

# **DETAILED LAB SAFETY CHECKLIST**



The Environmental, Health, Safety and Risk Management Office has developed this form to document audits of university labs. It will be used to identify non-compliant areas and inform faculty and staff of potential laboratory hazards and corrective measures.

	Y	N	N/A Comments
<b>SAFETY PROGRAM ADMINISTRATION</b>			
<b>Chemical Hygiene Plan</b>			
<ul style="list-style-type: none"> <li>Have all departments and research labs reviewed the Chemical hygiene plan?</li> </ul>			
<ul style="list-style-type: none"> <li>Are there any operations that require prior approval before beginning? (ex., Radiation Safety, Bio-safety committee)</li> </ul>			
<b>Standard Operating Procedures (SOP's)</b>			
<ul style="list-style-type: none"> <li>Are there written SOPs covering the basic laboratory safety and hygiene practices? Check last review date</li> </ul>			
<ul style="list-style-type: none"> <li>Is there a procedure for identifying particularly hazardous substances used in the lab? Do they have a department specific written procedure? Check last review date.</li> </ul>			
<ul style="list-style-type: none"> <li>Training of laboratory personnel documented.</li> </ul>			
<ul style="list-style-type: none"> <li>Director/PI has written training plan for his/her lab</li> </ul>			
<ul style="list-style-type: none"> <li>Training is current with Chemical Hygiene Plan &amp; Hazard Communication Standard</li> </ul>			
<ul style="list-style-type: none"> <li>Training is complete on Hazardous waste management (if applicable)</li> </ul>			
<ul style="list-style-type: none"> <li>Training is complete on Blood borne Pathogen requirements (if applicable)</li> </ul>			
<b>HAZARDOUS MATERIALS</b>			
<ul style="list-style-type: none"> <li>Laboratory doors are labeled with emergency contact notification names &amp; numbers, hazards present &amp; necessary precautions</li> </ul>			
<ul style="list-style-type: none"> <li>Labels are clean and legible on all containers</li> </ul>			
<ul style="list-style-type: none"> <li>Contents of stock solution buffer bottles are clearly identified (no laboratory abbreviations)</li> </ul>			
<ul style="list-style-type: none"> <li>Synthesized, unnamed chemical compounds are labeled by their reactants and possible products or by a useful generic description ( not by chemical structure only)</li> </ul>			
<ul style="list-style-type: none"> <li>Containers with non-hazardous substances (i.e., water) clearly labeled to avoid confusion</li> </ul>			
<b>Chemical Controls</b>			
<ul style="list-style-type: none"> <li>Chemicals are not stored on laboratory benches in excessive quantities</li> </ul>			
<ul style="list-style-type: none"> <li>Expired or chemicals not used (for more than one year) are disposed of as hazardous waste</li> </ul>			

	Y	N	N/A Comments
<ul style="list-style-type: none"> <li>Defined area for highly toxic or carcinogens clearly marked</li> </ul>			
<ul style="list-style-type: none"> <li>Secondary containment is provided for liquid chemicals</li> </ul>			
<ul style="list-style-type: none"> <li>No hazardous materials are stored in, around under or above sinks</li> </ul>			
<ul style="list-style-type: none"> <li>Incompatible chemicals are segregated and stored in compatible hazard classes.</li> </ul>			
<ul style="list-style-type: none"> <li>All chemical containers are closed, except when actively adding or removing materials from them (i.e., no open funnels left in container)</li> </ul>			
<ul style="list-style-type: none"> <li>Containers of peroxide-forming chemicals are dated upon receipt and disposed of as hazardous waste (see Appendix B-Chemical Hygiene Plan)</li> </ul>			
<ul style="list-style-type: none"> <li>Safety Data Sheets (SDSs) and laboratory chemical inventory are up-to-date and readily available</li> </ul>			
<ul style="list-style-type: none"> <li>Chemicals (liquids) are stored below eye level and not directly on the floor</li> </ul>			
<b>Flammable &amp; Combustible Liquids</b>			
<ul style="list-style-type: none"> <li>Quantities of Class 1A liquids are stored in the lab?</li> </ul>			
<ul style="list-style-type: none"> <li>If there are more than 10 gallons of flammable liquids, does the lab have the necessary fire protection systems available?</li> </ul>			
<ul style="list-style-type: none"> <li>How many flammable liquid storage cabinets are in the room and what is the capacity of each?</li> </ul>			
<ul style="list-style-type: none"> <li>Does the content of the storage cabinet exceed the maximum capacity of the cabinet?</li> </ul>			
<ul style="list-style-type: none"> <li>Flammable liquids (including flammable liquid waste) stored outside of a storage cabinet does not exceed 10 gallons?</li> </ul>			
<ul style="list-style-type: none"> <li>No flammable liquid storage cabinet are in the hallway</li> </ul>			
<ul style="list-style-type: none"> <li>Flammables are not dispensed from gravity-fed or bottom dispensing containers—use lid mounted pumps (including 5% Ethanol solutions)</li> </ul>			
<ul style="list-style-type: none"> <li>Flammables are not stored in combustible containers</li> </ul>			
<ul style="list-style-type: none"> <li>Ether and other highly flammable liquids are used away from sources of heat and ignition (including Bunsen burners in hoods and gas water heaters)</li> </ul>			
<ul style="list-style-type: none"> <li>Flammable storage cabinets vented at bottom and door locked when not being accessed</li> </ul>			

