydrogen, sodium carbide, benzene, finely divided metals, turpentine
Chlorine dioxide	Ammonia, methane, phosphine, hydrogen sulfide
Copper	Acetylene, hydrogen peroxide
Cumene hydroperoxide	Acids (organic or inorganic)
Cyanides	Acids
Decaborane	Carbon tetrachloride and some other halogenated hydrocarbons
Flammable liquids	Ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide, halogens
Fluorine	Everything
Hydrocarbons (such as butane, propane)	Fluorine, chlorine, bromine, chromic acid, sodium peroxide

<b>Chemical</b>	<b>Is Incompatible With</b>
Hydrocyanic acid	Nitric acid, alkali
Hydrofluoric acid (anhydrous)	Ammonia (aqueous or anhydrous)
Hydrogen peroxide	Copper, chromium, iron, most metals or their salts, alcohols, acetone, organic materials, aniline, nitromethane.
Hydrogen sulfide	Fuming nitric acid, oxidizing gases
Hypochlorites	Acids, activated carbon
Iodine	Acetylene, ammonia (aqueous or anhydrous), hydrogen
Mercury	Acetylene, fulminic acid, ammonia
Nitrates	Sulfuric acid
Nitric acid (concentrated)	Acetic acid, aniline, chromic acid, hydrocyanic acid, hydrogen sulfide, flammable liquids, flammable gases, copper, brass, any heavy metals
Nitrites	Acids
Nitroparaffins	Inorganic bases, amines
Oxalic acid	Silver, mercury
Oxygen	Oils, grease, hydrogen, flammable liquids, solids, or gases
Perchloric acid	Acetic anhydride, bismuth and its alloys, alcohol, paper, wood, grease, oils
Peroxides, organic	Acids (organic or mineral), avoid friction, store cold
Phosphorous (white)	Air, oxygen, alkalis, reducing agents
Potassium	Carbon tetrachloride, carbon dioxide, water
Potassium chlorate	Sulfuric and other acids
Potassium perchlorate (also chlorates)	Sulfuric and other acids
Potassium permanganate	Glycerol, ethylene glycol, benzaldehyde, sulfuric acid
Selenides	Reducing agents
Silver	Acetylene, oxalic acid, tartaric acid, ammonium compounds, fulminic acid
Sodium	Carbon tetrachloride, carbon dioxide, water
Sodium nitrite	Ammonium nitrate and other ammonium salts
Sodium peroxide	Ethyl or methyl alcohol, glacial acetic acid, acetic anhydride, benzaldehyde, carbon disulfide, glycerine, ethylene glycol, ethyl acetate, methyl acetate, furfural
Sulfides	Acids
Sulfuric acid	Potassium chlorate, potassium perchlorate, potassium permanganate (similar compounds of light metals such as sodium, lithium)
Tellurides	Reducing agents

## Appendix C: Moving Fridge and Freezers



### SAB Moving Fridge and Freezers

#### **A. Pre packing**

1. In preparation for the move into the SAB conduct an inventory in all fridges and freezers.
2. Discard any materials that are no longer needed using the appropriate waste stream. The waste streams will be the same as used during regular lab activities. Please reference Safety Services Hazardous Waste Management page. <http://www.uleth.ca/risk-and-safety-services/hazardous-waste-management>
3. The disposal of all animal carcasses and tissues will need to be sent for incineration. For samples that are in containers that cannot be incinerated, they will need to be sent for disposal through the hazardous waste process using CHEMATIX. **Please contact Safety Services if you have questions.**
4. For the moving of regulated (Biohazardous and Radioactive) material and equipment refer to *SAB Moving Regulated Material and Equipment*.
5. No material should be disposed of into the domestic garbage or sewer unless rendered hazard free. **If in doubt contact Safety Services.**
6. All primary containers must be labelled to describe the contents accurately.

