

## Research Laboratory Safety Self-Inspection: Chemical & Physical Safety Checklists

<b>Principal Investigator:</b>	<b>Department:</b>
<b>Lab Building:</b>	<b>Inspector Name:</b>
<b>Lab Rooms:</b>	<b>Inspection Date:</b>

Question	Y	N	NA	Comments or Deficiencies <small>* Indicate room where deficiency is identified</small>
<b>⚠ Chemical and Physical Safety</b>				
Is Chemical Hygiene Plan available, reviewed, signed and all appendices attached?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is EH&S General Lab Safety training completed and documented for all current lab personnel?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is lab-specific training provided and documented for lab personnel?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is EH&S Hazardous Waste Training completed, current and documented for all lab personnel?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is a chemical inventory complete, updated and accessible?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is safety data sheet (SDS) for each chemical available, current, organized and accessible?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is eyewash available within 50 ft or 10 seconds travel, functional, maintained and maintenance checks documented?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is safety shower available within 50 ft or 10 seconds travel, functional, maintained and maintenance checks documented?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is path to the eyewash and safety shower clear and free of obstruction?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is a fully-stocked spill kit available and current?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Is a fully-stocked first-aid kit available and current?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are appropriate hand protection available and in good condition for specific hazardous materials handled in the lab? (e.g., latex, nitrile, leather, cryogen, autoclave)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are appropriate eye and face protection available and in good condition for specific hazardous materials handled in the lab? (e.g., safety glasses, safety goggles, face shield, UV shield)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is splash apron available and in good condition for handling corrosives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are lab coats available and in good condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are PPEs used appropriately according to hazards used and/or stored in the laboratory and according to USC PPE policy?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is appropriate ear protection available for protection against unusually loud equipments and/or procedures?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
If a respirator/s is/are present in the lab, are lab personnel medically cleared and fit tested to use the respirators?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is laboratory free of any sign of release of chemical contaminant?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is a chemical fume hood available for use of volatile flammable and/or inhalation hazards?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>Fume Hoods</b>				
Is fume hood certified by EH&S within the last 12 months or after a recent repair?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is fume hood airflow within 80-150 lfm?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is fume hood free of stored unnecessary items?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is fume hood sash clear and in good condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are fume hood side panels intact?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is fume hood airfoil and baffle openings free of obstruction?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is fume hood lighting in good working condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is fume hood alarm, if present, in good working condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is proper fume hood sash height adjusted based on fume hood use or status?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Is fume hood work surface clean and free of chemical spill?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>Benchtop, Non-ducted</b>				
Is fume hood certified and maintained?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>Routine Chemicals</b>				
Are chemicals segregated based on compatibility?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are hazardous chemicals stored below shoulder level but not on the floor?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are chemicals stored in appropriate cabinets with secured shelving?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are flammables stored in appropriate fire-rated cabinets or flammable-safe refrigerator or freezer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are chemicals kept in capped, sealed leak-proof containers and stored upright?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are labels on original containers intact and readable?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are secondary containers (containers of solutions and mixtures) labeled properly?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are old and/or unused (not used within the last three years) chemicals disposed of as hazardous waste and purged from the chemical inventory?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is amount of each chemical reasonable for research need?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are cabinets used to store hazardous chemicals labeled?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>Compressed Gases</b>				
Is gas cylinder secured?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is gas cylinder capped if no regulator is attached?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is gas cylinder labeled?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are gas valves and connections leak tested and leak free?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is gas cylinder transported with cylinder cart?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Is gas cylinder located away from high traffic areas, doorways, electrical sources, heat sources?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are gas cylinders segregated by chemical compatibility?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is cylinder hydrostatic test current?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are old gas cylinders disposed of properly or returned to the vendor?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are gas lines clearly labeled from point of source to end of use?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are blow guns/gas nozzles used for cleaning and other approved purposes regulated at 30 psi or below?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are gas cabinets labeled?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are cylinders that are not in use (not connected to a system/process) have their regulators removed and the cylinder capped?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are gas lines in good condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High Hazard Chemicals and Procedures</b>				
Are written standard operating procedures (SOPs) established for all high hazard chemicals and procedures?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are printed SDSs for all high hazard chemicals on file, organized in the lab and readily accessible to all lab personnel or attached to SOPs?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are lab personnel authorized to work with high hazard chemical, equipment and procedure trained on the procedures and the training documented on written SOPs?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are SDSs, equipment manuals and other references listed and/or attached to the SOP for use of highly hazardous substances, equipment and processes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High hazard gases-Toxic</b>				
Is the amount of gas reasonable for the procedure so that the IFC's MAQ for highly toxic gases is not exceeded in the control are where the lab is located?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is toxic gas concentration reasonable for lab procedure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is cylinder of toxic gas secured, stored and dispensed in ventilated gas cabinet or chemical fume hood?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is gas specific detector installed at point of release and point of use, and calibrated bi-annually or as recommended by the manufacturer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is gas detection system for toxic gas attached to an alarm system that is monitored 24 hours a day?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Is written SOP for use of toxic gas available, approved by PI and signed by authorized users?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are authorized users of toxic gases trained on safe handling of compressed gases, cylinder change-out and specific SOPs? Are their trainings documented?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is written SOP for cylinder change-out available and followed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High hazard gases-Corrosive</b>				
