



## MDI Safety Guidelines and Principles

Your research project may be new. You may be confronted by new safety challenges that require careful thought and planning before taking any action. Carpenters always advise “measure twice, cut once.” A chemical laboratory has many known and hidden dangers, and in a shared laboratory these dangers are shared with others. **Therefore, you always need to be concerned with the safety of others as well as yourself.** Below are some simple guidelines to maximize safety and prevent injury.



### Chemical Safety

- You and other personnel have a right to work in a safe environment. You must not, by careless actions or a lack of diligence, put others at risk of injury.
- Conversely, you have the right to demand that others in the laboratory observe proper safety procedures. If you observe unsafe practices in the laboratory, ask the offending person to correct them. If this individual refuses or cannot be found, inform the MDI administrator and your advisor immediately. This is not “snitching.” You may prevent injuries by raising a concern. Most often it is simply a matter of educating or reminding, and none of us are perfect. No penalties will be levied unless an unsafe practice is repeated continually.
- You should know the properties of the chemicals with which you work. When using chemicals for the first time always consult the Safety Data Sheet using the BioRaft SDS search engine ([https://nyu.bioraft.com/raft/research\\_tools/SDS](https://nyu.bioraft.com/raft/research_tools/SDS)). You also can consult the Merck Index (there are several copies in the Brown 5 conference room). You also are encouraged to consult with more senior colleagues and your advisor, especially if you are working with something new and are uncertain about the risks. Each research group has a cognizant safety officer who can help as well. The names of the safety officers can be found on the MDI website (<https://www.nyumdi.com/safety>) and they are posted at various locations on both floors of the MDI laboratories.
- There is always risk when working with chemical agents. Some reagents – like

butyllithium, which is pyrophoric (it can burst into flames upon exposure to air) – pose an immediate safety risk. Almost all commonly used solvents are flammable, and they can cause serious health effects upon exposure, short-term or long-term. Many chemicals are acute toxins that have immediate impacts on health, such as lachrymators. Others may have invisible long-term effects, such as carcinogens, embryotoxins and teratogens. Always consult the SDS sheets on Bioraft. Assume nothing is completely safe, but with appropriate precautions you can reduce risk to a minimum.

- Solvents in open bottles and other containers can evaporate into the lab space, posing a serious safety health risk to you and others. Make sure all bottles are sealed, even inside the hood.
- When receiving a new chemical, enter it into the Bioraft inventory. Write the date on the bottle before opening with a permanent marker. Also add your name or initials.
- Adding the date and your name or initials is especially critical for ether solvents (including but not limited to diethyl ether, tetrahydrofuran), which must be tested for peroxides after six months. Test strips are available from your cognizant graduate student/postdoc safety officer or in receptacles on both floors.
- Make sure you package all the chemicals that you store in the lab properly, in closed bottles/flasks/jars, clearly labeled.
- Bottles containing acids and bases must be stored in secondary containers. Acids and bases should NEVER be stored in the same container.

### How to avoid and mitigate injuries

- **NEVER** work in the lab alone. **NEVER**.
- Ensure that your workbench and hood are not cluttered. Poor housekeeping often leads to injuries.
- **Always close hood sashes when not in use.** This is a common safety violation. You or other individuals may be injured if something explodes in the hood. Also, leaving the hood sashes open results in more energy usage.
- Always wear your lab coats when working in the laboratory.
- Always wear goggles when working in the laboratory. **Goggles, not your everyday eyeglasses**, which are not compliant with safety policy. If you need prescription goggles, the MDI will make arrangements at no cost to you. Contact the MDI administrator.
- Open-toed shoes, sandals, and shorts are prohibited in the lab, even if wearing a lab coat.
- Aisles should be free of obstacles, including reagent bottles, waste containers, stepstools, and equipment.
- Cell phone use is prohibited in the laboratory. In addition to being a distraction, you also risk contaminating your phone with unsafe chemicals.
- Cell phone use is prohibited in the corridors adjacent to the laboratory. Using your cellphone in the corridors risks colliding with colleagues who may be carrying laboratory items or chemicals.

### Waste disposal

- **Liquid waste** must be emptied into the appropriate waste containers. We have containers for organic waste, general aqueous waste, and aqueous insecticide waste.

Use funnels if necessary to avoid spillage. If you add a new chemical to a waste bottle, write the name of the chemical on the waste label.

- **Solid chemical waste** should be disposed in the container labeled "solids". Any time you add a new chemical to a waste bottle, write the name of the chemical on the waste label. **This container should not be used for glassware.**
- **Sharps:** razor blades, syringes, contaminated broken glass, pipette tips should go in the red sharps container.
- **Glass waste:** There are bins for clean glass waste, broken or intact, located on both floors of the MDI laboratory. Wash your glass waste before disposal.

**IMPORTANT:** The MDI administrator will inspect and ensure general use waste containers are disposed when full. If you think your waste is not compatible with any of these categories label the bottle containing waste with a hazardous waste label and list the chemicals it contains. Then visit [this link](#) and complete the form to have EHS pick it up. EHS schedules pickups twice a week, on Wednesday and Friday. **You are responsible for safely removing waste that is not disposed in the containers mentioned above.** You are not allowed to leave unidentified waste in the waste fume hood. At a minimum, such waste must be identified with a waste label denoting the principal hazard and the researcher's name.

