

Lab Policy and Guidance

Effective: 01/12/2023

Version: 1.0

MIT.NANO WORKING TOGETHER POLICY

MIT.nano requires working together in two scenarios:

- At least two people are required to be in the lab for corrosive processing to be performed.
- Undergraduates must be supervised at all times by a member of their research group while working in the lab.

THE IMPORTANCE OF WORKING TOGETHER

MIT.nano's Working Together Policy establishes and describes the minimum requirements for working together in the lab. The intent of this policy and guidance is to facilitate risk-based decision making with a safety mindset, and to build a culture of working together with safety as a shared responsibility.

MIT.nano research labs contain a variety of hazards that have the potential for emergencies and risk of injury. While this policy establishes the minimum requirements for working together, we encourage researchers and staff to avoid working alone for any activity in the lab as a best practice. By working together, we can be better prepared to support each other when there is an immediate need for assistance, risk assessment, or calling emergency responders, such as the MIT.nano Emergency Response Team or MIT Police.

WORKING TOGETHER DURING HIGH-RISK CORROSIVE PROCESSING

Corrosive processing is the highest risk activity performed by researchers in MIT.nano labs. Corrosive processing is defined as activities performed while wearing advanced PPE – safety glasses, nitrile/neoprene gloves, chemical-protective apron, and a face shield. This includes working within the PPE Zone at corrosive hoods and wet benches and transporting chemicals to/from corrosive hoods and wet benches.

When assessing the hazards and risks of the activities to be done in MIT.nano labs, if the hazard cannot be eliminated or substituted for something with less potential for danger, additional hazard controls are implemented to reduce the risks to individuals in the lab. Depending on the activity and its risk profile, approaches include engineering controls (e.g., fume hoods, wet benches, gas cabinets, interlocks, automatic gas shut-offs), administrative controls (e.g., training, standard operating procedures, policies, gas monitoring, alarm notifications, staffed hours, 24/7 access qualification), and personal protective equipment (e.g., safety glasses, gloves, face shield, chemical-protective apron, respirators), or a combination of these controls.

Because of its potential for severe and life-threatening injury, at least two people are required to be in the lab for corrosive processing to be performed. This administrative control and requirement to work together applies at all times, 24/7/365.

UNDERGRADUATE RESEARCHERS

MIT.nano supports undergraduate research opportunities (UROP) in alignment with <u>UROP</u> and <u>Environment Health and Safety</u> Office (EHS) guidelines. These guidelines require UROP students to be supervised at all times while in the lab or other potentially hazardous environments. Therefore, undergraduates must be supervised at all times by a member of their research group while in MIT.nano labs.

Pls/supervisors may request permission for undergraduates to work in MIT.nano labs without such supervision, and MIT.nano will work with the Pl/supervisor to evaluate these requests. Approvals are made through a documented risk assessment with written approval, as outlined in the Institute's Working Alone Policy. Permission for a UROP to work unsupervised must be re-evaluated, in coordination with MIT.nano, every time there are changes to the UROP project (e.g., location, conditions, equipment, process).



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HIGH-RISK CORROSIVE PROCESSING - RECOMMENDATIONS & BEST PRACTICES

The Working Together Policy specifies at least two people are required to be in the lab for corrosive processing to be performed in MIT.nano labs. It is the responsibility of the person performing the high-risk work to ensure another person is present in the lab.

The following safety planning strategies will help you manage the risks of your research to meet Working Together requirements and to go beyond in building a safety-minded culture at MIT.nano.

While this guidance document focuses on corrosive processing, you may apply this guidance to enhance the safety of other aspects of your work in MIT.nano labs.

We recommend the following:

- Schedule your corrosive processing during core hours (M-F 8am-5pm) when there are more researchers, staff, and activity in the lab.
- Arrange for another person to join you for the highest risk steps of your process. For example: moving chemicals, pouring and mixing chemicals, adding samples to chemical tanks/beakers, disposing of waste, handling particularly hazardous chemicals like hydrofluoric acid (HF/BOE) and tetramethylammonium hydroxide (TMAH), and any steps with a higher risk of splash or exposure.
- Make sure people are working nearby on the same floor or in the same bay because they will be most effective if there is an urgent need for assistance.
- Ask people nearby to check in with you regularly (e.g., every 5-10 minutes).
- Discuss your work with other people in the lab, before you begin corrosive processing, to help them understand the risks and the type of help you need.
- Schedule time in advance with other researchers or staff if you need or want a dedicated person nearby for the duration of your process.
- Plan ahead. Arrange for another researcher to join you in the lab for corrosive processing outside of core hours when there is less activity in the lab.
- If you find yourself alone in the lab during corrosive processing, stop working, make safe your experiment, and reach out to other researchers or staff to join you in the lab. Label your chemicals with a *Short-Term Unattended Chemical* label until you find another person and can resume your work.
- Leverage MIT.nano staff as an additional resource. During core hours, MIT.nano staff will have an increased presence in the cleanroom through *Safety Circuit* walk-throughs of the lab. On a rotating schedule, staff will walk throughout the cleanroom with a focus on safety and are available as an additional resource for users. Safety Circuit shifts will be visible in CORAL for planning purposes.
- Engage the fume hoods and wet benches in CORAL for the awareness of lab staff and other researchers. This is especially helpful for lab staff performing Safety Circuit walk-throughs of the lab during core hours, so they can prioritize checking in with you during your process.