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| **Chemical Name: XXXX**  **STANDARD OPERATING PROCEDURES**  **Type of SOP: Hazardous Class Hazardous Chemical Process**  According to the Safety Data Sheet (SDS) for XXXX, special precautions must be taken when working with this chemical. This Standard Operating Procedure (SOP) briefly describes the use of equipment and supplies maintained in the lab/facility, procedures that must be followed, and the responsibilities of personnel when working in these labs/facilities. PI or the designee should **amend this SOP by entering text in the highlighted words in yellow to include specifics for your labs. Users shall** not conduct experiments, even pilot studies, which are not described in this approved SOP. It is essential that all personnel follow the appropriate procedures outlined in this SOP. **Please provide the SDS associated with this chemical to all lab personnel working with it.** | | |
| **PI Information** | | |
| Name: | |  |
| Dept.: | |  |
| PS ID: | |  |
| Date: | |  |
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| **1. PI Responsibilities (Please click the Check Box on every shaded section header.)** | | |
|  | The PI is responsible for training students/employees using the chemical. The training should include a discussion of the known and potential hazards and an explanation of the relevant policies, techniques and procedures including the proper use of personal protective equipment and containment equipment. | |
|  | Students/employees should be trained initially and then annually thereafter. Their knowledge, competence and practices should be evaluated and documented. | |
|  | Implement a safety program and include this information in the chemical hygiene plan. | |
|  | Limit access to authorized users. | |
|  | Minimize the possibility of direct skin or eye contact with the drug or inadvertent ingestion/inhalation. | |
|  | Transportation of the chemical within the facility should be performed using a sealed non-breakable secondary container. | |
|  | Develop Standard Operating Procedures (SOP) for delivery and storage of the chemical. The SOP should have a contingency plan for broken or leaking bottles. | |
|  | Properly label containers and any secondary containers of the chemical. | |
|  | Provide SDS via email to [ehs@uh.edu](mailto:ehs@uh.edu) upon request. | |

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| **2. Chemicals/Hazards** |
| * CAS Number: Click here to enter text. * Form (physical state): Click here to enter text. * Associated UH registrations, e.g. DEA, IACUC, IRB, MTA, MUA, HPR, ASR, etc., if applicable. Click here to enter text.   **Indicate why this is a PHS (there may be more than one category):**     |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | High Acute Toxicity |  | Carcinogen |  | Reproductive toxin | |  | Air Reactive/Pyrophoric material |  | Water reactive |  | Explosive/unstable | |  | Other (specify) |  |  |  |  |   Click here to enter text.  **Indicate other hazards:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Flammable |  | Corrosive |  | Oxidizer | |  | Reactive |  | Temperature sensitive |  | Sensitizer | |  | Other (specify) |  |  |  |  |      * Circumstances of Use:   Click here to enter text. |

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| **3. Engineering Controls** |
| * Work with this chemical in a certified ducted fume hood to avoid exposure to dust generation. * An eyewash/drench hose combination unit must be available in the immediate work area for any work with corrosive materials, including bleach. * If large quantities of corrosives will be used, a safety shower will also be necessary. Contact EHS at 713-743-5858 for a determination of the need for a safety shower if there is not one available. * Review the SDS for the proper fire extinguisher(s) to use with the given material or contact Fire Marshal’s Office (713-743-5858) for assistance.   Please list the locations of the eye wash, safety shower and fume hood below.     |  |  | | --- | --- | | Type | Location (Building and Room Numbers) | | Fume Hood(s) |  | | Glove boxes if applicable |  | | Biosafety Cabinet if applicable |  | | Safety Shower (s) |  | | Eyewash Station(s) |  | | Fire extinguisher(s) |  |   **More lab-specific information regarding storage and segregation to train users:**  Click here to enter text. |

