

Building _____ Room _____ Principal Investigator _____
Laboratory Safety Officer _____ Year _____

UVM Laboratory Monthly Self-Inspection Cards

At UVM, we have identified prudent practices for laboratory safety management and organized them into seven areas: **1) Housekeeping, 2) Chemical Labeling, 3) Chemical Storage and Compatibility, 4) Emergency Preparedness, 5) Training and Documentation, 6) Waste Handling, and 7) Biosafety.** To help laboratories organize their safety program and prioritize corrective actions, we have divided the chemical safety practices into three levels:

High Priority Concerns - Correction of these items is an immediate priority (to be completed within 3 days). These minimum criteria are based on OSHA and EPA regulations. Persistent **High Priority Concerns** laboratories and **Imminently Hazardous** situations will be referred to the Vice President for Research and Graduate Studies for follow-up.

Routine Safety Practices - Completion of this level is expected for all UVM laboratories. These practices are based on Prudent Practices in the Laboratory from the National Research Council and/or Federal guidelines.

Model Laboratory Standards - These UVM Best Management Practices are designed for laboratories that have well-established safety programs and choose to go beyond routine safety practices to better manage their own and their community's safety and productivity. Model labs schedule Environmental Safety (ES) laboratory consultations annually instead of undergoing audits.

DIRECTIONS: Check off each item **each month** in that month's checkbox.

Checklists 1-6: Once you have addressed and checked off ALL High Priority Concerns ON ALL CARDS you may proceed to the Routine Safety Practices checklists. Similarly, when you have addressed and checked off ALL of the High Priority Concerns AND the Routine Safety Practices ON ALL CARDS, you may proceed to the Model Laboratory Standards checklists.

Checklist 7: Complete the first section to determine if you need to complete the whole checklist.

Common Use Room card: Fill in the requested information for rooms used by multiple groups.

Environmental Safety Oversight

During Environmental Safety audits, ES staff will verify the current level of operation for each laboratory. Results will be shared with laboratory supervisors and department chairs.



The Laboratory Safety Management Process

In general, use this logic to plan your work:

- (A) First, assure that all laboratory workers are properly trained, safety documentation is in place, and appropriate safety information is readily available; then
- (B) dispose of old, unsafe or unneeded chemicals,
- (C) label remaining chemicals properly, and
- (D) place them in proper storage groups; which
- (E) makes it easier to maintain a clean, contamination and clutter-free laboratory, which
- (F) reduces the likelihood of emergencies occurring, and
- (G) maintaining a safe laboratory on a daily basis becomes easier and far less time-consuming.

The Laboratory Emergency Response Plan

- 1 Know the hazards** of materials in your laboratory before an emergency.
- 2 Recognize an Emergency Situation** - and act on it within 3 minutes - or research shows you're not likely to act.
- 3 Protect yourself first** and then other people while assessing the situation.
- 4 Bring the situation under control with appropriate help:** Call 911 for assistance in emergency situations. (Emergencies are situations which disrupt normal activities and require immediate attention.) Call Service Operations Support at 6-2560 for Environmental Safety assistance in non-emergency situations.
- 5 Plan for recovery** from the emergency.

For More Information

If you have questions or comments about this system, contact us at UVM Environmental Safety by emailing esf@uvm.edu or by going to <http://www.uvm.edu/esf> for supporting documents and information.

✓ Checklist

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

Self-Inspection Checklist

2) CHEMICAL LABELING

High Priority Concerns

Properly label all chemicals with full English name, hazards, date and responsible party.

Label high hazard and time sensitive materials with date received and date opened.

Label chemical cabinets with hazard warnings for the class of chemicals stored in them.

STOP! Do not go on until ALL High Priority Concerns ON ALL CARDS have been addressed and checked off!

Routine Safety Practices

Completely label all hazardous chemicals with standard orange labels available from ES or equivalent.

Label non-hazardous chemicals with standard green labels available from ES or equivalent, and/or with an easily visible non-hazardous chemicals abbreviation key system.

STOP! Do not go on until ALL High Priority and ALL Routine Safety items ON ALL CARDS have been addressed and checked off!

