Standard Operating Procedures			
Title:			
Number	Revision	Date	Pages 1 of

1.0 PURPOSE
- Restate and expand the title.

2.0 SCOPE
- Describe to whom and what the SOP applies to.

3.0 RESPONSIBILITIES
- List who is responsible (by job title) for performing work, maintaining records, providing training and ensuring that this procedure is carried out.

4.0 DEFINITIONS
- List any terms, acronyms or abbreviations used that might not be commonly understood by a person new to this SOP.

5.0 HEALTH AND SAFETY WARNINGS
- List all Personal Protective Equipment needed for procedure.
- List hazards of chemicals, biological, equipment, etc., used in procedure.
- List any special emergency equipment needed (eyewash, spill kit)
- List any special waste disposal requirements (biological waste, chemical waste)

6.0 MATERIALS
- List materials and equipment needed for procedure. Be specific. Include chemical concentrations, catalog numbers, equipment names, model numbers, etc. Include any material or equipment set up procedures that need to be done before procedure can proceed (e.g. warm up water, dilute bleach). Cross reference any other SOPs for these procedures. Describe how to obtain equipment.

7.0 PROCEDURES
- List a step-by-step description of the procedure in chronological manner using active verbs and direct statements. Describe any anticipated problems that may occur while performing this SOP, the course of action to be taken, including the job title to consult/report to if problem occurs.

8.0 REPORTING AND DOCUMENTATION
- Describe any logs, reports or other documentation needed or produced during this SOP. Describe where records are kept.

9.0 REFERENCES
- List other SOPs, regulations or references relating to this SOP.

10.0 ATTACHMENTS, FORMS, CHECKLISTS

11.0 REVIEWS AND REVISIONS
- List review cycle (e.g. annually) and procedure (e.g. supervisor, committee). Include author & approval signatures.

	Signature	Job Title	Date
This SOP was written by:			
This SOP was reviewed by:			
This SOP was approved by:			

Standard Operating Procedure **Title:** **Date:**
1. Procedure/Hazardous Material:
2. Department:
3. Revision Date:
4. Special Notifications:
5. Hazard Description: *Hazards –* *Exposure -* *Risks -*
6. Engineering Controls:
7. Personal Protective Equipment:
8. Storage Requirements:
9. Handling Precautions/Conditions:
10. Emergency Procedures:
11. Decontamination:
12. Waste Disposal:
13. Laboratory Specific Procedures:
14. Additional References • Safety Data Sheet • *Prudent Practices* http://www.nap.edu/catalog.php?record_id=12654 (read it online for free) Prudent Practices for Safety in Laboratories provides guidance on planning procedures for the handling, storage, and disposal of chemicals. The book offers prudent practices designed to promote safety and includes practical information on assessing hazards, managing chemicals, disposing of wastes, and more.

	Signature	Job Title	Date
This SOP was written by:			
This SOP was reviewed by:			
This SOP was approved by:			

Process: _____ **Date:** _____

Chemical Hazards: Check all hazards for the chemicals used in this procedure. "CAT"= OSHA Hazard Category from SDS[1]

❍ allergic reaction, sensitizer: _ skin _ respiratory (CAT: ___)	❍ aspiration hazard
❍ carcinogen (CAT:____)	❍ poison inhalation hazard (gas_____)
❍ corrosive __ acid __ base (CAT: ___)	❍ pyrophoric __liquid __ solid __gas
❍ explosive (CAT: ___)	❍ reproductive effects: __ mutagen __ teratogen __ germ cell
❍ flammable __liquid __ solid __gas (CAT: ___)	❍ self heating (CAT: ___)
❍ toxic metal (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver; *RCRA waste*)	❍ __toxic __acutely toxic (CAT: ___)
❍ lachrymator	❍ __unstable __highly unstable (select one)
❍ oxidizer __liquid __ solid __gas (CAT: ___)	❍ water reactive (CAT: ___)
❍ peroxide, peroxide forming __liquid __ solid __gas	❍ unknown hazard
❍ target organ effect: __ hepatotoxin __ nephrotoxin __ neurotoxin __ hematopoietec __lungs, skin, eyes, mucous membranes	

Biological Hazards: Name of Organism:_____ BSL:_____

❍ tissue culture: cell:	❍ virus	❍ fungus	❍ Animal (live - IACUC Approval):
❍ rDNA: IBC approval:	❍ bacteria	❍ yeast	❍ Animal tissue
❍ human blood, OPIM	❍ toxin	❍ select agent	❍ Other:

Process Hazards: Specify source when necessary.

