Instructions for Completing the UTK Laboratory-Specific Chemical Hygiene Plan

This template is designed to provide an organizational framework for ensuring compliance with the OSHA Laboratory Standard. The template covers all the laboratory-specific elements of the Lab Standard and should be used in conjunction with the *UTK Chemical Hygiene Plan and Compliance Guide*, any relevant departmental chemical hygiene plans or procedures, and the *UTK Laboratory Safety Manual*. UTK EHS allows other formats to be used as long as they contain the necessary elements outlined in this document. Upon request, the Laboratory-specific Chemical Hygiene Plan (LS-CHP) must be submitted to UTK EHS and/or applicable safety committees (Lab Safety Committee, High Hazard Chemical Review Committee, etc.). Contact EHS for questions or assistance at 865-974-5084 or ehs_labsafety@utk.edu.

The Principal Investigator (PI) has the primary responsibility for ensuring the health and safety of their staff and for overall compliance with safety regulations, including the completion of the laboratory-specific CHP. However, the PI can delegate health and safety responsibilities to a trained and knowledgeable individual, referred to as the Qualified Laboratory Designate (QLD).

Filling out the Template

Below are detailed instructions for completing each section of the template. The template is a fillable PDF file that can be saved to your computer and submitted directly to EH&S (if requested). Additional stand-alone SOP templates (see **Section 4**) are also available and work in a similar manner. This will allow you to generate and save multiple SOPs without having to complete the information for the other sections.

Certification Page

The name of the PI (or other indication of applicable ownership and/or location) should be placed on the top of this page (in the box). The PI and the QLD (if one has been appointed) must sign this page. Updates to the plan should be made whenever required by changes to the laboratory hazard or operational profile. Use the latest version of the template (found at http://ehs.utk.edu) when performing updates. The LS-CHP must be reviewed annually, at a minimum. If no changes are required then the plan should be signed and dated by the reviewer (the PI or QLD).

Section 1

Key safety personnel should be identified in Section 1.1. The Principal Investigator may assign the role of Qualified Laboratory Designate (QLD), an individual delegated the responsibility for implementing the provisions of this plan, to a member of his laboratory staff. The QLD must be qualified by training or experience to provide technical guidance. You may also include other knowledgeable staff members, the DSO, the building manager, or other departmental personnel under this section.

All individuals covered by this plan must be listed in Section 1.2. This includes all staff and students working in the indicated labs under the direction of the PI.

Section 2

This section provides space for identifying the locations where operations identified in the LS-CHP are performed. The template allows for multiple buildings and rooms within buildings. Rooms can be lumped together on a single line for each building. A check mark should be placed under the “Room Assigned to the PI?” or “Shared Facility?” headings, as appropriate. “Shared Facility” denotes a space occupied or used by more than one PI (e.g. core facilities, community laboratories, etc.)

Section 3

The UTK CHP outlines university requirements related to the laboratory use and storage of hazardous chemicals. PIs may implement their own rules and requirements for the laboratories under their control (as long as they are consistent with University requirements and building/department/institute requirements, as applicable). Section 3 provides a section to document these laboratory-specific requirements. Some examples may include "No working alone after 10:00 p.m." or "Lab coats must be worn at all times in the lab regardless of whether work is being performed".

Section 4

This is the most important section of the LS-CHP and includes specific safety procedures required in the laboratory for operations involving hazardous chemicals. It is broken up into two parts – the Procedure Form and the Task Table.

The Procedure Form: This is best utilized to describe safety requirements for procedures involving carcinogens, reproductive toxin, and highly toxic materials (i.e., Particularly Hazardous Substances), procedures for highly reactive chemicals, or other high hazard material or procedure. It is not expected that the detailed stepwise procedure be described in this form but only the safety aspects. Any written stepwise procedure should be attached or referenced. Where applicable, a single Procedure Form can be used to describe the safety aspect of similar procedures. Below is some guidance for completing the form:

- *Prior Approval:* As stated in the UTK CHP, a PI can determine whether the procedure needs prior approval before an individual can perform the procedure. The prior approval requirement can be indicated by checking the appropriate box. Note: Section 7 provides a location to document an individual's approval to perform the procedure. The PI can determine how long approval is valid, though typically once approved an individual can continue to perform the procedure.
- *Particularly Hazardous Substance (PHS):* Indicate whether this procedure involves the use of a PHS and the applicable category(ies). Appendix B of the Campus CHP provides information helpful in determining if a chemical is a PHS.
- *Highly Reactive Chemicals:* Indicate whether this procedure involves the use of a highly reactive chemical and the applicable category(ies).
- *Brief Description of Procedure:* A brief description should be provided. Limit this to a few sentences. If the procedure is not attached, it is appropriate to provide a reference to the procedure.
- *Hazardous Chemicals Involved:* Provide a list of all hazardous chemicals specific to the procedure(s), and briefly describe the hazards they pose (such as highly toxic, flammable, water reactive). It is not necessary to include chemicals that do not pose a significant risk (such as buffers).
- *Other Hazards:* In this portion include other hazards associated with the procedure, e.g., thermal hazards from hot plates or Bunsen burners, electrical hazards, laser hazards, to name a few.
- *Exposure Control:* This portion of the form allows you to enter the Personal Protective Equipment (PPE) and engineering controls needed for this procedure. This is a master list of controls for the covered procedure(s). The additional line can be used to describe other controls or for clarifying the controls that have been checked. For multistep procedures, you will have the option of breaking this down into the various tasks (see *Task Hazard Control Table* below.)