	Y	N	N/A Comments
<b>Acutely Hazardous Substances</b>			
• Have all acutely hazardous substances been identified?			
• Is a current inventory available with appropriate SDS information?			
• Are areas or hoods where these substances are in use posted with a designated hazard sign?			
• Have special procedures for these substances been identified?			
• Are special procedures in practice? Verify procedures.			
• Are all users adequately trained? Documentation available			
• All compressed gas cylinders secured with cap in place, if not in use. Eight tank limit for non-flammable gases & five tank limit for flammable gases.			
• All necessary PPE (personal protective equipment) available and used as needed.			
<b>Radioactive Materials</b>			
• Stock materials of radioactive materials are secured against unauthorized removal?			
• Do personnel wear lab coats, gloves and radiation dosimeters when handling materials?			
• Are all labs using radioactive materials registered with the Radiation Safety Officer?			
<b>Chemical Waste Storage</b>			
• Have all chemical waste streams been identified as non-hazardous or hazardous and constituents been completely identified?			
• Specific storage containers provided for: ( ) chemical waste      ( ) recyclable solvents ( ) radioactive waste    ( ) sharps			
• All hazardous chemical waste is arranged to be picked up by Environmental Health & Safety - not drain disposed or evaporated			
• All hazardous chemical waste is secondary contained.			
• Solutions with heavy metals are collected separately and disposed of as hazardous waste			
• The satellite hazardous waste accumulation storage area is clearly labeled			
• Hazardous waste handling training is documented?			

	Y	N	N/A Comments
<ul style="list-style-type: none"> <li>The Safety &amp; Environmental Compliance Department is called for waste pick up when jugs are ¾ full</li> </ul>			
<ul style="list-style-type: none"> <li>Waste containers sturdy, compatible with the waste, routinely checked for leaks and kept closed when not be filled.</li> </ul>			
<ul style="list-style-type: none"> <li>Waste is segregated by compatible storage groups</li> </ul>			
<ul style="list-style-type: none"> <li>Are there any non-hazardous chemicals that are drain disposed? If so, what are they?</li> </ul>			
<b>Labeling</b>			
<ul style="list-style-type: none"> <li>All hazardous waste containers have the proper labels with the full chemical name or a list of full name and a percentage of each when waste mixtures are involved.</li> </ul>			
<ul style="list-style-type: none"> <li>The satellite accumulation area is clean with waste containers clearly marked, secondary contained and safety stored</li> </ul>			
<ul style="list-style-type: none"> <li>Synthesized, unnamed chemicals (including experimental drugs and chemicals) are labeled by their reactants and possible products or a useful generic description and possible hazardous. Do not label with chemical formulas only.</li> </ul>			
<b>BIOHAZARDOUS WASTE</b>			
<b>Storage</b>			
<ul style="list-style-type: none"> <li>Solid biohazardous waste is bagged in 2 mil polyethylene bags as per the Biological Safety Plan</li> </ul>			
<ul style="list-style-type: none"> <li>Biohazardous liquid waste is either chemically treated with disinfectant, when generated, or directly afterwards or autoclaved.</li> </ul>			
<ul style="list-style-type: none"> <li>All waste is properly segregated as per the Biological Safety Plan</li> </ul>			
<b>Labeling</b>			
<ul style="list-style-type: none"> <li>Transport container labels are filled out with the date, name of the generator and the name of the waste processor</li> </ul>			
<ul style="list-style-type: none"> <li>Do the containers meet DOT and ADEM standards?</li> </ul>			
<b>Treatment</b>			
<ul style="list-style-type: none"> <li>Written notebook log kept for autoclaved materials</li> </ul>			
<ul style="list-style-type: none"> <li>Log of autoclave validation runs includes: date, time, duration of run, pressure, temperature and number of ampoules included in waste treatment validation run</li> </ul>			

