Laboratory Safety Checklist Helper

Laboratory Clutter				
1.	Aisles free of clutter (ex. NO tripping hazards).	☐ **Yes**	☐ **No**	☐ **NA**
	Generally, all aisles leading to fire exits must be at least as wide as the fire exit. For example, a 36" fire door must have 36" aisles leading up to it. A hallway with 36" double doors must have 72" of clutter- free aisles maintained. Equipment and furniture must be placed to prevent any obstruction to the fire exits. Any space over 1000 square feet must have two fire exits (500 square feet if flammable liquids are present).			
2.	Bench-tops free of clutter.	☐ **Yes**	☐ **No**	☐ **NA**
	Benchtops should be used for work surfaces, not storage areas. Operations should be carried out with adequate benchspace, not squeezed in between items not in use.			
3.	Hood is free of clutter (exhaust slots are unobstructed)	☐ **Yes**	☐ **No**	☐ **NA**
	Special ventilation, such as fume hoods and slot hoods are meant to work with a free flow of air across the contaminant source to the exhaust slot. Storage of items not in use must be avoided.			
4.	Electrical units are raised when water lines are present.	☐ **Yes**	☐ **No**	☐ **NA**
	Electrical items must be elevated off of surfaces that could flood if water lines in the vicinity leaked or failed.			
5.	There are NO hazardous materials on the bench-tops or in the hood. (ex. spills, sharp objects, broken glass, etc.)	☐ **Yes**	☐ **No**	☐ **NA**
	Hazardous materials should be stored away from work areas. Only those items in use should be present on benchtops and near special ventilation.			
Gas cylinders / Tubing (water lines & vacuum lines)				
6.	All cylinders are properly secured.	☐ **Yes**	☐ **No**	☐ **NA**
	Gas cylinders must be anchored by chains, clamps or stands unless they are being moved. Cylinders should be moved secured in a cylinder hand truck.			
7.	All cylinders without regulators are capped.	☐ **Yes**	☐ **No**	☐ **NA**
	Cylinders not in current use should have the regulator removed and the cap secured.			
8.	The proper regulator is used.	☐ **Yes**	☐ **No**	☐ **NA**
	Regulators should be selected for the particular gas in use. Adapters converting one type of available regulator for another gas must be avoided. The regulator must be rated to handle the maximum pressure in the attached cylinder. The materials used in the regulator must be compatible with the gas. For example, stainless steel should be used for corrosive gas.			

9.	Proper connections / adapters are used (ex. Teflon tape)	☐ **Yes**	☐ **No**	☐ **NA**
	Generally, Teflon tape should no t be used with regulators. Adapters between cylinder and regulator must be avoided. Thread and fittings should be free of defects. The cylinder connection should be leak tested whenever the cylinder is replaced. The system should be leak tested after set- up and after any modifications			
10.	All water and vacuum lines are properly secured.	☐ **Yes**	☐ **No**	☐ **NA**
	Tie down lines that have a potential to become loose and unexpectedly spray water on to equipment or electrical items. Tie down vacuum lines			
Chemical Storage / Disposal				
11.	Chemicals are stored properly (ex. according to compatibility, NOT stored in hood)	☐ **Yes**	☐ **No**	☐ **NA**
	Very generally… Flammable chemicals should be stored away from oxidizing chemicals. Acids must be separated from caustic (basic) chemicals. Either distance or a barrier can be used for separation. Poisonous materials usually must be kept separate from acids. All chemicals must be stored and used away from any area used for eating, drinking or smoking. Chemicals with unusual properties should be stored separately from other chemicals. Storage areas should be labeled with DOT and NFPA labels (available from University Safety and Assurances)			
12	Flammable liquids are stored away from ignition sources (burners, hotplates, electrical units, etc.).	☐ **Yes**	☐ **No**	☐ **NA**
	If a container of flammable liquid failed, for any reason, would the leaking liquid contact any item that could cause ignition?			
13.	Chemicals are stored below eye- level	☐ **Yes**	☐ **No**	☐ **NA**
	If a chemical spills or leaks on a shelf, it is more likely to get into someone's eyes due the shelf height. Generally chemical should be stored closer to the floor.			
14.	Chemical waste containers are available.	☐ **Yes**	☐ **No**	☐ **NA**
	All hazardous chemicals, unless completely used up, become hazardous waste. Hazardous waste containers are available at no charge from Environmental Affairs (x4999). If a person uses hazardous chemicals, a hazardous waste container should be available.			
15.	Broken glass container is available.	☐ **Yes**	☐ **No**	☐ **NA**
	Anywhere glassware is used, a separate container labeled for broken glass disposal must be employed.			