#### **B. Packing**

1. When removing material from fridges and freezers wear appropriate PPE, lab coat, gloves and safety glasses.
2. The use of cyro-gloves is recommended when transferring material from -80°C freezers to prevent burns to hands and arms.
3. Practice good hand hygiene during the packing and move process.
4. Ensure primary containers are in good condition and caps are tightly closed. Damaged containers must not be transported (cracked or broken primary containers).
5. It is recommended that all items removed from fridge and freezers be transported in a leak-proof secondary container.
6. Ensure secondary container is large enough to hold any liquid if spilled. Include absorbent material in the secondary container (paper towel or spill pad).
7. Frozen material will be packed and moved using transport freezers. There are three transport freezers, one -80°C (10 cu. ft.) and two -20°C (15 cu. ft. each). There will also be available coolers, ice and if required dry ice for packing lab material.
8. If using dry ice to transport do not place dry ice a sealed container.
9. Ensure transport freezers and coolers are labelled.

### C. Moving packed containers

1. For the dates of moving of -20°C / -80°C freezers and the deli fridges (those with double glass doors), refer to the Master Equipment Schedule. Moving of the +4°C fridges will occur on your scheduled lab move day.
2. If lab staff accompany or participate in moving items to the SAB they will need to receive training and orientation provided by Science Facilities.
3. Science Facilities staff will move the transport freezers and coolers to SAB.
4. Upon arrival to SAB, -20°C material will remain in transport freezers until the owner's lab freezer is delivered and at temperature, then the lab material will be transferred from the transport freezer by lab staff into the owner's freezer.
5. Upon arrival to SAB, -80°C lab material will be transferred from the transport freezer to a temporary -80°C freezer. The lab material will stay in the temporary freezer until the owner's freezer has been moved to the SAB and has been allowed to reach desired temperature. Refer to the Master Equipment Schedule for the -80°C move dates.
6. Upon arrival to the SAB, +4°C material will be placed into temporary storage in the walk-in cold rooms. This applies to **NON-FLAMMABLE MATERIALS ONLY**.
7. All items that are **flammable must be placed in an approved flammable storage, flammable fridge/freezer**. These fridge/freezers will have a manufacturer's label indicating this.

### D. Decontamination and Cleaning of Fridges and Freezers

1. Prior to moving any fridge or freezer, all contents need to be removed and transported to the new location.
2. Unplug equipment prior to cleaning.
3. For fridges and freezers if there is heavy ice buildup – leave unit overnight with proper drainage or absorbing materials. Never use sharp objects to chip at the ice. Freezer walls are easily punctured by sharp objects, allowing coolant to escape and resulting in expensive repairs or replacement costs.
4. Never allow liquid to run directly onto floors creating a slip hazard, or down any floor drain.
5. Establish a wick and reservoir system to manage the melting ice. Place a piece of absorbent material inside the freezer and a large catch pan in the freezer bottom. Surround the freezer and autoclave pan with paper towels or spill pads.
6. Clean up any spills or residual organic material and wash inside and out of fridge and freezer with soap and water.
7. Wipe out excess liquid and allow to air dry.
8. It is also recommended that the dust filters on the -80°C freezers be cleaned. Please refer to owner's manual. Cleaning of these filters should be done on a regular schedule for proper operation and life expectancy of -80°C freezers.
9. Once the equipment is cleaned adhere a green "clean moving sticker", initial and date. This sticker will be an indicator to the moving staff that the unit is free of any hazardous material and can be moved.



# SAB: Moving Regulated Materials and Equipment

## Regulated Biological Material (requiring internal permit)

### A. Pre packing

1. Only trained and authorized workers will be allowed to pack and move any regulated biological material (RBM).
2. In preparation for the move into the SAB, inventory RBM in all fridges and freezers.
3. Any RBM that can be discarded, must be autoclaved and then disposed in domestic garbage (remember to deface all biohazardous signs before throwing autoclave bags in the garbage) or in the case of liquids, pour autoclaved liquids in the domestic sewer and flush with water.
4. All primary containers must be labelled to describe the contents accurately.
5. **Before packing or moving any regulated biological material contact the Biosafety Officer.**

### B. Packing

The packing of regulated biological material requires that special precautions are followed by laboratory personnel:

