



## Northern California Nanotechnology Center

### Safety Policy

The Northern California Nanotechnology Center (NCNC) consists of the clean room area as well as the chemical lab (1246 Kemper). The following safety policies are required to be followed by all users of the NCNC. Violation of these safety policies may result in loss of facility access at the discretion of the NCNC Manager.

#### Requirements for Entry and Exit

EH&S Chemical Safety Training -- to prepare for working with basic chemistries, EH&S safety training certification is required for all users. The certification must be renewed annually.

Always wear safety glasses or goggles -- to prevent eye damage from spray bottle solvents, spinning resists and other hazards, always wear safety glasses or goggles in NCNC. Only safety glasses approved by the American National Safety Institute (ANSI) and meeting the ANSI Z-87.1 standard are allowed, such as those provided by NCNC. Prescription glasses are worn beneath safety eyewear. Avoid wearing contact lenses if at all possible as they have been implicated as being hazardous when in contact with chemical vapors.

Always wear pants and a lab coat in the chemical lab room (1246 Kemper) -- to prevent contaminating materials onto your exposed legs and arms, always wear pants and closed toed shoes in the chemical lab.

Full gowns must be worn before entering the cleanroom -- to prevent contaminating the cleanroom, always gown fully in cleanroom booties, boots, coveralls, hoodies/bouffant, and cleanroom gloves.

Never take cleanroom gloves out of the lab -- to prevent contaminating the outside with chemical residues, never wear cleanroom gloves out with you when leaving. Also, to follow campus-wide protocol, never wear gloves outside the lab.

Wash hands after exiting NCNC -- to mitigate exposure to PPE penetrating hazards, always wash your hands after exiting the cleanroom. This will also slow your sensitization to nitrile.



## General Safety Practices

Do not block your hearing (no loud music) -- to ensure your ability to hear alarms or lab mates in need, you are not allowed to listen to music loud enough to interfere with normal conversation. Earplugs follow a similar rule.

No running -- To prevent accidents, do not run in the cleanroom.

Guests must be research related -- all NCNC visitors must be associated with the research mission of NCNC and its membership. Family members or friends are not considered as part of research.

Use only equipment on which you have been trained -- do not use equipment or chemicals without training from a qualified superuser or from staff.

Ask permission before approaching specially gowned lab members -- to avoid contaminating others' samples or creating a dangerous situation, always ask permission to approach if someone is working while wearing chemical PPE or a face mask.

No outgassing samples in the vacuum systems -- to keep our vacuum systems clean, only put in clean dry samples that don't give off any odor. Odiferous samples can typically be made clean by baking them, or drying them overnight with a fan.

Label chemicals you bring in, and remove before a year of disuse -- to prevent accumulation of various hazardous chemicals, label all chemicals with your name and the date in which they were brought into the lab, and update the label each year you would like to continue using it. Chemicals more than a year old will be removed by the staff.

Label chemical baths -- to prevent others from dangerously mishandling our chemicals, always label your chemical processes if you leave them for even a moment ( ref. Labeling Experiments SOP).

Wash off bottles after pouring -- to prevent a slow accumulation of hazardous residues on bottles, rinse them after use and then dry them to avoid looking like a spill and frightening other users. Alternatively, if careful inspection reveals that no chemical dripped on the bottle while pouring, you can skip rinsing. ( ref. Haz Waste Management SOP).

Never leave dregs in bottles -- to prevent lab users from mistaking nearly empty bottles for rinsed clean bottles, empty and rinse clean any nearly empty bottles ( ref. Pouring and Mixing SOP).



Do not store acids with bases or organics with oxidizers -- to prevent incompatible mixtures from forming in a spill, fire or earthquake, never store acids with bases or organics with oxidizers. Though not ideal, you can store acids with oxidizers and bases with organics. Acetic acid counts as an acid.

Do not dispose of organics into sinks -- to prevent environmental damage, pour organics like acetone into a flammables spent-chemical bottle or into a solvent catch basin instead of the sink. Very small quantities of organics can be washed down the sink, such as when rinsing out the dregs of emptied bottles, dishes, and beakers.

Let extremely hot materials cool before handling -- to prevent burns and fire, if your sample exits a system at over 400°C, wait for it to cool and/or handle the sample with both thermal gloves and tweezers. Never put hot samples down on tek wipes (towels) or clean them with solvents!

### **Personal Hygiene and Safety Practices**

Wear the proper PPE -- always wear the PPE described in the applicable SOPs.

Wear UV glasses when using UV flood lamps --to avoid eye damage, only use UV flood lamps in 1241 Kemper, label the door to warn others, and always wear purpose made UV glasses when working with UV flood.

Do not use cell phones while working with chemicals -- to prevent cross-contaminating yourself and the lab, do not use cell phones while working with chemicals. It's typically best to go to the gowning area, remove your gloves beforehand, and replace them afterwards.

Watch for mechanical hazards on equipment -- Exercise caution for pinch points when using the following equipment: The Dicing Saw, Karl Suss Aligners (MA4-1, MA4-2, MA56), EVG aligner, Cannon aligners (1, 2), SVG Track Coater, Solitec Spinners (1,2), Brewer Spinner, the Dip Coater, CHA Evaporator, GCA Pattern Generator, Nannonex NIL tool, MRL Furnaces, and Dektak Profilometers (2A, 3030)

Mix acids into water -- to avoid splattering hazardous materials, always add acid to water when diluting (ref. Pouring and Mixing SOP).

Wash gloves frequently -- to prevent a slow accumulation of hazardous residues on heavy chemical gloves, wash them often and dry with Tekwipes.

Stay away from unknown chemicals -- if you see drops of liquid where there shouldn't be, exercise extreme caution as many hazardous chemicals look like water.



No food or drink in the lab -- to prevent cross contaminating your lab and your lunch, do not bring food or drink into the cleanroom.

### **Housekeeping Safety Practices**

Return Chemical Bottles -- At the end of each workday all chemicals must be placed in their assigned storage areas.

Remove Clutter -- All work areas, especially chemistry benches, must be kept clear of clutter. Unnamed or undated samples will be removed to a lost and found, and later discarded.