

In accordance with the UC Regents Agreement, SOPs must meet the requirements specified in 8 CCR 5191 and be developed, reviewed, approved and signed in a specific way. Faculty/Laboratory Supervisors are responsible for ensuring that all SOPs follow minimum requirements, SOPs are updated/changed as needed, and all steps are followed.

## Standard Operating Procedures

SOPs must meet the following minimum requirements:

- Written** by most experienced Laboratory Personnel
- Reviewed** by Qualified Personnel
- Approved** and signed by Faculty/Laboratory Supervisor
- Signed** by Laboratory Personnel

## Updated / Changed SOPs

SOPs must be amended under the following conditions:

- Changes in work conditions or experiment (*e.g., under pressure, temperature increase, etc.*) which are outside the parameters set in the SOP
- New equipment or methods (*e.g., vacuum chamber*)
- Use of different chemicals (*e.g., change of experiment or process*)
- When exposure or injury or illness may occur
- When quantities on scale-up beyond the equipment or apparatus limits (*e.g., use of higher quantities*)
- Application has not been previously evaluated and approved

## Steps to building an SOP

- Steps 1, 2, & 3:** Conduct a Hazard Assessment reviewing manufacturer's use/handling recommendations and PPE needs
- Steps 4 & 5:** Specify use locations engineering controls (e.g., fume hood and/or glove box) and consider special handling requirements
- Steps 6 & 7:** Define emergency procedures for medical attention and spill response
- Step 8:** Outline hazardous waste disposal guidelines and refer to <http://ehs.ucr.edu> (under "Waste Pickup")
- Step 9:** Determine what documents should be reviewed or if PI should be notified before use
- Step 10:** Determine if a designated storage area is needed including storage labeling
- Step 11:** Reference current SDS and refer to <http://ehs.ucr.edu> (under "SDS")
- Step 12:** Insert protocol or proposed use of chemical
- Step 13:** Define maximum quantity allowed before Faculty/Laboratory Supervisor consultation is required
- Step 14:** Ensure SOP is signed and dated by Faculty/Laboratory Supervisor
- Step 15:** Review SOP with laboratory personnel and document training by obtaining signatures along with training date
- Step 16:** Maintain approved and completed SOPs in the Laboratory Safety Notebook in a visible location that is readily accessible

**Steps 1,2, & 3**  
 Conduct a Hazard Assessment reviewing manufacturer's use/handling recommendations and PPE needs

**Steps 4 & 5**  
 Specify use locations engineering controls (e.g., fume hood and/or glove box) and consider special handling requirements

**Steps 6 & 7**  
 Define emergency procedures for medical attention and spill response

**Step 8**  
 Outline hazardous waste disposal guidelines and refer to <http://ehs.ucr.edu> (under "Waste Pickup")



**[CHEMICAL NAME]**  
**STANDARD OPERATING PROCEDURE**

Type of SOP:    Process    Hazardous Chemical    Hazard Class

1. HAZARD OVERVIEW
2. HAZARDOUS CHEMICAL(S) OR CLASS OF HAZARDOUS CHEMICAL(S)
3. PERSONAL PROTECTIVE EQUIPMENT (PPE)
4. ENGINEERING/VENTILATION CONTROLS
5. SPECIAL HANDLING PROCEDURES AND STORAGE REQUIREMENTS
6. SPILL AND INCIDENT PROCEDURES
7. DECONTAMINATION
8. WASTE DISPOSAL
9. PRIOR APPROVAL/REVIEW REQUIRED
10. DESIGNATED AREA
11. SAFETY DATA SHEETS
12. DETAILED PROTOCOL

All lab workers who will be using [chemical name] must review [chemical name] and the associated training sheet. Lab workers must have specific training on the handling of [chemical name] and understand the hazards.

Lab workers using [chemical name] must demonstrate competence to the Principal Investigator or designee by being able to 1) identify the hazards and list any particularly hazardous handling techniques (use of a schlenck line, rotary evaporation, canula transfer, extremes of pressure or temperature, etc.), 2) list the foreseeable emergency situations, 3) describe the proper response to the emergency situations, and 4) know the control measures to minimize the risks.

The research laboratory requires variation in reaction conditions to develop and optimize new chemical or biological transformations. The researcher must seek literature precedent for reaction conditions that have reasonable similarities to new chemistry that is planned with [Chemical Name] described in this SOP. The researcher must also consult the PI or designated, experienced research coworker for approval to proceed with chemical or biological transformations that have little literature or local research group precedent. PI approval must also be obtained for significant scale-up (PI defines factor) of new chemistry or biological transformations.

[Chemical Name] SOP  
PI Name:
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**Step 9**  
 Determine what documents should be reviewed or if Faculty/Laboratory Supervisor should be notified before use

**Step 10**  
 Determine if a designated storage area is needed including storage labeling

**Step 11**  
 Reference current SDS and refer to [ehs.ucr.edu/services/msds.html](http://ehs.ucr.edu/services/msds.html)

**Step 12**  
 Insert protocol or proposed use of chemical

