

Self-Audit Checklist

Building/Dept. _____

Room _____

Date _____

Principal Investigator _____

Audit Performed By _____

General instructions:

1. Complete self-audit and send to Department Safety Champion.
2. Mandatory signage can be downloaded from OLSEH website or the Department Office.
3. Personal Protective equipment must always be used when working in the laboratory. Check that students are using them.
4. Lab in-charge is responsible for laboratory safety. Lab users should be quizzed on safety rules during the audit.
5. Improper chemical segregation is a common issue. Please check the inventory of chemicals to ensure solvents, oxidizers, acids and bases are segregated.
6. All chemicals must be labelled. Labels can be downloaded from OLSEH website.
7. All chemical waste must be labelled. Labels can be downloaded from OLSEH website.
8. Gas cylinders are also often stored improperly and not tagged. Please check. Tags can be downloaded from OLSEH website
9. Exit doors, including those which open directly from lab spaces into stairwells, cannot be locked during normal business hours. Security measures are allowed after hours, with the approval of the OLSEH office.
10. Electrical cords that have frayed wires or broken insulation present significant electrical shock and fire hazards. Replace or repair an electrical cord found to be in poor condition.
11. Cover plates must be installed on all electrical outlets and switches to prevent accidental contact with electrical wires.

Type	#	Safety checkpoint	Yes	No	NA	Remarks
General	1.	Working telephone				
	2.	Emergency contacts list near telephone at eye level				
	3.	Hazard sheet is filled and current. The sheets must have been signed in the last 6 months.				
	4.	Users are wearing closed toed shoes in the lab. Some labs ask users to take off shoes. In such cases replacement shoes must be provided. No chappals.				
	5.	No evidence of food/drinks being brought inside lab. No tea/coffee cups. No lunch boxes.				
	6.	The lab should look clean and organized. No accumulated junk,				

		like cardboard boxes, trash, etc.				
	7.	Has the lab in-charge instituted an orientation program that all new users must go through to get access to the lab?				
	8.	At-least one light is connected to UPS?				
Important Note: Minimize storage of materials in laboratory premises. For example paper goods, plastic containers, materials stored in boxes and empty containers.						
Fire	9.	Two feet of unobstructed walking space around labs				
	10.	Fire extinguishers (appropriate type) in working order				
	11.	Fire extinguishers are stored at proper and visible places				
	12.	Equipment that heat up during operation have adequate ventilation				
	13.	No exposed electrical wires, broken plugs, broken switches, etc.				
	14.	Power strips are of appropriate wattage (given the load).				
	15.	Large equipment connected to earth.				
Laser	16.	High-power laser (Class 3 and above or invisible) must have warning light outside the door				
	17.	Laser safety glasses, if Class 2 laser or above.				
	18.	High-power laser (Class 3 and above or invisible lasers) must have a separate partition with floor to wall barrier				
Chemical	19.	Chemical containers are labelled properly and contain necessary information. No mystery bottles.				

	20.	Chemicals are stored in appropriate cupboards. No open shelves, no wooden (flammable) cupboards. Large amounts of solvents need exhausted cabinets.				
	21.	All chemical storage must have hazardous stickers (e.g. corrosive, oxidizer, toxic, etc)				
	22.	All chemical waste must be clearly labelled. There should be appropriate waste disposal facility for all chemicals stored in the lab. E.g. If you have acids, there must be a way to dispose acids, etc.				
	23.	Personal protective eqpt. (Glasses, gloves, aprons, shoes) must be easily accessible, not inside locked cabinets. For liquid hazards need splash goggles, not glasses. For aggressive chemicals, need thick nitrile gloves not thin examination gloves. No latex gloves. Large amounts of chemicals require face shields				
	24.	If corrosive chemicals are used, eye sprays must be nearby,				
	25.	MSDS of all hazardous chemicals are printed out and stored in a file that is easily accessible				
	26.	Acids, bases, oxidizers and solvents, are segregated, either in different cupboards or with secondary containment.				
	27.	All refrigerators used to store chemicals, must have "No food" sign. There should not				

		be any food in any fridge in any lab.				
	28.	Clearly marking on the dustbins to distinguish lab waste (hazardous) and general waste				
	29.	Chemical work can only be done in hoods with proper ventilation				
	30.	Sharps must be disposed in hard containers.				
	31.	Bio waste must be appropriately disposed. Red dustbins for soiled napkins, etc. Blood/cultures can be disposed down the drain but only after hypochlorite treatment (labs should have hypochlorite). Dead bodies must be disposed thru Bio departments.				
High-pressure	32.	Gas cylinders are properly chained to walls, either at half height or 1/3 + 2/3 height. Cylinders must be stored in a tight formation so that they cannot tip. Carts cannot be used for permanent storage.				
	33.	Unused or spare gas cylinders must have valve guards.				
	34.	All cylinders must have tags that identify the contents, status (empty/in-use/full) and person in-charge.				
	35.	All hazardous gas lines must have welded VCR connections. Highly dangerous gasses must have coax connections.				
	36.	Hazardous gas cylinders need gas cabinets.				

