**STANDARD OPERATING PROCEDURE TEMPLATE**

|  |  |  |  |  |  |  |  |  |
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| **I.** | **Contact Information** | | | | | | | |
| **Procedure Title** | | | | | | |  | |
| **Procedure Author** | | | | | | |  | |
| **Date of Creation/Revision** | | | | | | |  | |
| **Name of Responsible**  **Person** | | | | | | | (The PI, Lab Supervisor, or Autonomous Researcher) | |
| **Location of Procedure** | | | | | | | *(Building and room number)* | |
| **Approval Signature** | | | | | | | *(Required for New SOPs)* | |
| **II.** | **THIS STANDARD OPERATING PROCEDURE (SOP) IS FOR A:** | | | | | | | |
| **Specific laboratory procedure or experiment**  **Examples: synthesis of chemiluminescent esters, folate functionalization of polymeric micelles, etc.**  **Generic laboratory procedure that covers several chemicals**  **Examples: distillation, chromatography, etc.**  **Generic use of specific chemical or class of chemicals with similar hazards**  **Examples: organic azides, mineral acids, etc.** | | | | | | | | |
| **III.** | | **Applicable SOPs to This Procedure** | | | | | | |
| **Acutely Toxic Substances** | | | | | | | **Carcinogens** | |
| **Combustibles and Flammables** | | | | | | | **Compressed Gases** | |
| **Corrosives** | | | | | | | **Cryogenic Liquids** | |
| **Ethidium Bromide** | | | | | | | **Highly Reactive or Unstable Substances** | |
| **Hydrofluoric Acid** | | | | | | | **Irritants** | |
| **Reproductive Toxins** | | | | | | | **Specimen Preservatives** | |
| **Sensitizers** | | | | | | | **Other** | |
| **IV.** | | | **SAFETY LITERATURE REVIEW** | | | | | |
| List all references you are using for the safe and effective design of your process or experiment, including safety literature and peer-reviewed journal articles.  **Suggested Safety References include:**   * National Research Council. *Prudent Practices in the Laboratory: Handling and Disposal of Chemicals*. Available online at <http://www.nap.edu>. * University of Tampa General Use Standard Operating Procedures. Available online at [http://utweb.ut.edu/chemicalsafety](http://utweb.ut.edu/chemicalsafety/)/ * University of Tampa EH&S. Electronic Material Safety Data Sheets. Available online at: <http://utweb.ut.edu/chemicalsafety/> * Canadian Centre for Occupational Health and Safety. Web Information Service. Available online at <http://ccinfoweb.ccohs.ca>. * Lewis, Richard J. *Sax’s Dangerous Properties of Industrial Materials*. Available online at [http://www.knovel.com](http://www.knovel.com/). * National Oceanic and Atmospheric Association. CAMEO Database of Hazardous Materials. Available online at <http://cameochemicals.noaa.gov>. * Pohanish, Richard P. *Sittig’s Handbook of Toxic and Hazardous Chemicals and Carcinogens*. Available online at <http://www.knovel.com>. * The Laboratory Chemical Safety Toolkit is an on-line compendium to Stanford University’s formal Chemical Hygiene Plan (CHP). This toolkit provides guidance to Principal Investigators (PIs)/ Laboratory Supervisors and laboratory personnel <http://chemtoolkit.stanford.edu/> * U.S. National Library of Medicine. TOXNET Chemical, Toxicological, and Environmental Health Data. Available online at <http://toxnet.nlm.nih.gov>. | | | | | | | |
| **V.** | | | **GENERAL HAZARD CONTROL** | | | | | |
| [FOLLOWING GUIDANCE TEXT MAY BE DELETED]  Describe the possible risks involved with failure to follow a step in the SOP. List all physical and health hazards associated with the materials and procedures used in this SOP. Examples of potential hazards include: toxicity, reactivity, flammability, corrosively, pressure, etc. | | | | | | | | |
| **VI.** | | | **Engineering & Ventilation Controls** | | | | | |
| [FOLLOWING GUIDANCE TEXT MAY BE DELETED]  Specify whether the process requires a fume hood, biological cabinet, local exhaust ventilation or other direct means to eliminate airborne release of contaminants.  **Review safety literature and peer-reviewed journal articles to determine appropriate engineering and ventilation controls for your process or experiment. Guidance is available from the chemical SDSs and General Use SOP.** | | | | | | | | |
| **VII.** | | | **SAFETY EQUIPMENT** | | | | | |
