

## **Standard Operating Procedures Template for Highly Hazardous Chemicals**

- **Title of Procedure:**
- **Date:**
- **Date of Last Review:**
- **Principal Investigator:**
- **Lab Location:**
- **Lab Personnel who have reviewed SOP/Date:**

### **Risk Assessment**

**Hazardous Chemicals:** *(List chemicals used. Include chemical name, common name and abbreviation)*

**Potential Hazard(s):** *(Describe the potential hazards associated with the chemicals or the procedure.)*

*Examples include:*

- 1) *Chemical hazards such as carcinogenic, irritant, corrosive, acutely toxic*
- 2) *Reproductive hazards such as teratogens or mutagens*
- 3) *Allergies or chemical sensitivities that may be associated with the chemical*
- 4) *Physical hazards such as reactive, unstable, pyrophoric, implosion, exothermic, use of high energy equipment*

**Routes of Exposure:** *(As applicable, describe the potential routes of exposure associated with the procedure such as inhalation, injection, skin/eye contact)*

**Exposure Limit:** *(As applicable, list the Permissible Exposure Limit (PEL) or Threshold Limit Value (TLV) of the chemical(s) if known)*

**Quantity/Concentration Hazards:** *(As applicable, describe if the quantity/concentration of the chemical(s) used increases the risk of exposure to the chemical.)*

**Substitution of Less Hazardous Chemicals:** *(As applicable, describe the potential use of less hazardous chemical substitutes)*

### **Control Measures**

**Personal Protective Equipment (PPE):** *(List all applicable personal protective equipment needed for procedure)*

*For example, describe use of:*

- 1) *Gloves (what type)*
- 2) *Lab Coats, Suits, Aprons*
- 3) *Safety Glasses, Goggles, Faceshields*
- 4) *Respirators, Hearing Protection*
- 5) *Special Equipment (such as blast shields)*
- 6) *Other PPE*

**Engineering Controls:** *(As applicable, describe the engineering controls used for the procedure)*

*Examples:*

- 1) *Use of fume hoods or glove boxes*
- 2) *Special ventilation*
- 3) *HEPA filtered vacuum lines*
- 4) *Non-reactive containers*
- 5) *Temperature control*
- 6) *Bench paper, pads, chuks, plastic-backed paper*
- 7) *Special signage*
- 8) *Safe sharp devices*
- 9) *Other safety devices used*

**Work Practice Controls:** *(As applicable, describe work practice controls used for the procedure)*

*Examples:*

- 1) *Designated areas(for highly toxic chemicals)*
- 2) *Performing procedure with at least two people present*
- 3) *Rotating workers*
- 4) *Restricting access; locks*
- 5) *Housekeeping*

**Monitoring:** *(As applicable, describe any monitoring needed for the procedure)*

*Examples:*

- 1) *Personnel exposure monitoring*
- 2) *Gas/spill release monitoring*

**Use in Animals:** *(As applicable, describe how the chemical will be safely used in animals)*

*Examples:*

- 1) *Dosing administration procedures*
- 2) *Animal restraining*
- 3) *Information on shedding/excretion of chemical*
- 4) *Aerosol suppression practices*
- 5) *Handling animals*
- 6) *Special cage handling/washing instructions*

**Cleanup/Decontamination Procedures:** *(Describe the process for cleaning the work area during and after the procedure.)*

**Storage Procedures:** *(Describe how and where the chemical will be safely stored)*

*Example:*

*Reviewing expiration dates on peroxide formers*

**Transportation Procedures:** *(If the chemical will be transported on campus, describe procedure)*

**Waste Disposal Procedures:** *(Description of how waste will be disposed)*

*Examples:*

- 1) *Animals: include bedding, cages and carcasses*
- 2) *Chemicals*
- 3) *Radioactive*
- 4) *Sharps*

**Emergency Procedures:** *(Describe what procedures should be followed in the event of an emergency)*

**Spills or Releases:** *(Provide specific instructions on what personnel should do in the event of a spill or gas release. Include location of spill kits.)*

**Fire:** *(Provide specific instructions on what personnel should do in the event of a fire)*

**Emergency Shut Offs:** *(If applicable, describe procedures for shutting down equipment in an emergency)*

**Signs and Symptoms of Exposure:** *(Describe the specific signs and symptoms of an exposure to the chemical such as visual cues or odors)*

**Exposures:** *(Provide specific instructions on what personnel should do in the event of an exposure)*

First Aid: *(If first aid for exposure is available, describe procedure. If not, describe what steps should personnel take if injured.)*

**Occupational Health Requirements:** *(Describe any Occupational Health requirements necessary that are associated with the procedure. Examples include medical evaluation, baseline serum samples and respiratory fit testing)*

**Material Safety Data Sheets (MSDS):** *(Describe how personnel will access MSDS in the lab. Include a copy of the MSDS with this SOP)*

**Training Requirements:** *(Describe what training personnel must complete before using chemical/procedure. This training should be documented)*

**Review of Procedure:** *(Describe the frequency for reviewing the SOP document)*

**Protocol:**

*Description of how to safely perform the experiment or operation.*