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<ul style="list-style-type: none"> <li>Animal carcasses are properly bagged and labeled before being placed in designated freezers. Freezers are labeled?</li> </ul>			
<ul style="list-style-type: none"> <li>Non-hazardous animal bedding is double bagged and disposed of properly</li> </ul>			
<ul style="list-style-type: none"> <li>Bio-hazardous animal bedding is bagged, autoclaved (when necessary) and transported to the incinerator</li> </ul>			
<ul style="list-style-type: none"> <li><b>All</b> potentially infectious/contaminated sharps are placed in red, rigid plastic sharps containers</li> </ul>			
<ul style="list-style-type: none"> <li>When the sharps container is <math>\frac{3}{4}</math> full it is sealed and placed in container for transport to disposal facility. Container must have appropriate packing and labeling</li> </ul>			
<ul style="list-style-type: none"> <li>All work surfaces are cleaned with a disinfectant solution that is active against the organisms in use. Clean and soiled storage areas must be separate. Procedures for cleaning and frequency must be defined. Verify procedure against practice</li> </ul>			
<b>PERSONAL HEALTH AND SAFETY</b>			
<b>Food and Drink</b>			
<ul style="list-style-type: none"> <li>Food and drink is not permitted in laboratories</li> </ul>			
<ul style="list-style-type: none"> <li>Food and drink is stored only in refrigerators/freezers dedicated and labeled "for food only"</li> </ul>			
<b>Standard Practices</b>			
<ul style="list-style-type: none"> <li>Employees wash areas of exposed skin prior to leaving the laboratory</li> </ul>			
<ul style="list-style-type: none"> <li>Hands must be washed after removing gloves and before leaving laboratory</li> </ul>			
<ul style="list-style-type: none"> <li>Hands must be kept away from face while working in the laboratory area. No cosmetic applications, taking medication, touching eyes, nose or mouth</li> </ul>			
<b>HEALTH AND SAFETY EQUIPMENT</b>			
<b>Safety Showers and Eye Washes</b>			
<ul style="list-style-type: none"> <li>Approved safety showers and eye washes provided within 10 seconds travel time from the work area for immediate use.</li> </ul>			
<ul style="list-style-type: none"> <li>All eye washes and showers have unobstructed access</li> </ul>			
<ul style="list-style-type: none"> <li>Units inspected monthly by the department and annually by Maintenance for proper functioning.</li> </ul>			
<ul style="list-style-type: none"> <li>Sign indicating location of safety shower and eye wash unobstructed.</li> </ul>			

