UVM DARKROOM SAFETY GUIDE

"Damn. The dark is leaking out of the dark room again."

Revised March 2020

IN CASE OF EMERGENCY: DIAL 911

This booklet will provide you with the information you need in order to run a safe and legal darkroom at University of Vermont.

If you have any questions regarding this guide or darkroom safety please contact **UVM Risk Management & Safety (RMS)** by e-mail at safety@uvm.edu. RMS assists darkroom supervisors in overseeing darkroom safety on campus. The darkroom supervisor is the primary contact for information about safety training, hazardous waste removal, and any other safety concerns. RMS safety staff can provide technical advice to darkroom users.

GUIDE OVERVIEW

This guide contains valuable information that will help the photography darkroom be run safely and efficiently. Darkroom instructors are responsible to make sure all darkroom users read and understand this guide. If you have any questions regarding any of the information covered in this guide, please contact Safety staff at safety@uvm.edu. In case of an emergency (fire, serious personal injury, or a major chemical spill), call 911. If you have a non-critical building service need (e.g. UVM Physical Plant electrician, plumber, HVAC technician, etc.), call UVM Service Operations at 656-2560, press 1 to speak to a dispatcher.

BEFORE YOU USE THE DARKROOM…

TRAINING/RECORD KEEPING

All students and faculty working in a campus darkroom must, at a minimum, have online Chemical Safety and Darkroom Training before using UVM's darkroom facilities.
Go to https://www.uvm.edu/riskmanagement/train-and-inform-lab-personnel for information about safety training at UVM. In order to complete the online courses, sign in to the system at https://riskmgmt.w3.uvm.edu/courses/. Training records will be maintained online when courses are completed.

It is recommended that anyone working in a darkroom also attend these additional trainings:

- Fire Safety Training (online),
- Evacuation Procedure Training (online),
- Fire Extinguisher Hands-On Training (in-person), and
- Emergency Response for Lab Workers (in-person).

LIMIT ACCESS TO DARKROOM

Only people who have completed the online Darkroom Safety training should be allowed to perform any work in the darkroom. Maintain control of the keys to the darkroom to ensure that only approved people have access.

GENERAL SAFETY IN THE DARKROOM

SAFETY EQUIPMENT

Inventory your safety equipment before beginning work. At a minimum, the darkroom should have the following items:

- Fire extinguisher
- Spill kit(s): with signage showing their location
- Safety glasses or goggles, enough for each person using the darkroom
- Nitrile, neoprene (best for acids/bases), or other rubber gloves based on chemical hazards
- Tongs
- Hazardous waste handling & pickup information
- Darkroom Safety Guide & Laboratory Safety Manual

Eye Protection

All persons in the darkroom (including visitors) must wear safety glasses or goggles at all times, even when not working directly with chemicals. Safety goggles, not safety glasses, shall be worn whenever chemicals are being poured.

Gloves

Nitrile gloves should be worn at all times when working near chemicals. Latex gloves do not provide adequate protection. Check to ensure there are no cracks or small holes in gloves before each use. Prior to leaving the work area, gloves should be removed to prevent the spread of chemicals. Only gloves approved for the use with darkroom chemicals may be used.

Clothing

As in any chemical area, clothing in the darkroom should offer protection from splashes and spills. Clothing should be easily removable in case of accident. High-heeled, sandals, open-toed shoes, or shoes made of woven material should not be worn. Full leg coverage should also be a priority.

SAFETY DATA SHEETS (SDSs)

Safety Data Sheets (SDSs) provide specific chemical safety information for the chemicals in the darkroom. They can be found in the Lab Safety Notebook available in the lab, or online at a variety of websites. An example of a website includes, but is not limited to, the following option: http://sprintsystems.com/msds-safety/.

CHEMICAL SAFETY

CHEMICAL INVENTORY: Federal and state regulations require UVM to maintain accurate chemical inventory records. The dark room supervisor is responsible for updating what chemicals are present in the darkroom on a RMS website, https://riskmgmt.w3.uvm.edu/labs/, a minimum of every six months.

ORDER ONLY WHAT IS NEEDED

Before ordering new chemicals, review the current inventory and, if possible, use those chemicals first. Although chemicals are usually cheaper when purchased in large containers, when the actual usage, storage, and disposal are factored into the cost, the savings diminish significantly. In addition, chemicals in large containers that are not used frequently can be rendered useless over time due to contamination and/or degradation. The most important step to take is to maintain a running inventory of chemicals present in the darkroom.