Signs and Labels				
16.	Emergency phone numbers are listed on the door of the lab.	☐ **Yes**	☐ **No**	☐ **NA**
	Will be completed and attached during inspection. During future inspections, be sure list is still posted and find out if it needs updating.			
17.	Warning signs are listed on the door of the lab (ex. **Flammable solvents, biohazard, etc.)**	☐ **Yes**	☐ **No**	☐ **NA**
	Warning about any unusual chemical, biological or physical hazard should be prominently posted at or near all entrances. People should not have to be exposed to a hazard before they realize the hazard exists.			
18.	All chemical waste containers are labeled.	☐ **Yes**	☐ **No**	☐ **NA**
	All waste chemical containers must be labeled with the date the waste was first collected in that container, along with a general description of the waste. The predominant hazardous ingredients must be detailed on the label.			
19.	All chemical storage areas are properly labeled (ex, flammable solvents, corrosives, etc.)	☐ **Yes**	☐ **No**	☐ **NA**
	A DOT hazardous class label and an NFPA label should designate any storage area, of 1 gallon or more of a hazardous material. DOT and NFPA labels are available from University Safety and Assurances.			
20.	All experiments running in the hood are labeled.	☐ **Yes**	☐ **No**	☐ **NA**
	Any unattended experiment left in a special ventilation area (a fume hood or slot hood) should be labeled to allow emergency response personnel to identify who to contact or what to do, in case of mishap or power outage.			
Personnel Protective Equipment and Other Emergency Equipment				
21.	Safety goggles are available and are worn when work is in progress.	☐ **Yes**	☐ **No**	☐ **NA**
	When acids, caustics (basic), or other chemical or physical hazards potentially could cause injury to eyes, safety goggles must be available, and must be used throughout the area whenever the hazards are present.			
22.	Chemical protective gloves are available.	☐ **Yes**	☐ **No**	☐ **NA**
	Gloves, selected to prevent injury from the chemicals in use, must be available and worn when working with chemicals.			
All Laboratory Occupants Have Knowledge of:				
23.	Location of fire extinguishers.	☐ **Yes**	☐ **No**	☐ **NA**
	Laboratory workers, in any lab where flammable materials are present, and if			