Model Laboratory Standards

Use an easily readable, standardized labeling system for all chemicals.

Place a “date received” on all new containers that come into the laboratory and a “date opened” when the seal is broken.



✓ Checklist

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

Self-Inspection Checklist

3) CHEMICAL STORAGE & COMPATIBILITY

High Priority Concerns

Store hazardous liquids and solid oxidizers in secondary containment.

Inspect high hazard and time sensitive materials monthly for chemical degradation and dispose of as necessary.

Store all chemicals in chemically compatible containers and in cabinets or on shelves (not in fume hoods) with compatible chemicals. (See <http://www.uvm.edu/~esf/chemicalsafety/chemicalstorage.html>)

Secure compressed gas cylinders to prevent them from falling.

Securely close all chemical containers except when material is being added or removed.

Remove chemicals and wastes from the floor.

Exceptions:

- Fiber drums of non-hazardous solid materials may be stored on the floor *if they are not in aisle spaces*.
- See checklist #6 for waste containers that may be stored on the floor.

When flammable liquids need to be refrigerated or frozen, store them in “flammable materials” refrigerators/freezers.

STOP! Do not go on until ALL High Priority Concerns ON ALL CARDS have been addressed and checked off!

Routine Safety Practices

All containers of hazardous liquids stored on shelves should be no larger than 1 quart and be below eye level. (This means the shortest person who works at that location must be able to see the top plane of the shelf on which hazardous liquids are stored.)

Inspect all chemicals regularly and at least annually for degradation and dispose of as necessary.

STOP! Do not go on until ALL High Priority and ALL Routine Safety items ON ALL CARDS have been addressed and checked off!

Model Laboratory Standards

Store flammables in commercial metal flammables storage cabinets when not in use.

Secure compressed gas cylinders individually.



✓ Checklist

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

Self-Inspection Checklist

4) EMERGENCY PREPAREDNESS



High Priority Concerns

Assure that the Emergency Notification door sign information is complete and current.

Flush eye wash and shower units weekly, document on the flush calendar and assure that access to the units is unimpeded.

STOP! Do not go on until ALL High Priority Concerns ON ALL CARDS have been addressed and checked off!

Routine Safety Practices

Wear Personal Protective Equipment, including eye protection and appropriate gloves for general chemical handling (not latex), and monitor its use by laboratory workers.

Keep a complete, unopened spill kit in your laboratory and place it in a highly visible location. Replace when used.

Keep your accumulating chemical waste volumes within UVM limits (<30 gallons or <1 quart of acutely hazardous waste).

Place a sign near emergency eyewash and shower units to help maintain their visibility.

Wear only closed shoes (no sandals) at all times in the laboratory.

STOP! Do not go on until ALL High Priority and ALL Routine Safety items ON ALL CARDS have been addressed and checked off!

Model Laboratory Standards

Hang a sign near the spill kit to facilitate easy and quick access to it in an emergency.

Enforce use of required Personal Protective Equipment and appropriate footwear at all times in the laboratory.

✓ Checklist

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

Self-Inspection Checklist

5) TRAINING & DOCUMENTATION

High Priority Concerns

Create a Lab Safety Notebook that ALL workers review, with a minimum of 5 sections: Chemical

Use Planning forms, laboratory specific protocol location information, MSDS location information, training documentation (ES and laboratory specific), and a copy of your annual Hazardous Chemicals of Concern (HCOC) Inventory.

Complete these UVM Laboratory Self-Inspection Cards each month and assure that necessary corrective actions are taken promptly. Store the cards with the Lab Safety Notebook.

STOP! Do not go on until ALL High Priority Concerns ON ALL CARDS have been addressed and checked off!

Routine Safety Practices

Assure that training records are complete for all workers in the laboratory (by having them print their transcripts from <http://www.uvm.edu/esf>) and place the transcripts in the Lab Safety Notebook.

Store your Lab Safety Notebook on or near the back of the main laboratory door or place a notice there to indicate its storage location.

Laboratory-specific safety protocols are current.

Name a Laboratory Safety Officer, who has attended the ES Advanced Training for Laboratory Safety Officers.