Remember, proper waste disposal is not only about keeping a clean workspace. Safe waste handling reduces environmental exposure and damage, and it ensures EHS employees will be protected and safe when they handle our chemical waste.

### Other Important Issues

- Overnight reactions need to be secured properly.
- Condensers should be cooled with recirculating water, not tap water.

**Fix it!** If *you* break something, it's OK. This happens, and it means you are working. But it is imperative you arrange to have the equipment fixed. You will not be punished. It is much worse to walk away. If an item of equipment is broken, even if you are not responsible, consult the [MDI manager list](#), available on the MDI website and posted in the MDI laboratories, and notify the person responsible for that equipment item. It is important to keep all equipment in good working order.

**Clean it!** Accumulating dirty glassware is a safety and health hazard. If you have a spill and do not clean it promptly, ***you must accept responsibility for deliberately and knowingly exposing others to danger.*** ONLY YOU know the chemicals and equipment on your bench and how to **properly** and **safely** dispose of it. General use areas and equipment, including but not limited to sinks, balances, instruments, computers) are for everyone to use. You are required to remove any materials, including waste, after using these areas to ensure the health and safety of the next user. Areas around computers need to be uncluttered. Make sure you have removed all of your materials, including but not limited to notes, spectra, personal items, etc. If items are left unattended in general use area, the MDI administrator will send an Email to all personnel. **If these items are not recovered within 24 hours, they will be discarded.**

**Safety Trainings:** When you begin working in a research group, complete the lab safety

trainings on BioRaft, accessible through NYU Home. You are not allowed to work in the lab until you have completed the following training modules:

- Initial Hazardous Waste (Annual Refresher every year after)
- Initial Laboratory Safety (Annual Refresher every year after)
- Introduction to Certificate of Fitness(C-14)
- Radiation Safety Training (if applicable to lab work)
- Laser Safety Awareness Training (if applicable to lab work)

**Certificate of Fitness:** The Fire Department of New York (FDNY) requires two individuals with C-14 training in the laboratory when the laboratory is occupied. This is difficult to guarantee if only two individuals are C-14 trained. Therefore, all eligible research personnel are required to complete C-14 training. This includes EVERY graduate student, postdoc and faculty member. Contact the MDI administrator for instructions (Hafsah Khan, hk3017@nyu.edu).

**Safety Inspections.** All the research laboratories are subject to the safety inspections by internal as well as external bodies. Consequently, the MDI will schedule regular laboratory cleanings and organizations, during which laboratory operations will be paused and research personnel will contribute. **This is mandatory.** The designated safety officers will conduct inspections monthly on the first of the month, with the exception of certain protocols that need to be completed on a more regular basis (i.e. weekly eyewash check). The safety officers will rely on the Safety Inspection Checklist, but they may identify other hazards as well. You are encouraged to use the Safety Inspection Checklist as a guide to ensure the safety of your own workspace as well as general use areas.

**Instrument Use:** Prior to using any instrument, whether in the lab or in the shared instrument facility (SIF), you must schedule a training with the instrument manager (listed on the MDI manager list, on each instrument, and on the [MDI website](#)). If any issues arise while using an instrument, do not ignore them. Inform the instrument manager and/or the MDI administrator.

**Label it!** Make sure labels are securely fastened, generally with tape. Use only dark ink on the labels. **Never** put an unlabeled flask on the shelf or in the refrigerator.

**Return it!** When you need to borrow something, ASK FIRST! If the person is not available, take a few moments to write a note. If nothing else, common courtesy calls for returning what you have borrowed as soon as possible. Returning an empty chemical bottle or a piece of glassware that is less than impeccably clean- is not good enough! Tools, cuvettes, and other common equipment should be returned to their storage place immediately after use.

**Enforce good security.** Challenge people you do not know walking in the lab. Ask for identification. Don't be afraid to demand their reasons for being in the MDI. Call security if someone refuses to provide identification. **NEVER prop open doors.**

### **Lab Specific Guidelines:**

**Molecular Design Institute Safety Officers:**

Ward Lab - Alexandra Dillon [amd1101@nyu.edu](mailto:amd1101@nyu.edu)

Weck Lab – Matthew Hannigan [mdh465@nyu.edu](mailto:mdh465@nyu.edu)

Kahr Lab – Yongfan Yang [yy3000@nyu.edu](mailto:yy3000@nyu.edu)

Lee Lab – St. John Whittaker

Sacanna Lab – Terrence Hopkins [tmh8460@nyu.edu](mailto:tmh8460@nyu.edu)

**Emergency Contacts:**

Keegan Garcia, Director of Research Labs – (212) 998-7588 [kg72@nyu.edu](mailto:kg72@nyu.edu)

Research Lab Safety (RLS) – (212) 998-1420 [rls@nyu.edu](mailto:rls@nyu.edu)

Environmental Health and Safety (EHS) – (212) 998-1450 [ehs@nyu.edu](mailto:ehs@nyu.edu)

Client Services / Help Desk – (212) 998-1001

NYU Public Safety – (212) 998-2222

Poison Control – (212)-764-7667

NYC Fire Department – 911