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| **4. Personal Protective Equipment (PPE)** |
| Personal protective equipment is especially important.   * Handle with \_\_\_ Click here to enter text. \_\_\_\_ **gloves (indicate the glove material)**. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. * Wear ANSI approved safety glasses or goggles when handling the chemical. * Lab coats shall be worn. These laboratory coats must be appropriately sized for the individual and be buttoned to their full length. Laboratory coat sleeves must be of a sufficient length to prevent skin exposure while wearing gloves. Full length pants and close-toed shoes must be worn at all times by all individuals that are occupying the laboratory area. The area of skin between the shoe and ankle shall not be exposed. * Respiratory protection may be needed if aerosol or vapor hazard is present and work is conducted outside of a fume hood. If any procedure may pose an external hazard it should be eliminated or strictly isolated. If a potential exposure hazard cannot be eliminated, please contact the EHS Respiratory Protection Program administrator to discuss respiratory protection or to enroll in the program. Program enrollment includes medical evaluation, training, and fit testing for an appropriate respirator. For information see EHS Respiratory Protection Program or email ehs@uh.edu.   **More lab-specific information regarding PPE to train users:**  Click here to enter text. |

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| **5. Work Practice Controls (Preparation and Handling)** |
| **Preparation**   * Consult with your Principal Investigator (PI) to receive approval before working with particularly hazardous substances (PHSs). If possible, use safer chemical alternatives. * Read the relevant Safety Data Sheets (SDS), technical bulletins, and guidance documents to understand how to mitigate the hazards. The SDS must be reviewed before using an unfamiliar chemical and periodically as a reminder. * Perform a hazard analysis and identify the potential failures or weak points in your experimental design. Be prepared to handle accidents. * Limit the amount purchased and do not accumulate unneeded PHSs. * Users of PHSs must be trained in proper lab technique stated in Standard Operating Procedures (SOP) and be able to demonstrate proficiency. * On-the-job training must be completed and documented. * Conduct an emergency drill reviewing the procedures to be taken in an emergency. * Review the location of the emergency equipment (safety shower, eyewash, and fire extinguisher, etc.) listed in Section 3.   **Designated Area**   * All PHS material must be stored and used in a designed work area. * You may designate your entire lab as a designed PHS work area. * Post signage indicating the lab is designated for PHS use.     Click here to enter text. |

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| **6. Work Practice Controls (Storage and Transport)** |
| Keep container tightly closed and store in a secondary containment. Label the chemical bottle, the secondary container, and the secondary containment with the PHS hazards labels. For example: “Carcinogens”. Keep in a cool, well-ventilated area. Separate flammables from oxidizers, acids from bases, organics from inorganics, and reactives from air or water.  **Any incompatible materials or conditions:**  Click here to enter text.  **More lab-specific information regarding storage and segregation to train users:**  Click here to enter text. |

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| **7. Spill and Accident Procedures**  **[Specific cleaning and waste disposal procedures must be determined.]** |
| Chemical spills must be cleaned up as soon as possible by properly protected and trained personnel. All other persons should leave the area. Spill response procedures must be developed based on the chemical and potential spill or release conditions. Clean up spills using contents of the laboratory spill kit. Do not attempt to clean up any spill if not trained or comfortable. If trained and equipped, only clean up small (less than XXX ml) and dilute (less than XXX%) spills that occur in a fume hood by\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. If the spill is larger, more concentrated, or people have been exposed, evacuate the area, and call 911 on campus phone or 713-743-3333 for help. If a person is exposed follow EXPOSURE PROCEDURES in section 8 below.  **SPILL CLEANUP PROCEDURES**  **Small spills:**   1. Close hood sash, cordon off area. 2. If you need help, call EHS (during business hours (M-F/8-5) 713-743-5858, outside business hours call 911 on campus phone or 713-743-3333). Tell them that an XXXX spill has occurred, and you need advice or assistance. Notify supervisor. 3. Personnel must wear a fully buttoned lab coat with sleeves extended to wrists, face shield and safety goggles, neoprene outer gloves and nitrile inner gloves, long pants (or other clothing covering the entire leg), rubber apron, and closed toed shoes. Never use latex gloves. 4. If spill is extensive within the containment, clean all interior surfaces after completion of the spill cleanup. 5. Bag all waste in plastic bags labeled as chemical spill debris and store in fume hood away from incompatible chemicals. Submit request to EHS for “Unwanted Material” pickup.   **Large spills:**   1. Evacuate all personnel from the laboratory and restrict access. Call 911 on campus phone or 713-743-3333 for help. 2. As soon as possible report the spill by notifying EHS (during business hours (M-F/8-5) 713-743-5858, outside business hours 911 on campus phone or 713-743-3333); tell them that a spill has occurred, and that you need help managing the spill. Notify supervisor. 3. Be prepared to provide the following information:  * Name and phone number of a knowledgeable person that can be contacted * Name of chemical spilled, concentration and amount spilled, liquid or solid type spill * Number of injured, if any (refer below to EXPOSURE PROCEDURES) * Location of spill   Any spill incident requires the involved person or supervisor to complete and submit the Injury Forms within 24 hours (8 hours if serious injury or hospitalization) of the incident to Risk Management.  For questions on spill cleanup, contact EHS at 713-743-5858.  **More lab-specific information regarding emergency to train users:**  Click here to enter text. |