1. Only trained and authorized workers will be allowed to pack and move RBM.
2. When removing RBM from fridges and freezers wear appropriate PPE, lab coat, gloves and safety glasses. The use of cyro-gloves is recommended when transferring material from -80°C freezers to prevent burns to hands and arms.
3. Ensure primary containers are in good condition and caps are tightly closed. Damaged containers must not be transported (i.e. cracked or broken primary containers).
4. Pack RBM in a sealable leak-proof secondary container.
5. Ensure secondary container is large enough to hold any liquid if spilled. Include absorbent material in the secondary container.
6. Frozen RBM secondary containers will be placed in coolers containing ice. For +4°C items, coolers will have ice packs.
7. If using dry ice to transport RBM, place the secondary containers in/on the dry ice which will be in coolers. Do not place dry ice a sealed container.
8. Ensure the outside of the cooler is clean and labelled.
9. **Contact the Biosafety Officer if any questions or concerns arise when packing RBM inventory.**



### **C. Moving packed containers**

1. Only trained and authorized workers will be allowed to pack and move RBM.
2. Do not carry transport containers by hand. Use carts to transport all RBM material.
3. Exit procedures must be followed when leaving designated containment laboratories. This includes removal of all PPE (lab coat, gloves) and hands washed before exiting lab.
4. Avoid the use of passenger elevators. Freight elevators should be used whenever possible. Do not use stairs when transporting hazardous materials.
5. Upon arrival to the new lab space, open secondary containers in a biosafety cabinet to ensure there has not been any breaks or spills during transport.
6. Place the RBM into **the assigned temporary lockable fridge or freezer**. The temporary fridge and freezer space will be assigned by Science Facilities. RBM will then be transferred from these temporary fridge/freezers into the owner's fridge and freezers once they have been delivered and the desired temperature has been reached.
7. **Contact Biosafety Officer when transfer is complete. Biosafety Permits will need to be amended.**

### **D. Decontamination and Cleaning of Equipment**

10. Prior to moving any equipment all contents need to be removed and transported to the new location.
11. Unplug equipment prior to cleaning.
12. For fridges and freezers with heavy ice buildup – leave unit overnight with proper drainage or absorbing materials. Never use sharp objects to chip at the ice. Freezer walls are easily punctured by sharp objects allowing coolant to escape and resulting in expensive repairs or replacement costs.
13. Never allow liquid to run directly onto floors creating a slip hazard, or down any floor drain.
14. Establish a wick and reservoir system to manage the melting ice. Place a piece of absorbent material inside the freezer and a large catch pan in the bottom of the freezer. Surround the freezer and autoclave pan with paper towels or spill pads.
15. Any water or ice removed from the fridge/freezer must be treated with 10% bleach before disposing down the drain. All containers that are used to collect water and ice need to be autoclaved or disinfected with 10% bleach solution and washed with soap and water.
16. Spray down the inside and outside of the equipment with freshly made 10% bleach solution.
17. Let sit 10 minutes then wipe to dry.
18. Spray equipment down with clean water or 70% ethanol to remove bleach residue and avoid corrosion of surfaces.
19. Wipe out excess water/ethanol and allow to air dry.
20. **When cleaning is complete contact the Biosafety Officer to sign off on the Laboratory Clearance to Work.**
21. Once the equipment is cleaned **adhere a green "Clean" moving sticker**, initial and date. This sticker will be an indicator to the moving staff that the unit is free of hazardous materials and can be moved.

## E. Resources

1. U of L Biosafety Code of Practice

## Regulated Radioactive Material and Equipment (requiring internal permit)

### A. Pre packing

1. Only trained and authorized workers will pack and move regulated radioactive material (RAM).
2. In preparation for the move into the SAB, inventory RAM in all fridges and freezers.
3. RAM that can be discarded must be disposed of according to the U of L Radioactive Waste Disposal Procedure. **Contact the Radiation Safety Officer.**
4. All primary containers must be labelled to describe the contents accurately.
5. **Before packing or moving any material contact the Radiation Safety Officer.**

