



STANDARD OPERATING PROCEDURE

[TITLE]

This form may be used as a guide for creating Standard Operating Procedures (SOP) for use in laboratory. Review any applicable manufacturer/vendor safety information, such as a Safety Data Sheet (SDS), before developing the Standard Operating Procedure (SOP).

Department:
Location(s) covered by this SOP
Principal Investigator (PI) (<i>Print</i>):
Internal Lab Coordinator/Lab Manager:
The author(s) of the SOP:
Date SOP was approved by PI/Lab Supervisor:
Lab Phone #:

Type of SOP - *check one box*

- Process: *the SOP will be for a process such as distillation, synthesis, chromatography etc.*
- Hazardous chemical: *the SOP will be for an individual chemical such as hydrogen fluoride, formaldehyde, benzene, etc.*
- Hazard class: *the SOP will be for a hazard class of chemicals such as corrosive, oxidizer, flammable, etc.*
- Equipment or system: *the SOP will be for individual equipment or systems that pose a hazard such as lasers, machines with moving parts, UV lamps, etc.*

Potential Hazards and Risk

Hazardous Chemicals: *(List the hazardous chemical for which the SOP is being developed. Include the chemical name, common name and abbreviation, chemical formula, and CAS number.)*

Potential Hazard(s): *(Describe the potential hazards for hazardous chemical, each process or hazard class. Include physical and health hazards. Such as fire, explosion, burns to the skin, toxic fume generation, absorption through the skin, or cancer suspect etc. Consider "worst-case scenarios" when describing the hazards and risk associated with the chemical; how can the risk be minimized.*

(Provide WHMIS hazard classification, pictograms; provide the same for WHMIS15)

Use pictograms: *(Remove those that don't apply - Consult SDS and Label)*



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

Quantity/Concentration Hazards: (As applicable, describe if the quantity/concentration of the chemical that increases the risk associated with exposure to the chemical.)

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

Hazard Control - Safety Measures

Selection and Purchasing: (Describe the total quantity purchased. If possible, purchase small quantities or dilute solutions to reduce the risk of exposure and to minimize waste. Consider safer container options (e.g. shatterproof glass, septum-top containers, etc.). Can the chemical(s) be bought in suspension and/or liquid form?)

Engineering Controls: (As applicable, describe engineering controls that will be used to prevent or reduce employee exposure to hazardous chemicals for the process, hazardous chemical, or hazard class. This includes ventilation devices such as fume hoods, glove boxes, special equipment such as blast shields etc.)

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

Examples: Designated areas – signage required e.g., CAUTION, DESIGNATED AREA – REPRODUCTIVE TOXINS, ACUTE TOXINS, OR SELECT CARCINOGENS MAY BE PRESENT; Not performing procedure alone with certain extremely hazardous materials/operations

MSDS/SDS can be accessed online at www.uwindsor.ca/msds.

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

Examples: Personnel exposure monitoring, gas release monitoring, use of dosimeter.

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, Face shields
- 4) Respirators, Hearing Protection
- 5) Other PPE

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

Examples: Dosing administration procedures, animal restraining.

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

Storage Procedures: *(List storage requirements for the hazardous chemicals involved in the SOP, including specific storage areas, storage according to compatibility and policies regarding access to chemicals. Special procedures such as dating peroxide forming chemicals upon receipt.)*

Example: Use of unbreakable secondary containment for storage of acutely toxic chemical; Store in cool, dry, well-ventilated area, away from sources of ignition.

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

Emergencies, Spill Procedures, and Exposures/Unintended Contact

Emergency Procedures: *(Describe what procedures should be followed in the event of an emergency. List locations for nearest fire alarm pull and emergency shower/eyewash, first aid kit.)*

Spills or Releases: *(Provide specific instructions on what laboratory personnel should do in the event of a spill or gas release. Reference the SDS as needed. Include location of spill kits. Indicate how spills or accidental releases will be handled and by whom.*

Any special requirements for personnel exposure should also be identified in this section. Identify the location of emergency response phone numbers.)

Spill kit is located.....

Spill – Help contaminated or injured persons. Evacuate the spill area. Avoid breathing vapors. Eliminate sources of ignition if the chemical is flammable. If possible, confine the spill to a small area using a spill kit or absorbent material. Keep others from entering contaminated area (*e.g., use caution tape, barriers, etc.*).

Small (<4 L) – If you have training, you can safely clean-up majority of spill that occur spill. Use appropriate personal protective equipment and clean-up material for chemical spilled. Collect spill waste in plastic bags, label and take to the CCC for disposal.

Large (>4 L) – Dial **911**

Chemical Spill on Body or Clothes – Remove clothing and rinse body thoroughly in emergency shower for at least 15 minutes. Seek medical attention. Notify the supervisor. Follow up with report of the incident.

Chemical Splash Into Eyes – Immediately using an eyewash station rinse eyeballs and inner surfaces of eyelids with water for 15 minutes by forcibly holding the eyes open. Seek medical attention. Notify supervisor. Follow up with report of the incident

Fire: *(Provide specific instructions on what laboratory personnel should do in the event of a fire. Do not use fire extinguisher unless you are trained to do so. List locations for nearest fire alarm pull.)*

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

Exposures: *(Provide specific instructions on what laboratory personnel should do in the event of an exposure; consult SDS.)*

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

Complete incident/accident report form <http://www1.uwindsor.ca/safety/report-an-accident>

Occupational Health Requirements: *(Describe any occupational health requirements necessary that are associated with the procedure. Examples: medical evaluation and respiratory fit testing contact Health and Safety for questions ext.2055.)*

Working Alone: *(Describe if working alone will be allowed and under what conditions)*

Waste

Waste Disposal Procedures: *(Description of how waste will be collected and disposed. Call the CCC EXT.3519 for questions or visit <http://www1.uwindsor.ca/chemicalcontrol/chemical-waste-disposal> for general instructions on procedures for disposing of hazardous waste. Waste examples: biological, chemicals, radioactive, sharps.)*

Protocol

(List steps of how to safely perform the experiment or operation. If this SOP is for a process, describe the overall process in as much detail as possible.)

Training of Personnel

Training Requirements: *(Describe what training personnel must complete before using chemical or procedure including training on the relevant SOP. This training should be documented by completing the signature page at the end of the SOP. Select the relevant trainings from the below list.)*

- Complete “Laboratory Safety for Researchers”; in -class available through the CCC.
- Review and sign lab-specific training with PI, Lab Safety Representative, or other designated person.
- Review SOP with knowledgeable person.
- Complete training on specialized equipment prior to use (e.g., ultracentrifuge, hydrogenation apparatus).
- Other training requirements (e.g., Biosafety, Radiation Safety, Autoclave as listed on Laboratory Safety Orientation Checklist).

I have reviewed and approved this Standard Operating Procedure.

PI Signature

Date

Any deviation from this SOP requires approval from the PI.

Review: *(The SOP should be reviewed annually or sooner if an incident occurs or changes are made).*

