University of Nebraska Lincoln

Safe Operating Procedure

(Revised 8/09)

SAFETY AUDIT GUIDELINES FOR CHEMICAL LABORATORIES

(For assistance, please contact EHS at (402) 472-4925, or visit our web site at http://ehs.unl.edu/)

Safety audits represent one of the most important elements in the implementation of an effective occupational health and safety program. The importance of auditing is underscored in UNL's Injury and Illness Prevention Plan, which requires supervisors to conduct regular work area safety inspections. The benefits and purposes of conducting work area surveys are listed below:

- Identify uncontrolled hazardous conditions, processes, and work practices that may lead to injury, illness, or prohibited releases to the environment.
- Serve as a communication tool by which responsible individuals are made aware of the potentially hazardous processes, conditions, or work practices and appropriate control measures.
- Identify regulatory risk by assessing compliance with various regulatory standards.

The checklist and information provided below is not meant to cover every possible hazard that may exist in a laboratory, but rather as abridged guideline to assess hazardous conditions and operations common to laboratories. Add additional inspection items as appropriate, based on past inspections, accident or near miss analysis, unique facility/equipment attributes, etc.

Problems? (Yes/No)	Inspection Item
General Electrical Safety	
	Power strips, extension cords, or multi-plug adapters are plugged directly into a permanently installed electrical outlet (not each other).
	Extension cords are used only for temporary applications.
	Electrical cords are protected from damage and are in good repair (no loose plugs, broken insulation, etc.).
	Unused openings in electrical cabinets, boxes, and fittings are closed with appropriate covers, plugs, or plates and outlet face plates are present and in good condition.
	Equipment and/or outlets are enclosed to protect against shock or electrocution.
	Ground Fault Circuit Interrupters (GFCI) are installed on outlets/circuits in damp/wet locations (e.g., near sinks and in "wash down" locations).
	Electrical appliances are UL or FM approved and have not been altered in a manner that compromises the UL or FM approval.
	Three feet of clearance is maintained in front of electrical panels and breaker boxes; emergency shut-off controls to equipment are accessible.
Compressed Gas Cylinders	
	Toxic, corrosive, and pyrophoric gases are used and stored only in a fume hood or manufactured gas cabinet, as appropriate.
	Compressed gas cylinders are properly restrained.
	Tubing, regulators, and other ancillary compressed gas cylinder equipment are in good condition and appropriate for the intended use (e.g., correct regulators, compression fittings for high pressure, etc.).
	Gas cylinders are labeled and the label is legible.

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Ventilated Cabinets	
	Ventilated cabinet certification is current (< 1 year) and prominently displayed.
	Cabinet is appropriate for the use.
	Cabinet is used in a manner that does not compromise its capture efficiency (e.g., blocked baffles, overcrowding, user alterations in structure, etc.).
	Cabinet is emptied of chemicals and shut-off when not in use.
Chemical Safety	
	Laboratory door placard is present, legible, and accurate.
	Accurate list of hazardous chemicals used or stored in the area is available and readily accessible.
	Employees are aware of the procedures for accessing Material Safety Data Sheets for hazardous chemicals used or stored in the area.
	Chemicals are stored by compatibility, in a safe manner, and quantities do not exceed prescribed limits.
	Food and drink for human consumption are not stored or consumed in the laboratory.
	Fire extinguishers are present, fully charged, accessible, of the appropriate type/class, and have been inspected within the past year.
	An emergency shower and eyewash are immediately available, accessible, and operable.
	An adequately stocked chemical spill kit is available.
Exposure Controls	
	Personal protective equipment is available, accessible, and appropriate for the operation(s) conducted.
	Sharps are properly managed.
	Engineering controls are appropriate for the operation conducted and operable.
	Administrative controls (e.g., procedures, practices, training) are available and appropriate for the operation conducted.
Regulated Waste Management	
	Waste containers are appropriately labeled (chemical name and indication of whether used/spent).
	Collection containers are in good condition and/or compatible with the contents.
	Collection containers are closed.
	Volumes of waste in storage do not exceed satellite accumulation limits (55 gallon or one quart of P-listed material).
	Waste is stored in the same room where it is generated while awaiting EHS pickup.
	There is no evidence of improper disposal (e.g., trash, drain, evaporation, etc.).
	Unused chemicals that are inherently waste-like are not present (e.g., unlabeled/ unknown/ unwanted, etc.).
	Radioactive materials are stored in a container identified with the name of the isotope, the radiation trefoil symbol, and the words “Radioactive Material.”
	Spent fluorescent lamps are contained in a sealed box, labeled as “Universal Waste Lamps,” and dated with a date less than 6 months old.
Miscellaneous	
	Items are not placed/stored within 18” of a sprinkler head.
	Doors are kept closed while potentially hazardous laboratory operations are in process (e.g., generation of fumes/vapors, use of flammable materials, etc.).
	Aisles, exits, and/or stairwells are maintained free of obstructions or tripping hazards.
	Furnishings and/or equipment is/are stable, designed for the intended load, and used/secured in a manner to prevent injury.
Additional Items	