Is written SOP for use of corrosive gas established?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is corrosive gas stored/used inside a ventilated enclosure such as a fume hood or gas cabinet?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is a gas sensor and alarm system installed to detect accidental release of corrosive gas?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are gas lines for corrosive gas free of signs of corrosion?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High hazard gases-Flammable</b>				
Is written SOP for use of flammable gas established?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are non-sparking tools available for cylinder change-out?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is gas cylinder in appropriate location?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are tubing used appropriate for the type of gas and rated for the pressure by which the gas is being dispensed from the cylinder?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High-hazard liquids and solids- Cryogen</b>				
Is cryogen tank/dewar stored in a well-ventilated area?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is oxygen monitor available where cryogen tanks are stored in a room with unreliable ventilation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are required PPE (cryogen gloves, face shield) available and used when handling cryogen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are necessary precautions observed so that the potential for oxygen displacement is minimized when transferring liquid nitrogen inside a confined space or a small room?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High-hazard liquids and solids- Flammable liquid (5 gal or more container)</b>				
Is solvent pump available and used for dispensing from large flammable liquid containers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Is 55-gal drum containing flammable liquid properly grounded and bonded?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High-hazard liquids and solids- Pyrophoric liquid</b>				
Is written SOP for use of pyrophoric liquid available, signed and implemented?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are authorized users of pyrophoric liquid trained on safe handling of pyrophoric liquid and their training documented?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is flame resistant clothing and flame resistant lab coat available and used when handling pyrophoric liquid?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High-hazard liquids and solids- Peroxide formers</b>				
Do containers of peroxide formers indicate date of receipt and date opened?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are peroxide formers discarded according to their expected shelf-life and ability to form peroxides?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is inhibited counterpart of the peroxide former purchased if available and usable?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
If peroxide testing is performed, are testing results clearly documented on the container?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High-hazard liquids and solids- Water Reactive</b>				
Is a class D fire extinguisher available in the lab?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>USC-listed high-hazard chemicals- Mercury</b>				
Is mercury spill kit available?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is alcohol-based thermometer used if mercury thermometer is not necessary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>USC-listed high-hazard chemicals- HF</b>				
Is calcium gluconate gel and calcium gluconate eyewash (if applicable) available and not expired?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is neoprene gloves, tyvek suit, acid resistant apron, acid resistant shoe cover, face shield available?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is HF signage posted in HF work area?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is written HF SOP available, and signed by PI and authorized users?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is HF-specific procedure and safety training of authorized users performed and documented?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is HF spill kit available?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is amount and/or concentration of HF on hand reasonable for research needs?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>Hazardous Chemical Waste</b>				
Is waste storage minimized in the lab?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Are old and/or unused, unidentified or unlabeled chemicals discarded as hazardous waste?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is chemical waste container capped and sealed unless waste is actively being added to the container?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is designated collection area in the vicinity of where waste is generated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is container used for collection compatible with the waste?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is official USC Hazardous Waste tag used to label containers and no chemical abbreviations are used?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is chemical waste removed from the lab accumulation area within 6 months of generating the waste or as soon as 10 gallon limit is reached; whichever comes first?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is waste container filled to the level where there is head space to allow liquid expansion?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are used chemicals that are hazardous (toxic, corrosive, flammable, reactive) collected as hazardous waste?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are only compatible chemicals mixed added in a waste container?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>Wastes other than chemical, biological or radioactive</b>				
Is broken glass collected in sturdy cardboard box, lined with thick plastic bag or in plastic bucket and not overfilled and/or more than 10 lbs?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are used oil, used lamps, bulbs and batteries or other universal waste collected in compatible containers, labeled and disposed of through EH&S?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are syringes and needles and other sharps such as blades and scalpels, etc. used for chemical/mechanical work disposed of appropriately?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are empty chemical containers disposed of?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are other non-RCRA waste such as metal shavings or dust from any cutting/machining operations collected and disposed of properly?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>Nanomaterials</b>				
Is written SOP developed for use of nanomaterial?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is nanomaterial handled inside the fume hood?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Are proper PPEs used when handling nanomaterials?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are personnel authorized to work with nanomaterials trained specifically for safe use of this hazard and is the training documented in the CHP?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>DEA Controlled Subs</b>				
Are DEA drugs stored in secured place?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is DEA and State permit available and current?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is annual drug inventory and drug usage log kept current?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are expiration dates of drugs closely monitored and expired drugs disposed of properly?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High Hazard Equipment and Processes</b>				
Is a written safety SOP available, approved and signed by the PI and authorized users?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are lab personnel authorized to use hazardous equipment provided hazard-specific training and is the training clearly documented in the CHP or Lab Safety Manual?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is manufacturer-issued safety manual available for reference?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are built-in safety mechanisms in place and functional?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is periodic maintenance check performed and documented?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is a written lock-out tag-out procedure available and implemented when equipment is being serviced?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are rotating or spinning parts of equipment guarded so long as the operation of the equipment is not obstructed by guarding?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Are equipment or specific parts of equipment properly labeled to communicate hazards present?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<b>High Hazard Equipment and Processes- Uninterrupted Power Supply (UPS)</b>				
Are UPS units under service contract for battery testing, maintenance and replacement after the warranty period expires?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Is there a 36" clearance around the UPS and are combustible materials kept away from it?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	