HANDLING DARKROOM CHEMICALS

- ALWAYS use a water rinse between developer and stop bath.
- ALWAYS discard stop bath solutions that have been contaminated with developer.
- ALWAYS add acids to water, not water to acids.
- ALWAYS cover all baths when not in use (to control release of toxic vapors).

STORING CHEMICALS

Storing chemicals properly includes the following:

- Proper and clear labeling
  - Full chemical names
  - Initials of a responsible person
  - Date received/opened
- Proper placement of chemical containers (off the floor)
- Use of compatible secondary containment
- Segregation of incompatible chemicals based on hazard
- Containers must be closed when not in use.
- Chemicals should never be stored above eye level.

Improperly stored chemicals can result in potentially dangerous conditions:

- Release of potentially toxic vapors.
- Contamination of chemicals due to degraded containers.
- Degraded containers releasing vapors that can affect the integrity of nearby containers.
- Generation of unknown chemicals due to degraded labels

CHEMICAL WASTE DISPOSAL

All spent silver fixer is to be poured into the Silver Recovery Processing Unit, located on the floor in the darkroom. This unit is connected to the regular sink disposal drain that goes to the Burlington sewer. The filter in the silver recovery unit removes silver from the fixer and must get changed once per year, based on the current estimated amount of fixer running through it per year. Safety staff (safety@uvm.edu) coordinates the filter changing with the unit's manufacturer.

Any other old and unused chemical waste must be properly disposed through the campus Laboratory Waste Management program. For more information:
https://www.uvm.edu/riskmanagement/laboratory-chemical-waste-management

There are various state and federal penalties that can result from improper disposal of these wastes. In addition to potential citations, fines, and imprisonment, improper waste disposal can also result in national media attention and damage to the University's reputation. To this end, never pour waste down the sink without getting "Sink Disposal" approval from RMS. Current Sink Disposal approvals for the darkroom are located in the Laboratory Safety Manual.

PRACTICE GOOD HOUSEKEEPING

A clean darkroom is generally a safe darkroom. Don't let trash accumulate, clean the tabletops, and sweep the floors on a regular basis. All chemicals shall be stored and labeled appropriately. Secondary containers should be placed under all chemicals in storage. Clean up drips and spills of chemicals as they happen.

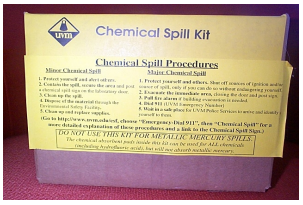
CHEMICAL ALTERNATIVES

There are less-hazardous substitutes for hazardous chemicals used in darkrooms that can be substituted satisfactorily in many cases. Where possible, use these alternatives to minimize the potential chemical exposure.

Chemical/Alternatives:

- Developer / Phenidone
- Stop Bath / Dilute solution of acetic acid (rather than concentrated acetic acid)

SPILL PROCEDURES



Contents of the Spill Kit:

- Instructions
- Chemically-inert spill pads; enough for ~1 L of liquid
- Two zip-top, 1 G plastic bags
- Nitrile gloves
- Chemical waste tags

Minor Spills → any spill less than 1 L
Use the Spill Kit provided by RMS. Begin the cleanup immediately by using the proper personal protective equipment (PPE) such as gloves, glasses/goggles, etc.

1. Use the chemical absorbent grey pads. Never use paper towels on an acid spill; the resulting chemical reaction has the potential of causing a fire.
2. Allow the spilled chemical to absorb into the grey pad.
3. Place the wet pad (and any other spill debris) into the zip-top bag.
4. Wipe down the contaminated surface with soapy water and a sponge and place all debris (gloves too) used in the zip-top bag.
5. Seal the bag and label it with a Waste Tag. Fill in the black spaces on the waste tag with the relevant information, and enter it online: https://riskmgmt.w3.uvm.edu/tags_entry/.

Major Spills → anything greater than 1 L, any spill of an unknown chemical, or a small quantity of a high hazard chemical

1. Protect yourself and others by evacuating the room. Place a sign on the door (from the Spill Kit) to ensure no one else enters the room.
2. If the spill is spreading, evacuate the floor and/or building. If necessary, pull the fire alarm.
3. From a safe place, report the spill by calling SOS (802-656-2560, ext. 1) or 911.
4. Stand by from a safe place until help arrives. Emergency personnel will need information from you regarding the spill.

When reporting a spill, be prepared with the following information:

- Where did the spill occur (building and room number)?
- What materials were involved (*spell clearly and slowly*)?
- What amount was spilled?
- Were any immediate actions taken? If so, what was done?
- How did the spill occur (if known)?
- Who first observed the spill and when?
- Are there any injuries?
- Provide a call back number (if available)