

All labs using chemicals are required by Cal-OSHA to have a written safety plan (Chemical Hygiene Plan) in place for chemical workers. It is the responsibility of the lab supervisor/PI to ensure that a complete Chemical Hygiene Plan is developed, implemented and shared with all their affected workers. When complete, add these templates to the “CHP” tab of your CHP binder. If you don’t have the binder, or need other assistance with the CHP requirement, contact EH&S at x-4899.

**TEMPLATE #1:
General Laboratory Information**

Laboratory Supervisor (PI):

Laboratory Location(s) (Building /Rooms):

Department Information

Department Safety Representative ([current list](#)):

Location of Department Safety Bulletin Board ([current list](#)):

Location of Building Emergency Assembly Points ([current list](#)):

**TEMPLATE #2:
Emergency Information**

As applicable, please provide information regarding emergency procedures and equipment specific to the lab(s) under your control. Where applicable you may just reference the emergency contact information on your [lab door placards](#).

- **Evacuation procedures** (e.g., close fire doors, secure certain equipment, etc.)

- **First-aid kit** (e.g., location, contents, maintenance responsibility, etc.)

- **Spill cleanup materials** (e.g., location, contents, maintenance, procedures, etc.)

- **Laboratory monitors or alarms** (e.g., operation, response, maintenance, etc.)

- **Other**

Per campus policy, all significant **injuries must be documented** via the *UCSB Report of Injury to Employee/Student* form as soon as possible – form available in your departmental office. This is necessary for potential reimbursement for personal medical costs, or Worker’s Compensation Claims.

Per SB County Fire and campus policy, **all fires must be reported to 9-911 immediately** – even if the fire is out. This is particularly true if there is use of an extinguisher (must be replaced); an injury; or property damage.

**TEMPLATE #3:
Health & Safety References**

Please list here the title and location of any additional health and safety reference materials (e.g. Merck Index) associated with the lab which employees may use to aid them in their work.

Reference	Location
1.	
2.	
3.	
4.	
5.	

Material Safety Data Sheets (MSDS):

Per OSHA, all lab chemical users must know: a) what an MSDS is, b) MSDS relevance to their health and safety, c) how to readily access them. These issues are all covered in the EH&S lab safety orientation program.

Labs are encouraged to maintain their own [MSDS](#) for the hazardous chemicals they routinely use

Background : Standard Operating Procedures

Per the Cal-OSHA Standard, a complete CHP includes **Standard Operating Procedures (SOP)** to aid workers in minimizing chemical exposures in the lab. This is generally interpreted to mean SOPs for the following - **not** for all possible chemical operations:

- Operations involving what Cal-OSHA specifically designates as **Particularly Hazardous Substances (PHS)**, namely, [“Select” Carcinogens, Highly acute toxins, Reproductive toxins](#)
- Other “high-hazard” chemical operations

To assist labs in developing their SOPs, the following resources are provided herein:

- **Template #4:** A generic SOP for the use of Particularly Hazardous Substances
- **Template #5:** A blank SOP form for other high-hazard chemical operations

However, these information sources are very general and can't cover all operations. **Therefore, it is the responsibility of lab supervisors to develop new SOPs (or augment the generic PHS SOP) if needed to protect their workers.** The decision on whether a specific SOP is required is the prerogative, but also the responsibility, of the lab supervisor.

TEMPLATE #4:

**Standard Operating Procedure:
Use of “Particularly Hazardous Substances”**

Per Cal-OSHA, Particularly Hazardous Substances (PHS) are **“Select” Carcinogens, Reproductive Toxins and Highly Acute Toxins**. Web-links to definitions and lists of these materials are below.

This generic PHS SOP is provided for use by campus labs. Lab supervisors are responsible for *editing, or augmenting* this generic SOP as necessary given their local usage conditions. If a particular procedure below can not be feasibly followed, then alternative techniques that offer equivalent protection should be documented herein. While this broad SOP is for PHS as a whole, supervisors should develop SOPs for specific PHS, or classes of related PHS, if necessary for adequate worker safety.

Date of last revision to SOP: January 2007

1. Laboratory SOP Name

USE OF PARTICULARLY HAZARDOUS SUBSTANCES (PHS)

“Select” Carcinogens - includes carcinogens which are further regulated by Cal-OSHA, e.g. *formaldehyde, dichloromethane, benzene, cadmium compounds and arsenic compounds*. For assistance, click [here](#) for fact sheets on these materials.