### B. Packing

Packing RAM requires that special precautions are followed by laboratory personnel:

1. Only trained and authorized workers will pack and move RAM.
2. When removing RAM from fridges and freezers wear appropriate PPE, lab coat, gloves and safety glasses. The use of cyro-gloves is recommended when transferring material from -80°C freezers to prevent burns to hands and arms.
3. Ensure primary containers are in good condition and caps are tightly closed. Damaged containers must not be transported (i.e. cracked or broken primary containers)
4. Pack RAM in sealable, unbreakable, leak proof secondary containment.
5. Ensure secondary containers are large enough to hold any liquid if spilled. Include absorbent material in the secondary container.
6. Secondary containers for frozen RAM will be placed in coolers containing ice. For +4°C items, coolers will have ice packs.
7. If using dry ice to transport RAM, place the secondary containers in/on the dry ice which will be in coolers. Do not place dry ice a sealed container.
8. Do not touch the outside of coolers with gloves that have handled RAM.
9. Ensure that all sealed sources (check sources and LSC standards) are removed from equipment if required and packaged into a sealed and unbreakable secondary container.
10. Ensure the outside of all coolers and containers are clean and labelled.
11. **Contact the Radiation Safety Officer if any questions or concerns arise when packing RAM inventory.**

### C. Moving packed containers

1. Only trained and authorized workers will be allowed to pack and move RAM.
2. Do not carry transport containers by hand. Use carts to transport all RAM material.
3. Exit procedures for leaving radioisotope laboratories must be followed. This includes removal of all PPE (lab coat, gloves) and hands washed before exiting the lab.

4. Avoid the use of passenger elevators. Freight elevators should be used whenever possible. Do not use stairs when transporting hazardous materials.
5. Upon arrival to the new lab space, open secondary containers in the fume hood to ensure there has not been any breaks or spills during transport.
6. Place the RAM into **the assigned temporary lockable fridge or freezer**. The temporary fridge and freezer space will be assigned by Science Facilities. RAM will then be transferred from these temporary fridge/freezers into the owner's fridge and freezers once they have been delivered and the desired temperature has been reached.
7. All sealed sources must be unpacked and stored in a locked enclosure, fridge, or cabinet during storage or in a locked radioisotope lab.
8. **Contact the Radiation Safety Officer when transfer is complete. Radiation Safety Permits will need to be amended.**

#### **D. Decontamination and Cleaning of Equipment**

1. Prior to moving equipment, all contents need to be removed and transported to the new location.
2. Unplug the equipment prior to cleaning.
3. For fridges and freezers with heavy ice buildup – leave unit overnight with proper drainage or absorbing materials. Never use sharp objects to chip at the ice. Freezer walls are easily punctured by sharp objects, allowing coolant to escape and resulting in expensive repairs or replacement costs.
4. Never allow liquid to run directly onto floors creating a slip hazard, or down any floor drain.
5. Establish a wick and reservoir system to manage the melting ice. Place a piece of absorbent material inside the freezer and a large catch pan in the bottom of the freezer. Surround the freezer and autoclave pan with paper towels or spill pads.
6. Collected waste water from fridge and freezer needs to be disposed of as radioactive waste. **Follow the U of L Radioactive Waste Disposal Procedures.**
7. Remove all radioactive labels from equipment.
8. All equipment needs to be cleaned to be free of radioactive contamination.
9. **Submit indirect contamination surveys to the Radiation Safety Officer for verification.**
10. **When cleaning is complete contact the Radiation Safety Officer to sign off on the Laboratory Clearance to Work.**
11. It is also recommended that the dust filters on the -80°C freezers be cleaned. Please refer to the owner's manual. Cleaning of these filters should be a done on a regular schedule for proper operation and life expectancy of -80°C freezers.
12. Once the equipment is cleaned, **adhere a green "Clean" moving sticker**, initial and date. This sticker will be an indicator to the moving staff that the unit is free of hazardous materials and can be moved.

