

## **UCR Laboratory Safety Evaluation Checklist**

### **Approvals/Documents/Manuals/Plans**

- UC Laboratory Hazard Assessment Tool (LHAT) is complete.
- All group members are listed on the Lab Hazard Assessment Tool (LHAT).
- Laboratory Safety Manual is easily accessible.
- Chemical Hygiene Plan is available.
- The Injury and Illness Prevention Plan (IIPP) is available.
- Safety Data Sheets for hazardous chemicals are easily accessible.
- Hazard-specific Standard Operating Procedures (SOPs) are available and signed.
- Emergency Procedure poster is posted.
- Staff is aware of how to report incidents and near misses.
- Field safety plans are completed when working in the field.

### **Lab Safety Training**

- Training on the Chemical Hygiene Plan is documented.
- Laboratory Site-Specific Safety Checklist has been completed and documented.
- Training on laboratory specific Standard Operating Procedures (SOP) is documented.
- All researchers have completed the Laboratory Safety Fundamentals.
- All researchers in the lab have completed Hazardous Waste Management training.
- All researchers have completed Fire Extinguisher training.
- Fume hood users know how to check the airflow monitor to verify that the hood airflow is functioning properly. Users know how to check the certification sticker for annual testing.
- Training on hydrofluoric acid (HF) first aid is documented.

### **Personal Protective Equipment (PPE)**

- Long pants (legs covered) and closed-toe/heel shoes are worn in the lab.
- Safety glasses or chemical splash goggles are worn in the laboratory.
- Lab coats, appropriate to the activity, are worn.
- Properly fitted lab coats are available.
- Gloves are worn for laboratory procedures where skin contact with hazards may occur.
- Appropriate gloves are available for use with hazardous activities conducted within the lab.
- PPE contaminated with hazardous materials are disposed of appropriately.
- Lab workers were not observed wearing gloves while accessing common items, door knobs, elevator buttons, etc.
- Hazard assessment identified that specialty PPE is appropriate (eg. UV/IR glasses, laser safety glasses, cryogenic gloves, pyrophoric gloves, etc).
- Face shields are used, as appropriate.
- Respirator identified in use with documentation of voluntary use or participation in campus respiratory protection programme.

### **Laboratory Practices**

- No evidence of eating or drinking in the laboratory where hazardous materials are being used or stored.
- Food is not stored with hazardous materials.
- No evidence of mouth pipetting.
- Furnishings used in laboratory are covered with a material that is easily decontaminated.
- Hand wash sink is available with soap and paper towels.
- Evidence suggests spills are promptly or properly cleaned.
- Good chemical hygiene practises are observed.
- General housekeeping in laboratory is maintained.
- Chemical work is conducted more than 6" from front of hood.
- Fume hood is free of clutter, not used for storage, or rear ventilation slots within the hood is not blocked or covered.
- Lab workers are using a hood in good working condition.

### **General Safety**

- Heavy items and precariously situated items are not stored overhead.

- Large equipment/shelving units are seismically anchored/restrained.
- Overhead shelving and storage is secured and prevents items from falling.
- Ceiling tiles/panels are in good condition.
- Floors preclude slipping, tripping, or falling.
- Laboratory ventilation pressure is negative with respect to corridors and offices.
- Safety hazards are not present.
- Power tools and/or shop equipment do not present a safety hazard.

#### **Fire/Life Safety**

- Fire alarm bells, horns, and/or strobes are not obstructed and could not hamper proper operation or reduce the sound.
- Items are stored in a manner such that the minimum clearance of 18 inches of a ceiling with sprinklers.
- Aisles, exits, and/or hallways are not obstructed (minimum clearance guidelines of 36 inches is being met).
- Appropriate fire extinguishers are available, as required.
- Fire extinguishers are fully charged, pin and/or security seal are not missing.
- Fire extinguisher is properly mounted.
- Fire extinguisher maintenance tag is present and up-to-date.
- Fire extinguishers are visually inspected on a monthly basis.
- Fire rated doors are not propped open.

#### **Emergency Equipment/First Aid**

- A plumbed emergency eyewash/safety shower or emergency eyewash is available within 10 seconds.
- Access to emergency eyewash/shower is not obstructed.
- Annual test of emergency eyewash/shower or emergency eyewashes has been completed and documented. Monthly activation of eyewash/shower is documented.
- First aid kit is available and the items are not expired.
- Appropriate chemical/biological spill kit is available.
- Spill kit materials are adequately supplied.
- Calcium gluconate paste for hydrofluoric acid (HF) exposure is available and not expired.

#### **Hazard Communication**

- Safety Placard is current in the last 12 months and posted at the entrance(s) with appropriate hazard communication, emergency contacts, and PI/Supervisor information.
- Refrigerators/freezers are labelled appropriately for the use of the refrigerator/freezer.
- Storage cabinets are clearly labelled as to contents.
- Common abbreviations used on container labels are identified in a prominent place in the lab.

#### **Carcinogens**

- A Carcinogen Use Authorisation (CUA) for 5209 regulated carcinogens is current.
- Access to designated carcinogen work and storage areas is properly marked or controlled.
- California-regulated carcinogen are listed and maintained in UC Chemicals inventory.
- Standard operating procedure(s) specific to the carcinogen(s) in use are available and being followed.