	37.	CVD reactors must be connected to functional exhausts.				
	38.	Any lab with hazardous gasses must have sensors to detect that gas. The sensor should be functional.				
Cryo	39.	All labs with cryo liquids must have cryo-rated personal protective equipment. Everyone needs gloves. Large amounts need face shields and aprons also.				
	40.	Cryo cylinders must have safety valves and rupture disks.				
	41.	Cryo liquids can only be handled in rated dewars or flasks.				
Electrical Hazard	42.	Cover Plates in place for outlets and switches				
	43.	No extension cords used				
	44.	Inspect AC filters periodically				
Exits	45.	Illuminated signs working				
	46.	Paths free from obstructions				
	47.	Emergency exits accessible and marked				

Additional Checklist for Chemical Storage and Handling

1. Generally, light-duty cabinet should not be used. Cabinets units should be securely anchored to the wall.
2. To avoid potential contamination, food should not be stored in refrigerators or freezers designated for chemical storage.
3. Labeling of cabinets by chemical class (e.g. flammable liquids, acids, oxidizers) is essential if chemical storage is to be segregated to avoid incompatibilities, and to identify storage areas for emergency response personnel.
4. Highly toxic gases, such as fluorine, phosgene, and many semiconductor gases, should be stored in ventilated cabinets made for this purpose. In the event of a leak or fire, the gas cabinet would contain and exhaust the gas, protecting the laboratory worker from exposure.
5. Toxic or flammable substances that are capable of becoming airborne (e.g. gases, vapors, dusts, fumes or mists) should not be used in unventilated areas. In the absence of adequate ventilation, air contaminants can build up to levels that pose health or flammability hazards.

6. Chemical containers should be clearly labeled with at least a chemical name. The manufacturer's label is best, as it usually contains a great deal of information about health and physical hazards. When a chemical is transferred from the original container, the new container should be labeled, as possible. Small containers may use other means of identification, such as a code or number system referenced to the user's lab notebook.
7. In order to avoid spillage or release of vapors, containers should be closed except when transferring.
8. For optimum performance and containment, a fume hood should have the minimum amount of chemicals or apparatus in it when in use. It is particularly important that the slots or baffles at the back of the hood are unobstructed.
9. Some chemicals may degrade certain container materials. For example, hydrofluoric is incompatible with glass. Inorganic hydroxides are best stored in polyethylene containers. Some organic solvents will soften plastic.
10. Chemicals which may react violently or emit hazardous fumes when mixed should not be stored near each other. Examples include oxidizers and flammables, acids and bases.
11. Corrosive materials can cause severe tissue damage and are particularly injurious to the eye. Storage of corrosive below eye level helps to minimize this risk.
12. Quantities of chemicals in storage should be consistent with the shortterm needs of the lab. Excessive storage should be avoided.
13. When transporting chemicals between rooms or buildings, secondary containers, such as bottle carriers, should be used. In the event the container is dropped, bumped or otherwise breaks, the contents would be contained in the bottle carrier, avoiding a spill. Bottle carriers are available in many stockrooms.
14. Some chemicals, such as ethers or other peroxide-formers, have recommended storage time limits. Chemicals stored beyond their limit date may form explosive peroxides, which may detonate when removing a cap, agitating, dropping, scraping, etc. Upon arrival, these containers should be marked with the date placed in storage and an expiration date based on manufacturer's recommendations. Many manufacturers include an expiration date on the product label.
15. To avoid difficult and potentially costly waste disposal problems, a procedure should be in place to assure all materials are labeled and unneeded chemicals disposed of properly.

List of gas cylinders and composition (add more rows if necessary)

Chemical Composition	No of cylinders
Total	

List of high-power lasers (add more rows if necessary)

Make	Wavelength	Pulsed or CW	Power of energy per pulse

Other observations/violations/comments: