

Creating a SOP from the EHS Template

I highly recommend that labs initially answer the question from the SOP generator in Word or similar program and copy the materials over to the SOP Generator once they are ready to finish the SOP.

Under Documents

CBC Safety Group- Documentation

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Type: Any State: Published Title...

Title	Type	Status	Tags	Actions
Chemical Hygiene Plan	Lab Plan	✓ Document valid until 3/2/2023		View Copy New Version/Edit Archive
Flammable SOP	SOP	✓ Document valid until 2/10/2025	 	View Copy New Version/Edit Archive
Hazard Evaluation & Assessment Tool (HEAT)	HEAT	✓ Document valid until 2/11/2023		View Copy New Version/Edit Archive



1 50 per page

Starting a SOP

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CBC Safety Group- Documentation Documents






- + Chemical Hygiene Plan
- + Hazard Communication Plan
- + Standard Operating Procedure
- + Hazard Evaluation & Assessment Tool (HEAT)

Type: Any

State: Published

Title...


Title	Type	Status	Tags
Chemical Hygiene Plan	 Lab Plan	✓ Document valid until 3/2/2023	
Flammable SOP	 SOP	✓ Document valid until 2/10/2025	 
Hazard Evaluation & Assessment Tool (HEAT)	 HEAT	✓ Document valid until 2/11/2023	



Naming the SOP

Document Title ×

New Title:

Standard Operating Procedure



 Save  Cancel

Please give the SOP a name- Don't just leave it SOP.

This page just tells what we will be filling out.
Nothing other than continue needs to be clicked on
this page

Edit Document



Standard Operating Procedure

Introduction & Requirements

Welcome to the interactive Standard Operating Procedure (SOP) template designed to assist you in the development of a lab-specific Standard Operating Procedure for laboratory use. SOP's help promote consistent execution of a process or procedure, regardless of temporary or permanent personnel changes. SOP's also ensure conformance to good laboratory practices, reduce work error, improve safety, data comparability, credibility, and defensibility. Before you begin you may need to gather information about each of the sections of the SOP below. This information can be obtained from a variety of sources including; Safety Data Sheet (SDS); scientific literature, regulations, manufacturer and subject matter experts. When developing your SOP consider the purpose of the document. For example, what will the SOP be used for? Is it for a specific chemical, operation, procedure or general use? The remainder of this template will guide you through each section prompting you for detailed information about each of the topics. You can read more by visiting or [SOP page](#).

Sections of the Standard Operating Procedure:

- [Purpose \(Chemical, Operation, Process or Generic\)](#)
- [SOP Name](#)
- [Description of work & Hazards](#)
- [Occupational Exposure Effects](#)
- [Handling & Preparation Instructions](#)
- [Instructions for operation \(if required\)](#)
- [Storage Information](#)
- [Engineering Controls](#)
- [Personal Protective Equipment \(PPE\)](#)
- [Spills & Decontamination Procedure](#)
- [Waste and Disposal Procedure](#)
- [Emergency, First Aid & Life Safety](#)



✕ Quit

▶▶ Continue

SOP Type

Edit Document



Standard Operating Procedure

Purpose

What is the purpose of your new Standard Operating Procedure (SOP):

Example(s):

Chemical Specific: developed for a specific hazardous chemical being used or stored in the laboratory (i.e. Formaldehyde, Acrylamide, Ethidium Bromide, Hydrofluoric Acid)

Lab Specific Operation: developed for a hazardous lab-specific operation routinely being conducted (i.e. Electrophoresis, Cryogenic)

Lab Specific Equipment: developed for a hazardous lab-specific equipment routinely in use (i.e. Centrifuge, Glove Box, HPLC, Rotavapor)

Lab Specific Process: developed for a hazardous lab-specific operation routinely being conducted (i.e. Extraction, Distillation, Staining, Titration)

Generic Use SOP: developed for the general use and storage of hazardous chemicals with similar health and physical properties (i.e. Corrosives, Flammable liquids, Compressed Gases)



- Chemical Specific
- Lab Specific Operation
- Lab Specific Equipment
- Lab Specific Process
- Generic Use SOP



What type of SOP will this be?

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Standard Operating Procedure

Chemical SOP Name

Enter the name of your Chemical SOP:

Example(s):

Chemical Names:

- Acrylamide
- Ethidium Bromide
- Hydrofluoric Acid
- Formaldehyde



What is the name of your Chemical SOP? (i.e. Chloroform, Hydrogen Sulfide, Formaldehyde)

Type Chemical name here

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Choose the Hazards

Standard Operating Procedure

Description of Work & Hazards

Next briefly describe the proposed work and check all applicable hazards. How does *your* laboratory (lab-specific) plan to conduct this type of work and what are the associated hazards?

Example(s): Note: it is not necessary to detail PPE or Engineering control requirements in this section those requirements will be detailed in a later section.