[Reproductive toxins](#)

[Highly acute toxins](#)

2. Approval Required

Discuss any circumstances under which this operation requires prior approval.

Example: “undergraduates can not do this operation without my specific consent”.

3. Personal Protective Equipment *List specific personal protective equipment needed, e.g., gloves, coats, eyewear.*

Use of PHS shall, whenever feasible, employ the following:

- **Protective eyewear** such as approved safety glasses, goggles or face shields. The latter should be used when handling corrosives in large quantities (e.g. > 1 gallon).

- **Lab coats**, particularly when using PHS that are readily absorbed through the skin, or are corrosive to skin tissue.
- **Lab gloves** which are chemically-resistant to the particular material. Note that some common carcinogens such as dichloromethane and benzene readily permeate common lab gloves such as neoprene and nitrile.
[Take me to a Glove Reference Chart to Identify the Proper Gloves](#)
- All **respirators**, other than dust masks, must be issued and approved by EH&S to meet Cal-OSHA requirements (x-8787).

4. Engineering/Ventilation Controls

Describe required engineering controls. Examples: fume hoods, glove boxes, biosafety cabinets, pressure relief valves, leak detection systems, auto-shut off valves, etc.

- Volatile, or dust/aerosol-producing PHS must be used in a **fume hood, glove box, ducted biosafety cabinet, or EH&S-evaluated snorkel exhaust**. Use on the open bench is prohibited except when it is impractical (i.e. equipment will not fit in hood), in which case other controls (e.g. respirator) must be employed.
- When used outside of the above containment devices, containers must be sealed. Note that the use of volatile PHS such as formalin, dichloromethane and benzene on an open lab bench, in open containers, would probably result in worker exposures above the Cal-OSHA legal/safe limits for such materials.

5. Any Special Chemical Handling, Storage, Cleanup or Disposal Requirements

- Under the CHP law, an area must be designated for working with PHS. The designated area may be the entire laboratory, an area of the lab, or a device such as a laboratory hood. **At UCSB, the designated PHS work area is the entire laboratory**, unless the supervisor specifies otherwise herein; either in general, or for a specific material or operation.
- PHS must be stored in completely-sealed containers. Although hood storage of chemicals is generally discouraged, volatile PHS can be stored in a fume hood if deemed necessary.
- Spills of PHS must be completely cleaned up. Spills that can not be safely and completely handled by lab personnel must be reported to EH&S for assistance.
- Like all chemical wastes, disposal of PHS must be done through EH&S. No PHS, or other chemical wastes can go into the sewer system, trash or be allowed to freely evaporate.

**TEMPLATE #5:
Standard Operating Procedures for High Hazard Lab Operations**

This blank template is for developing SOPs for any “high-hazard” chemical operations not covered by Template #4. **The development of lab-specific SOPs for high hazard operations is the responsibility and determination of the supervisor.** OSHA does not have specific requirements for SOP content. EH&S recommends that the following elements be considered in SOP development, but supervisors should expand on as appropriate.

Date of last revision to SOP:

1. Laboratory SOP Name

SOPs can be based on a specific chemical; a class of chemicals; a specific or set of lab procedures; a specific piece of equipment, etc.

2. Approval Required

Discuss any circumstances under which this operation requires prior approval. E.g. “undergraduates can not do this operation without my specific consent”.

3. Hazardous Chemicals

List chemicals and their hazard class, e.g., “carcinogenic, highly toxic, flammable, teratogen, corrosive, etc.” Better yet, print and attach MSDS ([MSDS search](#)).

Chemical Name

Hazard Class

A
B
C
D

- 4. Personal Protective Equipment** *List specific personal protective equipment needed, e.g., gloves, coats, eyewear. If a respirator is needed, contact EH&S (x8787).*

[Take me to a Glove Reference Chart to Identify the Proper Gloves](#)

- 5. Engineering/Ventilation Controls**

Describe required engineering controls. Examples: fume hoods glove boxes, biosafety cabinets, pressure relief valves, leak detection systems, auto-shut off valves, etc.

- 6. Any Special Chemical Handling, Storage, Cleanup or Disposal Requirements**

- 7. Other**

**Training Record:
Lab-Specific Chemical Hygiene Plan**

The following individuals have reviewed and understood the preceding Lab-specific Chemical Hygiene Plan.

Lab Supervisor: _____

Name

Date