Establish appropriate “working alone” and “unattended operations” policies for your laboratory.

Template policies available at <http://www.uvm.edu/esf/chemicalsafety/labsafetynotebook.html>.

Make sure that all laboratory workers are signed up for the UVMLABSAFE email list.

STOP! Do not go on until ALL High Priority and ALL Routine Safety items ON ALL CARDS have been addressed and checked off!

Model Laboratory Standards

Create a complete Lab Safety Notebook with all the applicable items from the Lab Safety Notebook

Template found at <http://www.uvm.edu/~esf/chemicalsafety/labsafetynotebook.html>.

Have another laboratory technician familiar with and able to perform the duties of the Laboratory Safety Officer. Name: _____.

Document laboratory specific training in the Lab Safety Notebook.

(http://www.uvm.edu/~esf/assets/lab_training_checklist.pdf)

Create and manage a chemical inventory to remove outdated and unneeded chemicals.

Place your Lab Safety Notebook in a holder visible and accessible (within arm’s reach) of your main laboratory door in case of emergency.

Schedule an annual ES consultation, allowing a 2 month lead time before it is due.



✓ Checklist

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

Self-Inspection Checklist

6) CHEMICAL WASTE HANDLING



High Priority Concerns

Assure proper disposal of all chemical waste, contaminated debris and sharps:

- Dispose of ALL (both hazardous and non-hazardous) solid and liquid chemicals through ES.
- Get written permission from ES (esf@uvm.edu) for ANY sink disposal of chemicals.
- All sharps must be placed in an appropriate sharps container.
- Exchange mercury thermometers through ChemSource. (Watch for mercury thermometers in new equipment.)

Use the yellow waste accumulation sticker and multi-part white tag to label chemical waste.

Dispose of high hazard chemicals which are undated or past the manufacturer's expiration date.

STOP! Do not go on until ALL High Priority Concerns ON ALL CARDS have been addressed and checked off!

Routine Safety Practices

Completely fill out all yellow waste accumulation container stickers.

Completely fill out chemical waste tags on containers that are ready for removal.

Notify ES to pick up waste by entering the information online at <http://www.uvm.edu/esf>.

Monitor to assure that waste is removed from your laboratory within 30 days of date on tag.

Store chemical waste properly:

- Store in cabinets, not fume hoods, with compatible stock or waste chemicals.
- Store in chemically compatible waste containers.
- Place all liquid hazardous waste in secondary containment.
- 5-gallon containers of ethidium bromide waste or contaminated silica waste are allowed to be stored on the floor providing that:
 - they are labeled with the ES "Custodians – Do Not Touch" sticker,
 - they do not block aisle spaces or emergency equipment and,
 - liquids are stored in secondary containment.

Make sure that all chemical waste labels (especially the 5-gal containers specified above) are complete and visible at all times to prevent confusion with trash.

STOP! Do not go on until ALL High Priority and ALL Routine Safety items ON ALL CARDS have been addressed and checked off!

Model Laboratory Standards

Label cabinets that contain chemical waste with the ES Chemical Waste Storage Area cabinet label.

Demonstrate that Pollution Prevention and Hazardous Waste Minimization are priorities by documenting specific practices in the Lab Safety Notebook and by sharing them with ES staff by email at esf@uvm.edu.

Self-Inspection Checklist
7) BIOSAFETY



Note: There is no high/ routine/ model laboratory priority system for the items on the biosafety checklist. Rather, there are six inspection areas specific to biosafety issues. This checklist should be used by all laboratories where biological agents are used.

The questions are based on standards described in *Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition*, published by the Centers for Disease Control and Prevention. If answers to questions in the Biosafety Level Determination are all no, work is being conducted at Biosafety Level 1, so the equipment section can be skipped.

JANUARY
 FEBRUARY
 MARCH
 APRIL
 MAY
 JUNE
 JULY
 AUGUST
 SEPTEMBER
 OCTOBER
 NOVEMBER
 DECEMBER

1) Biosafety Level Determination

Is human derived material (including established cell lines) used in the laboratory?