	Y	N	N/A Comments
<b>Personal Protective Equipment</b>			
<ul style="list-style-type: none"> <li>Has the correct PPE been selected based on a hazard analysis or manufacturer's recommendation?</li> </ul>			
<ul style="list-style-type: none"> <li>PPE required for lab work: ( ) Hearing protection, ( ) Safety glasses with side shields/goggles, ( ) Lab Coats, ( ) Face Shield, ( ) Proper foot-wear, ( ) Gloves, ( ) PPE for Radiological work, ( ) Aprons</li> </ul>			
<ul style="list-style-type: none"> <li>All necessary equipment is available, in good condition, and properly used.</li> </ul>			
<b>Laboratory Fume Hoods</b>			
<ul style="list-style-type: none"> <li>Storage inside of hood is kept to a minimum</li> </ul>			
<ul style="list-style-type: none"> <li>Equipment in use does not interfere with proper functioning of the hood</li> </ul>			
<ul style="list-style-type: none"> <li>All work is done at least 6 inches inside hood</li> </ul>			
<ul style="list-style-type: none"> <li>Front sash is lowered below chin level when hood is in use</li> </ul>			
<ul style="list-style-type: none"> <li>Certified within the last year (check certification located on front or side of hood)</li> </ul>			
<ul style="list-style-type: none"> <li>Hood has continuous flow monitor</li> </ul>			
<ul style="list-style-type: none"> <li>The back ventilation slot is open at least 2 inches</li> </ul>			
<ul style="list-style-type: none"> <li>Drains are protected from hazardous materials entering</li> </ul>			
<b>Biological Safety Cabinet</b> (i.e., Laminar flow hoods)			
<ul style="list-style-type: none"> <li>Certified within the last year (check certification located on front or side of hood)</li> </ul>			
<ul style="list-style-type: none"> <li>Proper type of hood for work being conducted</li> </ul>			
<ul style="list-style-type: none"> <li>Equipment is properly labeled for the hazard present (radiation, UV,,) Manufacturer approved for hazard.</li> </ul>			
<ul style="list-style-type: none"> <li>Hood ducted per manufacturers and ASHRA requirements and meet the CDC/NIH bio-safety specifications</li> </ul>			
<b>Compressed Gas Cylinders</b>			
<ul style="list-style-type: none"> <li>Cylinders stored in well protected, well vented and dry locations away from combustible materials</li> </ul>			
<ul style="list-style-type: none"> <li>Storage space is secured from damage either by passing or falling objects or subject to tampering by unauthorized persons.</li> </ul>			
<ul style="list-style-type: none"> <li>Cylinders are secured to a rigid structural component of the building with chains located 2/3 the height of the cylinder</li> </ul>			

	Y	N	N/A Comments
<ul style="list-style-type: none"> <li>Protective caps in place while cylinders are in storage</li> </ul>			
<ul style="list-style-type: none"> <li>Proper regulators are being used and closed when cylinders are not in use</li> </ul>			
<b>Air Pollution Control Equipment</b>			
<ul style="list-style-type: none"> <li>Are there any sources of air emissions other than chemicals being used in the hood?</li> </ul>			
<ul style="list-style-type: none"> <li>Is there any air pollution control equipment (vapor recovery systems, cyclones, scrubbers, bag houses, electrostatic precipitators) in use?</li> </ul>			
<ul style="list-style-type: none"> <li>If so, are they maintained and maintenance records kept?</li> </ul>			
<b>Housekeeping &amp; Miscellaneous Laboratory Safety</b>			
<ul style="list-style-type: none"> <li>Bench tops clean, organized and environs maintained to eliminate harmful exposures or unsafe conditions</li> </ul>			
<ul style="list-style-type: none"> <li>Areas under sinks, window ledges, walls and floors kept orderly, Supplies stored at minimum 6 inches off floor or 18 inches from ceiling</li> </ul>			
<ul style="list-style-type: none"> <li>Vacuum lines equipped with traps designed specifically to accumulate/filter the hazardous materials being evacuated. If lab BL-3 or higher, does affluent receive heat or chemical treatment prior to disposal</li> </ul>			
<ul style="list-style-type: none"> <li>All moving machinery (i.e., vacuum pumps) belts adequately protected by a rigid belt guard or housing</li> </ul>			
<ul style="list-style-type: none"> <li>All sharps disposed properly</li> </ul>			
<ul style="list-style-type: none"> <li>The condition of the broken glass box is adequate and placed out of harms way. Box identified as to contents?</li> </ul>			
<b>Electrical Safety</b>			
<ul style="list-style-type: none"> <li>High voltage equipment (&gt;600V) labeled, grounded and insulated</li> </ul>			
<ul style="list-style-type: none"> <li>No equipment has damaged or frayed cords</li> </ul>			
<ul style="list-style-type: none"> <li>Extension cords and power are not chained together</li> </ul>			
<ul style="list-style-type: none"> <li>Multiple adaptors used only if they are equipped with circuit breakers</li> </ul>			
<ul style="list-style-type: none"> <li>All equipment is grounded via 3-prong plugs</li> </ul>			
<ul style="list-style-type: none"> <li>Plug covers are intact and secure</li> </ul>			
<ul style="list-style-type: none"> <li>Hot plates and heaters are out of harm's way and monitored</li> </ul>			
<ul style="list-style-type: none"> <li>Space heaters are not permitted in laboratory.</li> </ul>			