#### **Chemicals**

- Compatible chemicals are appropriately stored together.
- Expired or unneeded chemicals are not stored in the laboratory.
- Chemical storage containers are in good condition.
- Chemicals are not stored above eye-level.
- Containers of hazardous chemicals are not stored on the floor.
- Flammable liquid storage in the lab does not exceed allowable quantities as determined by the Campus Fire Marshall.
- Flammable liquid storage outside of the flammable storage cabinet does not exceed 10 gallons.
- Flammables are not stored in large containers.
- Flammables stored in "laboratory safe" refrigerator/freezer.
- Flammables are not used in close proximity to ignition sources.

- Flammable liquids in 5 gallon cans are stored in the flammable cabinet.
- Time sensitive chemicals/peroxide formers stored appropriately.
- Pyrophoric chemicals are segregated or contained.
- Pyrophoric chemicals are properly labelled.
- Toxic gases are properly stored in a ventilated cabinet/fume hood.
- Chemical Inventory has been completed or updated within the past 12 months.

#### **Compressed Gas**

- Compressed gas cylinders are adequately secured.
- Oxygen and combustible cylinders are not stored together.
- Valves of gas cylinders are capped when not in use.
- Compressed gas cylinders are properly labelled with contents and hazards.
- Highly toxic gas cylinders are stored in a gas cabinet, ventilated enclosure, or fume hood.
- Incompatible compressed gas cylinders are stored separately.

#### **Containment Equipment**

- Audible/visual alarm is functional or visual airflow indicator is working.
- Fume hood has been certified within the past year.
- Fume hood illumination is functional.
- Proper sash height is indicated or sash position does not exceed approved working height, and is closed when not in use.
- Appropriate safety information is posted on equipment.
- Secondary containment is provided for vacuum pump.
- Flammable cabinets are self-closing.
- Flammable cabinets are marked "FLAMMABLE – KEEP FIRE AWAY".

#### **Controlled Substances**

- A Controlled Substance Use Authorization (CSUA) is current and maintained.
- Controlled substances are stored securely.

#### **Electrical Safety**

- A minimum clearance of 36 inches in front of electrical panel/breaker box is being maintained.
- Equipment does not have damaged cords, plugs, or other condition that constitutes an electrical hazard.
- Major appliances/equipment are plugged directly into outlets.
- Extension cords are not being used as semi-permanent wiring.
- Extension cords or power strips are plugged directly into outlets.
- Ground Fault Circuit Interrupter (GFCI) protection is installed with receptacles that are within 6 feet of the sink.
- High voltage (>120 V) equipment is clearly labelled.
- High voltage (>120 V) equipment is properly guarded.
- Power strips near liquids have surge protection.
- 3-prong plugs have not been modified to plug into 2-prong receptacles.
- Personnel working on hard-wired equipment are trained to the Energy Isolation – Lock Out/Tag Out (LOTO) programme.
- Electrical cords do not pose trip hazards.
- Junction boxes are closed.

#### **Hazardous Waste**

- Chemical waste containers are in good condition and compatible with waste.
- Hazardous waste container or secondary containment is free of contamination.
- Hazardous waste container remains closed when not in use.
- Hazardous waste is properly disposed.
- Hazardous waste is properly labelled.
- Hazardous waste is disposed of within regulatory time limits.
- Sharps containers are properly labelled as to contents, hazard, etc.
- Sharps container contents are not filled past the fill line.

- Sharps are properly disposed in rigid, leak-proof container.
- Hazardous waste is stored in rigid, leak-proof secondary containment.
- Universal waste is properly labelled/discarded/contained under 1 year.

### **Biosafety**

- Research involving recombinant DNA and/or biological materials are listed in the approved Biological Use Authorisation (BUA).
- Biosafety Manual is available and has been reviewed.
- Biosafety cabinet (BSCs) have been certified within the last year.
- Biosafety cabinets (BSCs) are located away from doors, heavily travelled areas, and other airflow disruptions.
- Biohazard stickers are posted on equipment used with biohazardous materials.
- Biohazardous waste in red biohazardous bags is properly disposed.
- Biohazardous waste is properly disposed in red biohazard bags.
- Biohazardous waste is stored in a rigid, leak-proof secondary container with a tight fitting lid.
- Biohazardous waste is properly labelled.
- All researchers working with biological materials have completed the Biosafety training.
- All researchers working with bloodborne pathogens or other potentially infectious materials have completed Bloodborne Pathogens training.
- Exposure Control Plan is accessible to all researchers working with bloodborne pathogens or other potentially infectious materials and reviewed annually.
- Vacuum systems (both house systems and stand-alone vacuum pumps) are fitted with traps and/or protection (HEPA/hydrophobic) filter, if required.

### **Radiation/Lasers**

- A current Laser Use Authorisation is on file and current.
- All researchers working with lasers have completed the Laser Safety training.
- A Radiation Use Authorisation (RUA) is current and approved.
- All researchers using X-ray diffraction units or electron microscope have completed X-ray training.
- All researchers working with radiological materials have completed Radiation Safety training.
- Radiological waste is properly disposed.