## **E. Designated Radiation Equipment (X-ray & Laser Systems)**

**Contact Safety Services prior to relocating, transferring or disposing of designated radiation equipment (X-ray and Laser systems).  
Regulatory licensing and reporting requirements must be maintained.  
Equipment must be decommissioned prior to disposal.**

## **F. Resources**

1. U of L Radiation Safety and Procedures Manual
2. Uof L X-ray Safety and Procedures Manual
3. Uof L Laser Safety and Procedures Manual
4. U of L Equipment Release Procedure



## Clearance to Work in Laboratories

The purpose of the **Clearance to Work in Laboratories Procedure** is to ensure a safe work environment for all non-lab workers (e.g. Science Facilities staff, Facilities Maintenance & Operations staff, contractors and service providers) entering any laboratory spaces.

If chemicals, radioactive material or biohazards have been used in the lab, ensure work surfaces in this lab are clean and free of any residual contamination and complete the form on the following page as documented verification that the area is safe.

**The form must be completed by the Person in Charge of the laboratory and posted** at the entrance of the lab to indicate to non-lab workers that the area that they will be entering and working in is free of hazards.

As part of the Clearance to Work in Laboratories Procedure, Safety Services is required to sign off when the lab is a Radioisotope or Containment Level 2 laboratory or if designated radiation equipment is used in the lab.

### **A. PI/Laboratory Supervisor must:**

- Define a safe work area that is clear of hazardous materials, surfaces have been cleaned and are free of residues, experiments have been stopped and obstructions (including chemical containers, lab carts, lab chairs and equipment) have been removed to allow access.
- If the working surface or equipment is labelled with, “Caution Radioactive Materials”, the PI/lab supervisor must receive written authorization from the Radiation Safety Officer that the equipment is free of radiation hazards, **prior** to commencing work.
- Ensure that no laboratory activities, **that could expose non-lab workers to hazards during the course of their work**, is being conducted.

Clearance to Work documents need to be **signed by Safety Services** if the work activities are in a **Containment Level 2 lab, Radioisotope lab/storage area** or involve work with designated **radiation equipment** (lasers, x-ray) and **radiation devices** (Liquid Scintillation Counters).

### **B. Non-lab workers entering the lab must:**

1. Discuss the scope of work with the PI to ensure the hazards of work to be conducted are mitigated.
2. Conduct work only in defined areas.
3. Follow appropriate safe work procedures.
4. Contact their immediate supervisor, designated University Contact or Safety Services if questions or clarification is required.



# Clearance to Work in Laboratories Procedure

**Principal Investigator/Person in Charge** \_\_\_\_\_

**Contact Name:** \_\_\_\_\_ **Phone#:** \_\_\_\_\_ **Department:** \_\_\_\_\_

**Laboratory/Rm#:** \_\_\_\_\_ **Building Name** \_\_\_\_\_

**Type of Lab (check all that apply):**

- Radioisotope  
  CL2  
  Laser  
  X-ray  
  Chemistry  
  Bio/Micro  
  Physics  
  Other

**Scope of Work:**

The area entered by non-laboratory workers	Completed
Work area is free of chemical, biological, physical and equipment hazards	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
All residues on surfaces in the area have been cleaned	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
If required by permits; all surfaces have been tested and are free of contamination	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
All experiments in the area have been stopped	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Obstructions have been removed from the area to allow access	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Other	

**Principal Investigator/Person in Charge Sign-Off:**

The area is free of chemical, biological or radioactive contamination; physical hazards have been removed and is now safe for cleaning, renovation or repair work to proceed”.

**Principal Investigator/Person in Charge:** \_\_\_\_\_  
Signature Date

**Safety Services Sign-Off required for specific regulated hazards:**

Radiation Safety Officer      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
Signature      Date      N/A

Biosafety Officer      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
Signature      Date      N/A

Please post signed copy at lab entrance(s).

