

# UTIA Chemical Hygiene Plan Section 3: Lab Specific Standard Operating Procedures (SOPs)

## What goes here?

Start with what you have. Put a copy of your lab-specific standard operating procedures (SOPs) here. If your SOPs are lengthy, it is acceptable to put them into a separate binder nearby that is labeled as “SOPs.” If your SOPs are already in another binder, simply put it near the CHP binder and label it as above.

SOPs should identify the particularly hazardous chemicals or dangerous procedures in your lab. This would include chemicals that are:

- Carcinogens
- Reproductive toxins
- Acutely toxic
- Highly flammable
- Reactive or explosive

Include a “Special Provisions for Work with Particularly Hazardous Chemicals or Dangerous Procedures” section in the final SOPs. There are many different ways to incorporate safety practices into the lab SOPs. The objective is to identify the hazards, describe necessary safety practices (e.g. “Work with xylene will only be done in the fume hood.”) and personal protective equipment (e.g. “Nitrile gloves will be worn any time you work with Osmium compounds.”). In other words, make a special note of what is dangerous in your lab and how to minimize those dangers. Ensure that all such provisions are documented in this tab.

Guidance for customizing your SOPs for Particularly Hazardous Substances as well as a template for “Work with Particularly Hazardous Substances” is below.

## Why is it important to include these documents in the CHP?

These documents reflect the safety practices that your lab is following to comply with OSHA requirements for safe handling of these materials. To assure compliance, all personnel who will be working with these materials must have a uniform understanding of the practices to be followed. They must be knowledgeable of the contents of these documents, and know how to readily access them in the event of an inspection or emergency.

# 1 Customizing the CHP for Particularly Hazardous Chemicals and Procedures in each Lab

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The OSHA Lab Standard requires that special consideration be given to use of chemicals and procedures that are **particularly hazardous**. Lists of Particularly Hazardous Compounds are provided below in the Appendix, and in Appendix 2 of the Lab Safety Program Document in Tab 4. A particularly hazardous chemical is any chemical that has one of the following characteristics:

Carcinogen (strongly implicated as a potential cause of cancer in humans)
Reproductive toxin
Compound with a high degree of acute toxicity
Highly flammable
Reactive compound/ explosive substance which requires special work practices and safety considerations

These special hazards must be addressed in the SOPs, describing the conditions for the work to be done. As previously mentioned, all SOPs must be included with the chemical hygiene plan, i.e. put into the second tab in this notebook. Ensure that the CHP, along with the SOPs, is in an accessible location in each laboratory.

## 1.1 Special Precautions for Carcinogens, Reproductive Toxins, and Substances with High Toxicity

When laboratory procedures include the use of highly hazardous chemicals, **special precautions** shall be implemented as deemed necessary by the lab supervisor. These precautions must be stated clearly in the SOPs and include the following provisions:

1. Establishment of a **designated area** for the use of the high hazard chemicals.
2. **Signage and access control** to the work area where the chemical is used.
3. Special precautions such as use of **containment devices** such as glove boxes; **isolation** of contaminated equipment; practicing good laboratory **hygiene**; and **prudent transportation** (including secondary containment) of very toxic chemicals.
4. **Planning** for accidents and spills.
5. Special **storage and waste disposal** practices.

Below is a template of an SOP that outlines each of these areas of emphasis. If you already have an SOP document, ensure that it at least includes sections similar to

the template below. For additional guidance reference *Prudent Practices in the Laboratory*, published by the National Research Council, is a useful reference which has detailed recommendations for work with particularly hazardous substances, and is available to borrow from the UTIA Safety Office.