- Formaldehyde is used to preserve mouse tissues and other biological samples. A 5% buffered formalin solution will be kept in a 5 gallon carboy on the side of the sink and should only be opened inside the fume hood.
- Ethidium Bromide will be used to visualize nucleic acid bands in electrophoresis and perform nucleic acid separation.
- Acrylamide will be used in the polymerized form to analyze the size of proteins and protein-DNA complexes in gel electrophoresis.
- Nitric acid will be used to digest samples, stabilize elements in solution and clean instrument components.
- Hydrofluoric Acid will be used to etch and electropolish aluminum alloys.
- N2 compressed gas cylinders are used in FPLC and single molecule flow cells construction and to dry tubing, glassware and fluorimeter cuvettes.

Describe the lab specific work

Choose all the hazards that apply to this work

- Biohazard
- Compressed Gas
- Corrosive
- Cryogenic
- Electrical Hazard
- Environmental Hazard
- Explosive
- Flammable
- Harmful
- Health
- Irritant
- Oxidizing
- Pyrophoric
- Radioactive
- Toxic
- Water Reactive

Exposure

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Standard Operating Procedure

Occupational Exposure Effects

Describe the occupational exposure effects. This information can be found in the following sections of the Safety Data Sheet (SDS):

Section 2 – Hazard(s) identification: includes the hazards of the chemical and the appropriate warning information associated with those hazards.

Section 4 – First-aid measures: describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical.

Section 11 – Toxicological information: identifies toxicological and health effects information or indicates that such data are not available. This includes routes of exposure, related symptoms, acute and chronic effects, and numerical measures of toxicity.

Acutely Toxic Effects (example): Bromide salts (bromism) are considered to be an acute oral toxin. Systemic effects of the bromide ion include drowsiness, irritability, ataxia (loss of muscle co-ordination), vertigo, confusion, mania, hallucinations and coma. Other effects include skin rash, neurological symptoms, sensory disturbances. Very bitter taste is likely to give early warning of accidental ingestion.

Chronic Toxic Effects (example): Long term exposure may result in irreversible effects. This material may produce mutagenic effects. Exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis).



Routes of Exposure (Choose all that apply)

- Contact (Skin/Eye)
- Inhalation
- Ingestion
- Injection
- Not Applicable

Acute Toxicological Effects (if none type N/A)

Chronic Toxicological Effects (if none type N/A)

Quit

Continue

Handling and Prep Instructions

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Standard Operating Procedure

Handling & Preparation Instructions

Detail the lab specific handling or preparation instructions. This can describe how you prepare stock solutions, setup an experiment or handle a compressed gas cylinder.

Example(s): *Note: PPE requirements will be detailed in a later section.*

- Cylinders should be stored in an upright position and secured through the use of chains or straps. Cylinder caps should remain on the cylinder at all times unless the cylinder is in use. Transport compressed gas cylinders using designated equipment. Never carry or "walk" cylinders by hand.
- THF is diluted in water to 50% and 80% solutions and is then added directly to tissue samples for ultramicroscopy processing.
- Formamide is added directly to hybridization buffer (50%) during in situ hybridization.
- The ultrasonic transducer operating temperature should be between 5 C and 40 C and is for frequencies between approximately 600 kHz to 3 MHz, maximum power is 50 W. Otherwise, maximum power is denoted on the transducer label. Fluid medium must be in full contact with the membrane surface. Bubbling on the membrane surface must be avoided. Solids must not be in direct contact with the membrane surface.

Describe any lab specific handling or preparation instructions (If none type N/A)

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Storage Instructions

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Standard Operating Procedure

Storage Information

Next describe where and how the chemicals used in this Chemical will be stored?

Examples:

- Keep container tightly closed. Keep container in a cool, well-ventilated area. This chemical will be stored in BRT 3035 in the designated storage area underneath the chemical fume hood.
- Silver nitrate should not be stored above eye level and in a cool, dry location. This chemical will be stored in room 220 VMAB under the fume hood.
- All flammable liquids are to be stored in the dedicated flammable storage cabinet located in room 100 CBEC.
- All corrosives will be segregated away from bases and stored in the designated corrosive cabinet located in 250 BMEC.
- Corrosives should be stored in the dedicated acid cabinet (375 Scott Labs) away from ignition sources, oxidizers and water sources. Segregate acids and bases and never store above eye level. All containers must be closed and labeled.



Describe how and where the chemicals used will be stored (if none type N/A)

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Engineering Controls

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Standard Operating Procedure

Engineering Controls

What if any **Engineering Controls** are required, locations and the designated area for this work.

Example(s)

Engineering Control

- Chemical Fume Hood
- Local Exhaust Ventilation
- BioSafety Cabinet
- Glove Box
- Gas Cabinets

Building & Room

MacQuigg 560
CBEC 470
BRT 250
Scott Labs 376
Physics Research 170

Designated Area

Fume hood only
East bench top
Inside the BSC
Glove box storage and use only
Far west wall inside gas cabinet



Choose which Engineering Controls will be required

- This procedure will not require the use of an Engineering Control
- Chemical Fume Hood
- Local Exhaust Ventilation (Snorkel, Slotted or Canopy Hood)
- Gas Cabinet or Ventilated Enclosure
- Downdraft Table
- Other

Where are the Engineering Controls located? (Room and Building)

Specify the designated area (Inside the fume hood, BioSafety cabinet, Entire Lab, Benchtop)

PPE

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Standard Operating Procedure

Personal Protective Equipment (PPE)



Detail the specific Personal Protective Equipment (PPE) requirements:

Example(s): Note: Some of this information can be located in Section 8 (Exposure controls/personal protection) of the SDS and some and is considered lab-specific.