## Appendix F: Laboratory Closeout Checklist

UNIVERSITY OF LETHBRIDGE - LABORATORY CLOSEOUT PROCEDURE		
BUILDING:	ROOM:	PHONE:
NAME:		EMAIL:
Check one: <input type="checkbox"/> Leaving University <input type="checkbox"/> Moving to new location on campus		
<b>GENERAL</b>	Date Completed (YYYY/MM/DD)	Not Applicable
<b>INITIAL STEP – BEFORE YOU START:</b> Contact Safety Services to review Lab Closeout Standard & Procedure requirements - minimum of 4-6 weeks prior to vacating lab.		
<b>NOTE:</b> The SAB Move Team will coordinate the physical relocation of chemicals, biologicals, radioactive materials, equipment containing hazardous materials, or regulated equipment. <a href="#">Contact Safety Services</a> for advice regarding Transportation of Dangerous Goods shipping and regulatory reporting/inventory requirements, as required (see Lab Closeout Guidelines).		
<b>EQUIPMENT</b>	Date Completed (YYYY/MM/DD)	Not Applicable
Create an “ <i>Equipment Declaration Form</i> ” (available from Financial Services) for items to be disposed/transferred within or outside the University. (Attach copy) <b>See notes <sup>1,2</sup> below.</b>		
Decontaminate/disinfect all furniture/equipment that had been in contact with hazardous materials. Complete the “ <a href="#">Equipment Release Form</a> ” and submit to Safety Services for review (see <a href="#">Equipment Release Procedure</a> ).		
Complete an <a href="#">online Facilities work request</a> for assistance with moving large items of furniture/equipment that <b>WILL NOT</b> be moved to the SAB.		
Pack and label all items/equipment following the instructions provided by the SAB Move Manual 2019. They will relocate all items/equipment to new lab.		
<b>Note<sup>1</sup>:</b> The following items require compliance with additional regulatory procedures and inventory reporting. <a href="#">Contact Radiation Safety Officer (RSO)</a> for authorization prior to removing these items from the lab, transferring to another PI or to a location outside the University. The SAB Move Team will coordinate with Safety Services for moving these items.		
<b>DESIGNATED RADIATION EQUIPMENT (Class 3B &amp; Class 4 lasers, X-ray equipment)</b> require inspection in new lab location.		
<b>RADIATION DEVICES</b> containing radioactive material (e.g. Liquid Scintillation Counters)		
<b>PORTABLE CONTAMINATION SURVEY EQUIPMENT</b> (e.g. Geiger Counters)		
<b>Note<sup>2</sup>:</b> The following items require compliance with additional regulatory procedures and inventory reporting. <a href="#">Contact Biosafety Officer (BSO)</a> for authorization prior to removing these items from the lab, transferring to another PI or to a location outside the University.		