Are pathogens or infectious agents as described in BMBL used in the laboratory? (see table on page 52 of BMBL and click on pdf file at <http://www.cdc.gov/OD/OHS/biosfty/bmb14/bmb14toc.htm>)

Are select agents used in the laboratory? (Refer to <http://www.cdc.gov/od/sap/docs/salist.pdf> for the list of select agents).

2) Standard Microbiological Practices

Is signage posted that indicates that eating and drinking are not permitted in the work area?

Are food and drink stored outside the work area?

Are gloves removed and does hand washing occur before leaving the laboratory?

Are work surfaces decontaminated with appropriate disinfectants after any spill of viable material as well as on completion of work for the day?

Is a sharps management policy established and communicated to all laboratory workers?

Is a hand sink available?

Are laboratory floors kept clean to protect work areas from contamination?

Are bench tops impervious to water and resistant to disinfectants?

Are safe autoclave procedures provided and followed?

✓ Checklist

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

Self-Inspection Checklist

BIOSAFETY, continued.

3) Equipment (BSL 2 only)

Has the biological safety cabinet been certified within the last year?

Do vacuum lines have in-line disinfection traps (maintain a 10% bleach concentration and refresh weekly) and HEPA filters to protect the vacuum pump exhaust?

If centrifuging viable materials, are safety containment cups and sealed rotors used?

4) Training and Documentation

Have all workers in the laboratory completed UVM online BBP and classroom biosafety training?

In laboratories using human blood or body fluids, are Hepatitis B records available for all "at risk" employees?

Have all workers been made aware of the biological hazards associated with work in this laboratory?

5) Emergency Preparedness

Have appropriate biohazard signs been posted on doors opening into the work area?

Does laboratory equipment (refrigerator, incubators, etc.) have proper biohazard labeling?

Is there a post exposure protocol for any infectious agents in use?

Are biological spill procedures and spill response materials available for spill clean up response?

6) Waste Disposal

Are sharps disposed into properly labeled sharps containers?

Are there labeled biological waste containers available?

Are biowaste containers kept covered when not in use?

Are liquid biological wastes disinfected by chemical means (10% bleach) before sink disposal?

Safety Management of a Common Use Room

Common Use Rooms = Community Challenges

All users of common use rooms are reminded that they have the responsibility to follow these guidelines and monitor use of the space.

- Clean all drips and spills before you leave.
- Put away all materials.
- Label all chemicals completely and include owner's name and core lab room number.
- Do not place chemicals in red bags or autoclave chemical containing waste.
- Completely fill out this common use room card.
- Complete a monthly self-inspection using this card set.
- Maintain Lab Safety Notebook information for the common use room.
- Communicate regularly among user groups to maintain a safe working environment.

If you have questions please email ES staff at esf@uvm.edu or go to <http://www.uvm.edu/esf>.

Common Use Room: Building: _____ Room: ____ Dept.: _____

Laboratory Groups Who Are Authorized to Use this Room:

1 Principal Investigator: _____

Laboratory Safety Officer: _____ Room # _____

2 Principal Investigator: _____

Laboratory Safety Officer: _____ Room # _____

3 Principal Investigator: _____

Laboratory Safety Officer: _____ Room # _____

4 Principal Investigator: _____

Laboratory Safety Officer: _____ Room # _____

5 Principal Investigator: _____

Laboratory Safety Officer: _____ Room # _____

6 Principal Investigator: _____

Laboratory Safety Officer: _____ Room # _____

Managing a Common Use Room

Indicate Management of Monthly Self-Inspection Cards and Lab Safety Notebook

___ **Preferred method:** One person has been chosen to be the primary contact and to maintain a Lab Safety Notebook and accomplish a single monthly self-inspection using one set of "UVM Laboratory Self-Inspection Cards" for the whole room.

Name: _____

___ **Alternate method:** Each group will accomplish a monthly self-inspection for their area/s only, within the common use room by using the "UVM Laboratory Self-Inspection Cards". Lab Safety Notebook information is stored in (check one)

___ **the common use room, or**

___ **core labs.**

(If the Lab Safety Notebook information is in core labs place a notice indicating that on the common use room door.)

