

# SOP Guidance Manual



For the purposes of research safety, an SOP is a written set of procedures that explains **how to utilize and manage hazardous materials, processes, and procedures** to prevent or minimize health and safety concerns. The development and use of SOPs are integral parts of a successful safety program and **are required by state and federal** regulatory agencies. Safety SOPs are intended to inform and educate laboratory personnel about hazards in their workplace and how to prevent exposure. Reviewing SOPs is an essential element of lab-specific training and all staff must be trained on the SOPs applicable to their work.

## THE ROLE OF A RISK ASSESSMENT

A risk assessment is the foundation of a good SOP. It is the process of evaluating the potential risks that may be associated with an activity. It is important to note the difference between a hazard and a risk. For example, a hazard associated with concentrated hydrochloric acid is skin corrosion. If one procedure calls for the use of 100-mL of concentrated hydrochloric acid, and another procedure calls for the use of 1-mL of concentrated hydrochloric acid, and both will be used in similar ways, which poses the greater risk during handling? The **hazard** cannot be reduced, it can only be eliminated. However, the **risk** associated with the hazard can be reduced. Once the hazards have been identified, and the risks associated with them have been determined, you can start finding ways to control exposure.

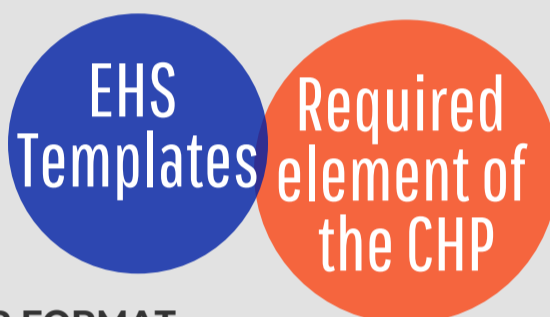
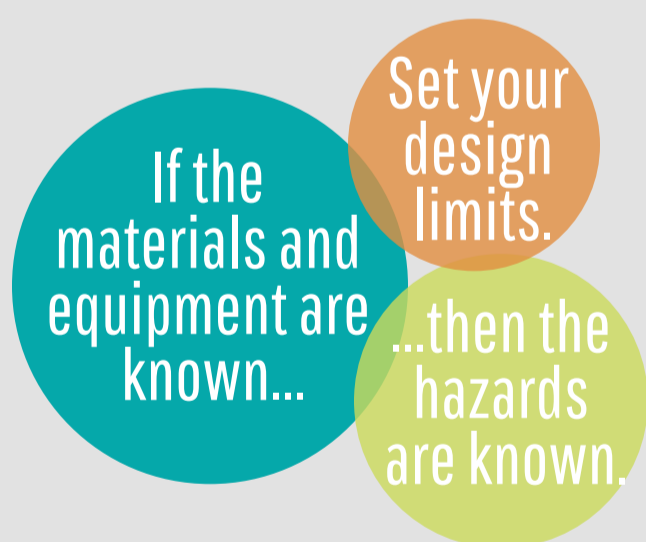


## SOPS IN RESEARCH

SOPs pose a unique challenge in the research environment. Often, research labs will not have a set of instructions to work with and may use a variety of techniques during an experiment. However, SOPs can still be used (and must be used) during research by setting your limitations.

If the materials used are known, then the hazards are also known. The exact quantities and conditions between experiments may vary, but limits can be placed based on the estimated needs. These limits will help identify the associated risks. Can you set an operating temperature range? If different agents within a chemical class are needed for your reaction, can you list the possible agents that may be used? Do you have a lower or upper volume limit for your experiment? What is the allowable mixing/heating time frame? Incorporating as much step-by-step detail as possible based on your experimental limits is essential for determining the risks of an experiment.

Once the research expands beyond the set scope, the SOP should be reevaluated and a new risk assessment should be performed.



## SOP FORMAT

The level of detail of an SOP is dictated by the complexity of the procedure as well as the hazardous nature of the material or equipment involved. An SOP may cover:

- 1) A specific procedure or experiment
- 2) A generic procedure covering several hazards
- 3) A generic use of a chemical or class of chemicals with similar hazards

It is highly recommended to use EHS's [SOP templates](#). If using your own template, the following elements must be included:

- Principal Investigator, location where the experiment will occur and last review date
- Description of scope of work
- Risk/hazard identification
- Engineering controls and PPE
- Procedural steps in as much detail as possible - include circumstances that require prior approval, designated work areas, etc. (see examples)
- Transport, receiving and storage requirements
- Waste determination and disposal procedure
- Emergency procedures

SOPs are a required element of the chemical hygiene plan and must be easily accessible to all lab personnel. Please include a note in your LATCH Risk Assessment that identifies where SOPs can be found.

## RESPONSIBILITIES

SOPs should be written by someone who has sound knowledge and experience with the material, equipment, and related procedures. The **Principal Investigator (PI)** or Area Supervisor is ultimately responsible for the implementation of SOPs and should review the information to determine if it is accurate and adequate.

PIs are also responsible for ensuring that all lab staff are appropriately trained on the application of an SOP. A means for **documenting training** on the SOP must be developed. This can be either a paper-based or electronic method of record-keeping.

**The lab staff** is responsible for attending necessary training, reviewing all applicable SOPs and ensuring that requirements outlined within an SOP are being followed. Questions or concerns must be shared with the PI prior to commencing an experiment.

## RESOURCES

SOP templates and examples can be found on our website at:

<https://www.ehs.ufl.edu/departments/research-safety-services/chemical-and-lab-safety/chemical-safety/standard-operating-procedures/>

If additional assistance is needed, please contact Mark Yanchisin (mark@ehs.ufl.edu) to schedule an appointment.

It is our goal to help you progress research in a safe and healthy manner!