❍ machinery/ tools	❍ high vacuum, high pressure
❍ high noise levels	❍ cryogenic
❍ compressed gas cylinders	❍ high voltage, high current
❍ other:	❍ high temperature, exothermic
❍ nonionizing radiation: ❍ microwave ❍ ultrasound ❍ ultraviolet ❍ infrared ❍ laser (Class:)	
❍ ionizing radiation: ❍ x-ray ❍ sealed RAM ❍ unsealed RAM	

Health and Safety Requirements:

❍ eye protection __glasses __goggles	❍ gloves, type:	❍ respirator, type:
❍ face shield	❍ earplugs/muffs	❍ protective clothing, type:
❍ shield (explosion, blast or splash)	❍ local ventilation, type:	❍ emergency lights
❍ radiation badge	❍ warning signs, lights, alarms	❍ medical surveillance
❍ decontamination	❍ ultraviolet light	❍ exposure monitoring
❍ fume hood, insp:	❍ biosafety cabinet, insp.:	❍ other:

Disposal Procedures:

❍ chemical hazardous waste (EPA Listed, flammable, toxic, corrosive, or reactive)	❍ acutely hazardous waste (EPA P List)	❍ regulated medical waste __ Red Bag __ Sharps Container
❍ neutralize with:	❍ other:	❍ autoclave & regulated medical waste

Experience: Which of the following are you relatively inexperienced with or are not previously documented?

❍ chemicals or synergistic effects	❍ quantities used	❍ procedures
❍ concentration used	❍ equipment	❍ other

Always refer the manufacturer's Safety Data Sheet (SDS) for chemical safety information. Contact EH&S or additional information. Lab Safety web site: http://www.stonybrook.edu/ehs/lab/

[1] Additional sources for safety information:
http://www.cdc.gov/niosh/ipcs/icstart.html
http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database

How to Use the Safety Protocol Templates

Safety protocols are required for laboratory procedures. There is no required format for the safety protocols, but information on the hazards of the materials and process equipment, required safety controls (engineering controls, personal protective equipment, etc.), handling precautions, emergency procedures and waste disposal must be included. EH&S has provided 3 different formats that can be used to develop a safety protocol. The Principal Investigator or Laboratory Supervisor may choose which format to use, or develop a different format that includes the safety information.

The first format (SOP-1) is very formal and is similar to Standard Operating Procedures (SOP) found in general industry. It includes the step by step procedures for conducting the laboratory procedure in addition to the required safety information. The template includes a brief description of what should be included in each SOP section. Remember to delete these instructions when creating the SOP. High hazard operations should use this format.

The second format (SOP-2) includes the required safety information but no procedural information. The user is required to fill in each section. The laboratory does not need to use this table version. Any format that includes each of these sections is acceptable.

The third format (SOP-3) includes a list of chemical, biological and process hazards. The user must select the hazards for the procedures, along with the health and safety requirements. This format is useful for low to medium hazard procedures, but may not provide enough information for high hazard operations.

All safety protocols should be reviewed at least annually. The safety protocols must also be reviewed when:

- There is a change, substitution, or deletion of any of the ingredient chemicals in a procedure.
- There is a substantial change (25% or more) in the quantity of chemicals used.
- There is a failure of any of the equipment used in the process, especially such safeguards as fume hoods or clamp apparatus.
- There are unexpected test results, in which case a review of how the new result impacts safety practices must be made.
- When members of the laboratory staff become ill, suspect exposure, detect a chemical's odor, or otherwise suspect a failure of any safeguards.

The user should review the information on the EH&S web site “Hazard Reviews and Safety Protocols” (http://www.stonybrook.edu/ehs/lab/general-lab-safety/hazard-reviews.shtml) before completing the safety protocol.

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