| Check the location/accessibility/certification of the safety equipment that serves your lab:   |  |  |  | | --- | --- | --- | | **Item** | | **Status** | | **Laboratory Fume Hood/Glove Box or other Ventilation Control** | Location:             *Check sticker to ensure that hood was certified within last 12 months.* | | | **Eyewash/Safety Shower** | Location:  *Ensure that it is accessible, not blocked. & Check tag that it has been tested within last month.* | | | **First Aid Kit** | Location: | | | **Chemical Spill Kit** | Location: | | | **Fire Extinguisher** | Location: | | | **Telephone** | Location: | | | **Evacuation Exit Maps** | Location: | | | **Gas Shut-Off Controls** | Location: | | | **Fire Alarm Manual Pull Station** | Location: | | | **Other:** *Describe* | Location: | | |  | | | | | | | | | | | |
| **VIII.** | | | **PROTOCOL FREQUENCY** | | | | | |
| |  |  | | --- | --- | | **Frequency:** | □ one time □daily □weekly □monthly   * other:\_\_\_\_\_\_\_\_\_\_\_\_\_ | | **Duration per Experiment:** | \_\_\_\_\_\_\_\_\_\_ minutes; or \_\_\_\_\_\_hours | | | | | | | | | |
| **IX.** | | | **PERSONAL PROTECTIVE EQUIPMENT** | | | | | |
| Required personal protective equipment for this process.  Lab Coat  Long pants Close-toed shoes  Gloves; indicate type:  Nitrile  Latex  Butyl Rubber  Thermal  Leather  *Detail Specific Glove Type*  Safety goggles Safety glasses Face shield  Other:  **To assist with your PPE selection, refer to the chemical SDS. Respiratory protection is generally not required for lab research, provided the appropriate engineering controls are employed. For additional guidance on respiratory protection, consult with the CEHSC.** | | | | | | | | |
| **X.** | | | **Step-by-Step Description of Process or Experiment** | | | | | |
| [FOLLOWING GUIDANCE TEXT MAY BE DELETED]  Provide a description of your process or experiment, including its purpose. For each step’s description, include any step-specific hazard, personal protective equipment, engineering controls, and designated work areas necessary for personal safety. | | | | | | | | |
| 1. Describe the next step in the procedure. | | | | | | | | |
| 2. Describe the next step in the procedure. | | | | | | | | |
| 3. Describe the next step in the procedure. | | | | | | | | |
| 4. Describe the next step in the procedure. | | | | | | | | |
| 5. Describe the next step in the procedure. | | | | | | | | |
| 6. Describe the next step in the procedure | | | | | | | | |
| 7. Describe the next step in the procedure | | | | | | | | |
| 8. Dispose of hazardous solvents, solutions, mixtures, and reaction residues as hazardous waste. | | | | | | | | |
| 9. Clean-up work area and lab equipment.  Describe specific cleanup procedures for work areas and lab equipment that must be performed after completion of your process or experiment. For carcinogens and reproductive toxins, designated areas must be immediately wiped down following each use. [PRECEDING GUIDANCE TEXT MAY BE DELETED] | | | | | | | | |
| 10. Remove PPE and wash hands thoroughly before leaving the laboratory. | | | | | | | | |
| **XI.** | | | **SPECIAL HANDLING AND STORAGE REQUIREMENTS** | | | | | |
| Describe special handling and storage requirements for hazardous chemicals in your laboratory, especially for highly reactive/unstable materials, highly flammable materials, and corrosives. [IF NOT APPLICABLE PRECEDING GUIDANCE TEXT MAY BE DELETED.] | | | | | | | | |
| **XII** | | | | **DESIGNATED WORK AREA(S)** | | | | |
| Required whenever carcinogens, highly acutely toxic materials, or reproductive toxins are used. The intent of a designated work area is to limit and minimize possible sources of exposure to these materials. The entire laboratory, a portion of the laboratory, or a laboratory fume hood or bench may be considered a designated area. | | | | | | | | |
| **XIII.** | | | | **EMERGENCY SPILL AND ACCIDENT PROCEDURES** | | | | |
| Health-Threatening EmergenciesExamples: Fire, explosion, health-threatening hazardous material spill or other Immediate Danger | | | | | 1. **Call 911** 2. **Alert people in the vicinity to evacuate** 3. **Activate the local alarm systems** 4. **Call Security at 813-257-7777 or xtn. 7777** 5. **Evacuate to the Emergency Assembly Point located at:** 6. **Remain nearby to provide arriving emergency responders information about chemicals** 7. **Once personal safety is established, call the CEHSC at (813) 842-3528** 8. **Provide local notifications:** Identify the area management staff that must be contacted and include their work and home numbers. This must include the principal investigator and may include the lab safety coordinator, and/or facilities manager. | | | |