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<b>BIOLOGICAL SAFETY CABINETS (BSC)</b> must be decontaminated prior to moving and recertified before use at new location.		
<b>AUTOCLAVES</b> require specific utility requirements and installation/removal must be conducted by Facilities. SAB Move Team will coordinate this with Facilities.		
<b>CHEMICALS</b>	<b>Date Completed</b> (YYYY/MM/DD)	<b>Not Applicable</b>
Update/reconcile inventory in CHEMATIX. <b>Ensure all containers have appropriate inventory barcodes and WHMIS labels</b>		
Create storage units for new lab location and transfer the chemicals in CHEMATIX.		
Transfer gas cylinders to new lab location in CHEMATIX or return to supplier (notify Materials Management for assistance)		
Create a list of “surplus” chemicals in CHEMATIX, if applicable. Contact <a href="#">Safety Services</a> for assistance.		
Initiate disposal of all unwanted chemicals and wastes by submitting a Waste Disposal Card in CHEMATIX (see Hazardous Waste Disposal Procedure).		
If transferring chemicals to another institution, create a list in an Excel spreadsheet and submit to <a href="#">Safety Services</a> for review.		
Pack chemicals and label moving containers according to instructions provided. The SAB Move Team will coordinate relocation with appointed staff.		
<b>BIOLOGICAL MATERIALS - CONTAINMENT LEVEL 2 (CL2) Labs</b> ( <i>see Biosafety Code of Practice</i> )	<b>Date Completed</b> (YYYY/MM/DD)	<b>Not Applicable</b>
<a href="#">Contact BSO</a> to confirm lab decommissioning procedures. <b>Note:</b> Biological Safety Cabinets (BSC) and Autoclaves <b>require compliance with additional regulatory procedures and inventory reporting.</b> BSCs must be decontaminated prior to moving and recertified before use at new location. <a href="#">Contact BSO</a> for authorization prior to removing these items from the lab.		
Submit a CL2 Biosafety Permit amendment to BSO for approval if moving to a new lab location		
Reconcile biological material inventory to ensure it is accurate and up-to-date. <b>Ensure inventory barcode and WHMIS labels are in place.</b>		
Obtain BSO authorization to transfer RG2 materials to another PI (if applicable).		
Dispose of remaining biological materials and wastes (see Biosafety Code of Practice).		
<a href="#">Contact BSO</a> to confirm completion of decommissioning procedures.		
Pack biological material and label moving containers according to instructions provided. The SAB Move Team will coordinate relocation with appointed staff.		
<b>RADIOACTIVE MATERIAL - RADIOISOTOPE LABS</b> ( <i>see Radiation Safety and Procedures Manual</i> )	<b>Date Completed</b> (YYYY/MM/DD)	<b>Not Applicable</b>
<a href="#">Contact RSO</a> to confirm lab decommissioning procedures		
Submit a radioisotope permit amendment request to RSO if moving to a new lab location		
Reconcile radioisotope inventory to ensure it is accurate and up-to-date. <b>Ensure inventory barcode and appropriate labels are in place on all containers.</b>		
Obtain RSO authorization to transfer radioactive material to another Permit Holder (if applicable).		
Prepare wastes materials for disposal and arrange for pickup by RSO.		

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Conduct contamination survey of all work surfaces, floors and equipment. Decontaminate and resurvey, as required.				
<a href="#">Contact RSO</a> to confirm completion of decommissioning procedures prior to removing items from the lab.				
Pack radioactive material and label moving containers according to instructions provided. The SAB Move Team will coordinate relocation with appointed staff.				
<b>LABORATORY CLEAN-UP</b>			<b>Date Completed</b> (YYYY/MM/DD)	<b>Not Applicable</b>
Transfer, remove or dispose of all materials (paper, tape, supplies, signage, glassware etc.) not already specified above from all benches, counters, shelves, and floors from location(s) identified above (see <a href="#">Hazardous Waste Management Procedure</a> ).				
Decontaminate/disinfect all laboratory surfaces (drawers, shelving, casework etc.)				
Empty and wipe down fume hood(s) interior and exterior surfaces including cup sinks.				
Sweep floor(s) including under shelving in all location(s) identified above.				
Ensure that all surfaces have been cleaned, decontaminated, etc. and that all items have been removed from the lab. If there are large items that await final disposition, ensure that the appropriate procedures are initiated. Complete a Lab Clearance to Work form and post on the lab door to notify the SAB Move Team that the area is safe to enter, as required.				
Submit completed Lab Closeout Form to PI/Supervisor for signature.				
Submit completed Lab Closeout Form to Dean and/or Faculty representative (if applicable) for signature(s).				
<b>FINAL INSPECTION &amp; CLEARANCES</b>			<b>Date Completed</b> (YYYY/MM/DD)	<b>Not Applicable</b>
Contact <a href="#">Safety Services</a> to arrange for final inspection and signature(s).				
Once final inspection has been completed, <a href="#">submit online Facilities work request</a> for floor, lab bench and furnishings cleaning. (Work Request # _____)				
Return all keys to department office (or Facilities, if applicable)				
<b>Individual Completing Closeout:</b>	<b>NAME</b>	<b>SIGNATURE</b>	<b>Date Completed</b> (YYYY/MM/DD)	
Principal Investigator/Supervisor				
Department Head				
Faculty Representative (if applicable)				
Biosafety Officer (if applicable)				
Radiation Safety Officer (if applicable)				
Safety Services Advisor				
<b>Record retention:</b> Original: Department Head/Director and/or Faculty representative. Copy: Principal Investigator, Safety Services and others as required for their records.				