- *Administrative Controls:* Administrative controls are changes in routine work procedures implemented to reduce the duration, frequency, and severity of exposure to hazardous chemicals or situations. Provide a list of administrative controls specific to this covered procedure(s). Examples include requiring two people to be present during the procedure or not allowing the procedure to be performed at night.
- *Task Hazard Control Table:* For some procedures that have multiple steps you can break the controls required for each of the steps. If the PPE and engineering controls are the same throughout the procedure then this can be left blank.
- *Waste Disposal:* Indicate how the hazardous waste is handled.
- *Accidental Spills:* Each procedure must include a description of how to handle a chemical spill. The type of spill kit used and the location of the spill kit should be included.
- *Decontamination Procedures:* In this section, provide information on how to handle personnel exposure including any first aid measures that may be necessary. Laboratory staff should be trained in handling common exposures. This section allows you to add chemical-specific procedures (e.g., for hydrofluoric acid skin exposures rinse and apply calcium gluconate). You can also provide information on equipment decontamination.
- *Training:* This portion allows you to indicate what training is needed prior to any laboratory staff performing the covered procedure(s). Include both in-lab training and training from EH&S or other sources.
- *Principal Investigator Approval:* The Procedure Form (or other acceptable SOP format) must be signed and dated.
- *Personnel Acknowledgment:* All personnel carrying out the SOP must acknowledge that they have read and understood it and agree to adhere to its requirements.

The Task Table: This table allows you to itemize routine laboratory tasks and respective controls. This table is similar to the "Task Hazard Control Table" found in the "Procedure Form" but is best used to describe the hazards and controls needed for the numerous small (and often unrelated) tasks where the use of chemicals is limited. For example:

Task	Hazard Description	Required PPE and Engineering Controls
Pouring cryogenic liquid from one container to another	• Frostbite due to extreme cold • Asphyxiation due to oxygen deficient environment	• Thermal protective gloves • Eye and face protection with face shields and safety glasses • Lab Coats • Point of use ventilation system

It is not appropriate to use this table for high-hazard operations, such as procedures involving highly toxic materials, explosive compounds, or highly flammable or pyrophoric materials (use the Procedure Form in Section 4).

Section 5

This section provides an area to document that staff have received orientation on the basic OSHA regulatory requirements, laboratory procedures, and emergency practices. An orientation checklist should be completed for all new laboratory workers and signed by the worker and PI (or the QLD). There is space allotted for the addition of laboratory-specific health and safety features and resources. Additional items are optional but can include such items as special engineering controls (such as monitors and alarms) and resources (location of reference books).

Section 6

This section provides space for documenting the training that is required for working in the laboratory. There are two parts:

The Master List of Required Training: This section provides a location for listing all the training that is required in order to work with hazardous chemicals in the laboratory. It is not assumed that everyone needs all the training listed. Individual training requirements should be based on work assignments, so some individuals will require more training than others. The training listed can be general (such a proper handling of compressed gas cylinders) or very specific (such as performing a specialized lab procedure) and should include training provided in-lab and from other sources (such as training provided by EHS). Additional pages of this can be completed if there is not enough room to list the training.

Documentation of Training: This section provides a place to document individual safety training. A brief description should be provided that includes how the training was performed (hands-on, PowerPoint presentation, group discussion, etc.). While this should be used to document the laboratory training described in the *Master List of Required Training*, it can also be used to document training such as annual laboratory safety refreshers or to document discussion of safety issues that occur during laboratory staff meetings.

Section 7

As described above in the instructions for Section 4, as well as in the UTK CHP, some procedures need prior approval from the PI (or EHS) before an individual can perform the procedure. Document the required approval in this section. A sheet should be prepared for every procedure that requires prior approval. It is up to the PI to determine whether approval is required every time the procedure is performed or whether approval is for all subsequent execution of the procedure.

Section 8

OSHA requires that Safety Data Sheets (SDSs) be maintained and readily accessible for all hazardous chemicals. Paper copies and electronic copies are both acceptable. Paper copies of particularly hazardous substances and high volume hazards should be maintained for quick access when delivering to medical care providers. If electronic copies are used these are best stored on a hard drive, flash drive, intranet or other similar local source. Simply having the ability to search the internet on-demand is not an acceptable method of maintaining compliance with the regulations since this method limits the accessibility of the SDSs. Likewise, the UTK CHP requires maintenance of chemical inventories. Indicate the location and access instructions for SDSs and chemical inventories in this section.

Section 9

The purpose of exposure monitoring must be described if exposure monitoring is required for any laboratory operation. The results must be available to all lab workers. Provide the location and access instructions for monitoring results in this section.

Section 10

This section provides a convenient place to list or attach references related to chemical or laboratory safety related to procedures used in the lab. These can be articles, guidance documents, or links to relevant websites. This is optional but highly recommended.