	Y	N	N/A Comments
<b>Basic Safety</b>			
<ul style="list-style-type: none"> <li>• Chemical shelves have lips or other type of restraint. Oxidizers are stored on wooden shelves and separated from other chemicals</li> </ul>			
<ul style="list-style-type: none"> <li>• Cabinets and bookshelves are secured to the wall</li> </ul>			
<ul style="list-style-type: none"> <li>• Overhead storage is minimized and restrained from falling</li> </ul>			
<ul style="list-style-type: none"> <li>• Heavy equipment is secured or braced from falling</li> </ul>			
<b>Respiratory Protection</b>			
<ul style="list-style-type: none"> <li>• Use of respiratory protection conforms to USA guidelines</li> </ul>			
<ul style="list-style-type: none"> <li>• Respirators are inspected monthly and before any use</li> </ul>			
<ul style="list-style-type: none"> <li>• The user has been fit tested by the EHSRM representative (i.e., W. Texas Rehab)</li> </ul>			
<ul style="list-style-type: none"> <li>• Cartridges are changed on designated schedule and are the appropriate cartridge for the hazard</li> </ul>			
<b>Laser Safety</b>			
<ul style="list-style-type: none"> <li>• Does the lab use any Class 3b or 4 lasers?</li> </ul>			
<ul style="list-style-type: none"> <li>• Are the lasers registered with the Radiation Safety Officer?</li> </ul>			
<ul style="list-style-type: none"> <li>• Are the Standard Precautions for lasers prominently posted for each laser?</li> </ul>			
<ul style="list-style-type: none"> <li>• Are appropriate warning signs and labels posted?</li> </ul>			
<ul style="list-style-type: none"> <li>• Does the lab entrance have a warning light or lighted sign showing when the laser is in use?</li> </ul>			
<ul style="list-style-type: none"> <li>• Have all workers been trained by the Laser Safety Officer?</li> </ul>			
<ul style="list-style-type: none"> <li>• Does the lab have appropriate laser eyewear and has this been verified by the Radiation Safety Officer</li> </ul>			
<b>Non-Ionizing Radiation (NIR) Source</b>			
<ul style="list-style-type: none"> <li>• Have proper warning signs been posted?</li> </ul>			
<b>Emergency Planning &amp; Procedures</b>			
<ul style="list-style-type: none"> <li>• "In Case of Emergency" or "Emergency Instructions" visibly posted and current</li> </ul>			
<ul style="list-style-type: none"> <li>• Chemical spill kit/cleanup materials provided (if required by departmental plan)</li> </ul>			
<ul style="list-style-type: none"> <li>• Training in spill clean-up procedures provided and documented (only if spill clean-up materials are provided)</li> </ul>			

	Y	N	N/A Comments
<ul style="list-style-type: none"> <li>• First aid materials kept in adequate supply (in a sanitary and usable condition) and made readily available (if applicable)</li> </ul>			
<b>Fire Prevention</b>			
<ul style="list-style-type: none"> <li>• Appropriate fire extinguisher mounted, unobstructed, available with 75 feet, in working order and inspected within the last year—check tag on extinguisher</li> </ul>			
<ul style="list-style-type: none"> <li>• Fire extinguisher sign is clearly visible</li> </ul>			
<ul style="list-style-type: none"> <li>• Fire blankets, labeled and unobstructed, if available</li> </ul>			
<ul style="list-style-type: none"> <li>• 18-inch vertical clearance maintained from sprinkler head (i.e., over shelving)</li> </ul>			
<ul style="list-style-type: none"> <li>• Are all lab doors kept closed? Closure devices in place?</li> </ul>			
<ul style="list-style-type: none"> <li>• Storage of combustible material is minimized</li> </ul>			
<b>Exits &amp; Width of Exits</b>			
<ul style="list-style-type: none"> <li>• Exits and aisles are clear and free of obstructions in case of emergency</li> </ul>			
<ul style="list-style-type: none"> <li>• Exit signs clearly visible</li> </ul>			
<ul style="list-style-type: none"> <li>• Width of exit aisles and pathways within laboratory no less than 44 inches</li> </ul>			