| Personnel Injury or Exposure | | | | | | 1. Remove the injured/exposed individual from the area if it is safe to do so because of the medical condition of the victim or the potential hazard to rescuers. 2. **Call 911** 3. Administer first aid as appropriate. 4. Flush contamination from eyes/skin using the nearest emergency eyewash/shower for a minimum of 20 minutes. 5. Remove any contaminated clothing to prevent contaminants from continuing to absorb onto skin. 6. Give medical responders copies of SDSs for all chemicals the victim was exposed to. 7. Report the exposure to the CESHC | | |
| Non-Health Threatening Emergencies | | | | | | Call Security at 813-257-7777 or xtn.7777 to report incident | | |
| Small Spill Clean-Up | | | | | | **Note: Only minor releases can be cleaned up by knowledgeable personnel using readily available equipment:**   1. Notify personnel in the area and restrict access. Eliminate all sources of ignition. 2. Review the SDS for the spilled material, or use your knowledge of the hazards of the material to determine the appropriate level of protection. 3. Wear gloves and protective eyewear. 4. If it will take longer than 15 minutes for you to clean-up, immediately call Security (813) 257-7777 or xtn. 7777 to report the spill, and notify your supervisor. 5. Submit [waste pickup request](http://www.stanford.edu/dept/EHS/prod/enviro/waste/pickup/WastePickup_form.htm) to the CEHSC. | | |
| Chemical Release to the Environment, Sewer Drain, Storm Drain, or Air | | | | | | 1. Notify Campus Security by calling 813-257-7777 (or xtn 7777) which is available 24 hours a day, 7 days a week. 2. Provide local notifications: Identify the PI or other staff that must be contacted and include their work and home numbers. This must include the principal investigator and may include the lab safety coordinator, and/or facilities manager. | | |
| Incident Reporting | | | | | | 1. Report all occupational injuries or illness to laboratory supervisor as soon as practical. 2. Laboratory personnel are encouraged to report "near misses" as they are considered a precursor to actual incidents. 3. Laboratory supervisor is to conduct (or coordinate) an investigation of all incidents and "near misses." The goal of the investigation is to identify and address any deficiencies that may have contributed to the incident. | | |
| Medical Consultation | | | | | | Laboratory personnel who work with hazardous chemicals are to be provided the opportunity to receive medical attention/consultation when:   1. A spill, leak, explosion or other occurrence results in a hazardous exposure (potential overexposure); or 2. Symptoms or signs of exposure to a hazardous chemical develop. | | |
| Building Maintenance Emergencies [i.e. power outages, plumbing leaks, or HVAC failures] | | | | | | Call Security at 813-257-7777 or ext. 7777 | | |
| **XIV.** | | | | **WASTE DISPOSAL** | | | | |
| Describe the quantities of waste you anticipate generating and appropriate waste disposal procedures. Include any special handling or storage requirements for your waste. Contact the CEHSC at 813-842-3528 for questions and additional guidance. [PRECEDING GUIDANCE TEXT MAY BE DELETED]  *Example provided below:* | | | | | | | | |
| Waste Isopropanol | | | | | | Store waste isopropanol in 1 Liter Glass Amber Labeled “Hazardous Waste – Spent Isopropanol | | |
| **XV.** | | | | **DECONTAMINATION PROCEDURES** | | | | |
| Decontamination procedures vary depending on the material being handled. The toxicity of some materials can be neutralized with other reagents. All surfaces should be wiped with the appropriate cleaning agent following dispensing or handling. Waste materials generated should be treated as a hazardous waste. | | | | | | | | |
| **XVI.** | | | | **TRAINING REQUIREMENTS** | | | | |
| **Laboratory Specific Training** *(check all that apply):*  ☑ General Safety & Emergency Preparedness – Annual Orientation Training  ☑ Review of SDS for other chemicals involved in process/experiment  ☑ Review of this SOP  ☑ Other:  The University may require additional safety training depending on the hazardous materials and laboratory-specific processes – consult the PI for more information.  [PRECEDING GUIDANCE TEXT MAY BE DELETED]   |  |  | | --- | --- | | **Location Where Records Maintained:** | 2. CEHSC OFFICE | | | | | | | | | |