Other Resources: [Ansell Glove Selection Tool](#)
[VWR Chemical Glove Resistance Guide](#)

- Eye & Face Protection: Chemical Splash Goggles, Safety glasses, Face Shield
- Hand Protection: Nitrile gloves, Butyl Rubber gloves, PVC, Latex
- Body Protection: Flame resistant Lab Coat, Butyl Rubber Apron, PVC/Polyester Apron, Long pants
- Foot Protection: Closed toe shoes, Steel toe boots

(if none for any of the items below type N/A)

What Eye & Face Protection is required? (i.e. Safety Glasses, Chemical Splash Goggles etc)

What Hand Protection is required? (i.e. Nitrile, latex, PVC, Butyl Rubber etc.)

What Body Protection is required? (i.e. Lab Coat, PVC Apron, Long Pants etc.)

What Foot Protection is required? (i.e. Closed-toe shoes, Steel toe boots etc.)

Spill Response

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Standard Operating Procedure

Spills & Decontamination

Describe the Spill cleanup and Decontamination procedure:

Example(s): Note: *Some of this information can be found in Section 6 (Accidental release measures) of the SDS and some is considered lab-specific.*

Spills less than 1 gallon: Don all required PPE outlined in this SOP and post appropriate spill signage. Locate the chemical spill supplies in the 5 gallon bucket under the sink. All spills less than 1 gallon should be cleaned up immediately. To clean and contain a flammable solvent spill use absorbent materials found in the spill kit. Place all absorbent waste into the 5 gallon bucket. Use soap and water to clean the contaminated surface. Place any additional waste into the bucket and label the contents. Contact EHS for a waste pickup.

Spills greater than 1 gallon: Alert all lab personnel and evacuate the space and shut the door (if necessary). Before leaving ensure all fume hoods are functioning for additional ventilation. Locate the the chemical spill kit under the sink and post the chemical spill sign on the outside of the door. Contact the Environmental Health and Safety Emergency Response Team and report the spill.

Chemical Specific spill procedure: Outline the lab-specific process that is used to clean this chemical. PPE requirements, signage, spill kit location, spill materials needed, decontamination process and waste handling.



Describe a small spill (less than 1 gallon) cleanup & decontamination procedure

Describe a large spill (greater than 1 gallon) cleanup & decontamination procedure

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Waste Disposal

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Standard Operating Procedure

Waste & Disposal

How and where will waste will be collected and disposed:

Example(s):

- Collect all contaminated materials in ridged leak-proof container, label the container as "Acrylamide waste". Store the waste container in the designated fume hood inside room 330. Submit a chemical waste pickup for disposal through EHS Online.
- HF waste must be collected and disposed of using an appropriate specifically labeled, leak-proof container. Label the contents as "HF Waste". Segregate waste in the designated waste collection area user the bench top in room 620. Submit a chemical waste pickup for disposal through EHS Online.
- All compatible flammable liquid waste must be collected in the labeled red 5 gallon waste container located under the fume hood in room 160. Waste is to capped at all times. Once the container is full submit a chemical waste pickup for disposal through EHS Online.



Describe the Waste Collection & Disposal Procedure (If none type N/A)

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Emergency Contact and Equipment

Standard Operating Procedure Emergency, First Aid & Life Safety Equipment

Emergency, First Aid & Life Safety Equipment:

Example(s): Note: First-aid measures can be obtained from Section 4 (First aid measures) of the SDS. Emergency and Life Safety Equipment are considered lab-specific.

- If this product comes in contact with the eyes immediately hold eyelids apart and flush the eye continuously with running water for 15 minutes. The eyewash station is located next to the sink in room 230.
- If skin contact occurs and the chemical is life threatening, immediately call 911. Remove all contaminated clothing, including footwear. Flush the affected area with soap and water. Seek medical attention in event of irritation.
- Minor cuts and burns can be treated using the first aid kit located on the wall near the door to room 120. For any life threatening injuries call 911 immediately.
- In the event of an HF skin exposure quickly wash the affected area with excess water. Remove and dispose of contaminated clothing by placing them in a plastic bag. Apply liberal amounts of Calgonate gel to the area as soon as possible. Call 911 for medical attention.



Name of the contact person in the event of an emergency

Phone number of the emergency contact person

What Life Safety Equipment is available? (Choose all that apply)

- Eyewash Station
- Safety Shower
- Fire Extinguisher (Class A, B & C)
- Fire Extinguisher (Class D)
- None

Where is the Life Safety Equipment located? (Room & Building)

First aid continued

See SDS for Material for assistance with this section.

First Aid Measures for SKIN contact (If none type N/A)

First Aid Measures for EYE contact (If none type N/A)

First Aid Measures for INHALATION (If none type N/A)

First Aid Measures for INGESTION (If none type N/A)

✕ Quit

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If you have any questions, please reach out to the Chemical Safety Coordinator.