	portable fire extinguishers are located in or near the lab, must be trained to use a fire extinguisher. University Safety and Assurances provides fire extinguisher training opportunities every summer and upon request.			
24.	Location and operation of emergency showers and eye-wash fountains	☐ **Yes**	☐ **No**	☐ **NA**
	When acids, caustics (basic), or other chemical hazards could potentially cause injury to eyes or skin, emergency showers and eye-wash units must be provided. Workers in the area must be trained on the use and limitations of this equipment. University Safety and Assurances can show supervisor how to conduct effective hands-on training on emergency eye-wash and safety shower equipment.			
25.	Location of MSDS for the chemicals used in the lab.	☐ **Yes**	☐ **No**	☐ **NA**
	Laboratory workers must be able to identify where the Material Safety Data Sheets for the chemicals in the lab are kept. Workers should know how to access the MSDSs and have a general knowledge of what kinds of information is available on the MSDSs.			
26.	A current inventory of all chemicals used in the lab is available.	☐ **Yes**	☐ **No**	☐ **NA**
	All hazardous materials must be listed on an inventory associated with the MSDS collection. The chemical supplier, manufacturer or distributor should accompany the chemical name. DOT hazard class and NFPA ratings for all hazardous chemicals should also be included in the inventory. This information is generally available on the MSDS and chemical container label, or on the shipping container in which the chemical was received.			
27.	A chemical spill kit is available.	☐ **Yes**	☐ **No**	☐ **NA**
	Preparations must be made to be able to clean up chemicals that have the potential to spill in the lab. Specialty chemicals that require special spill clean up procedures should be so designated. If outside assistance is anticipated for spill cleanup of any chemical (example: mercury), prominently posted signs should reflect this information.			
28.	All Sources of hazardous emissions in the hood are at least 6” inside.	☐ **Yes**	☐ **No**	☐ **NA**
	All specialty ventilation has a limited zone of control, within which air contaminants will be captured. For fume hoods, the zone is the entire hood, 6 inches back of the opening. For slot hoods, the capture zone should be determined by periodic testing. The area protected by the hood should be somehow designated (painted lines or areas, for example).			
29.	All vacuum pumps are properly vented.	☐ **Yes**	☐ **No**	☐ **NA**
	When vacuum pumps are used to evacuate atmospheres containing hazardous chemicals, the exhaust from the pump must be discharged outside, directly, or by using specialty ventilation.			
30.	Flammable/Combustible liquids DO NOT exceed department storage limits.	☐ **Yes**	☐ **No**	☐ **NA**
	No more than 1 gallon of flammable liquid is stored in a container (2 gallons in a safety can). No more than 10 gallons of flammable liquids are stored in a single fire area (25 gallons in safety cans or flammable storage cabinets). No more than 60 gallons of combustible liquids should be stored in a single fire area.			

	Flammable liquids have a flash point below 141oF, such as gasoline, acetone, and alcohols, toluene, xylene, thinners and naphtha. Combustible liquids have a flash point above 141oF, such as fuel oils, latex paint, linseed oil). Check the MSDS for the specific product to determine the true flash point.			
Mechanical Safety				
31.	All machines are guarded properly to prevent injury.	☐ **Yes**	☐ **No**	☐ **NA**
	All pulleys, belts, chains, pinchpoints, and other moving parts that represent injury potential are guarded. Depending on the severity of the potential hazards, the guards may need to be interlocked with a kill switch. If the guard is removed, the unit will not energize.			
32.	Warning sign appropriate notify people of potential hazards	☐ **Yes**	☐ **No**	☐ **NA**
	Any special hazard that is not immediately obvious should be pointed out via signs, especially and established or on- going operation were the hazard can not be engineered out or controlled.			
Electrical Safety				
33.	All electrical wiring is free of fraying	☐ **Yes**	☐ **No**	☐ **NA**
	Electrical cords should not show signs of wear or breakage.			
34.	All electrical devices should be grounded	☐ **Yes**	☐ **No**	☐ **NA**
	Three prong plugs should be used for all electrical items, except double insulated tools.			
35.	Extension cords are NOT used for permanent wiring	☐ **Yes**	☐ **No**	☐ **NA**
	Any fixed or permanent equipment should be hard wired into the power system. If the unit must be unpluggable the outlet should be within reach without an extension cord. Computer systems may use an outlet bar to provide additional line current surge protection.			
36.	Controls that turn equipment on and off are labeled	☐ **Yes**	☐ **No**	☐ **NA**
	Both On and Off positions are identified. The equipment that is controlled by the switch is obvious, or the label includes the identification of the controlled equipment.			
37.	Exclusion zones are clearly marked and identified	☐ **Yes**	☐ **No**	☐ **NA**

ALSO, to be added to each page of the inspection sheet:	
	Room: Date: Professor in Charge:
	Checked by: (Name of Auditor)
	Recommended time until next audit: 1 month 3 months 6 months 1 year