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| **8. Exposure Procedures in Case of Emergency** |
| **Provide First Aid Immediately**   * If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. * In case of skin contact, wash off with soap and plenty of water for 15 minutes. Take victim immediately to hospital. Consult a physician. * In case of eye contact, rinse thoroughly with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. * If swallowed, never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.   **Get Help**   1. After first aid measures, seek medical attention if needed at UH Health Center on UH Main Campus or the nearest Emergency Clinics, as appropriate. 2. Call 911 on campus phone or 713-743-3333 or go to nearest Emergency Department to seek medical attention. Give details of exposure:    1. Chemical name and concentration    2. Amount of exposure    3. Route of exposure (skin, eyes, respiratory)    4. Time since exposure 3. Bring the SDS and SOP of the chemical to the Emergency Department. 4. Notify your supervisor as soon as possible for assistance. 5. Secure area before leaving. Lock doors and indicate spill if needed.   **Report Incident to Environmental Health and Safety**   1. Notify EHS immediately after providing first aid and/or getting help.    1. During business hours (M-F/8-5) call 713-743-5858.    2. After hours call 911 on campus phone or 713-743-3333 to be routed to EHS staff on call. 2. For all incidents and near misses, the involved person or supervisor should report to EHS at 713-743-5858.   **More lab-specific information regarding first aid measures to train users:**  Click here to enter text. |

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| **9. Waste Disposal** |
| **WASTE COLLECTION AND DISPOSAL**   1. **PHS Waste Collection**  * Waste bottles of concentrated or dilute solutions of the chemical must be collected by EHS as “Unwanted Material”. * Label with EHS “Unwanted Material” Waste label that states the chemical waste and the primary hazards (corrosive, toxic), PI name. Unwanted Material waste labels are available for on [EHS’s website](https://www.uh.edu/ehls/labs/labels/).  1. **Other PHS waste**   Grossly contaminated gloves, absorbent pads, and all spill cleanup materials are hazardous waste.   * Accumulate waste in a plastic bag. * Label with EHS Unwanted Material Waste label as above.  1. **Disposal**   For chemical waste pickup: Complete Online [waste pickup request form](https://www.uh.edu/ehls/train/waste/index).   1. **Contacts**   For questions regarding chemical and hazardous chemical collection   * visit the EHS [Chemical Waste](https://www.uh.edu/ehls/waste/) website or, * email [ehs@uh.edu](mailto:ehs@uh.edu) or, * call 713-743-5858 |

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| **10. Lab-specific Protocol/Procedure** |
| This SOP must be customized for each lab using XXXX. Use this section to describe or attach what is being done with this chemical, including specific laboratory procedures and quantities used. |

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| Particularly Hazardous  Substance involved? | X YES: | | Blocks #11 to #13 are Mandatory |
| NO: | | Blocks #11 to #13 are Optional. |
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| **11. Approval Required** | | | |
| All staff working with XXXX must be trained on this SOP prior to starting work. They must also be trained on the XXXX SDS, and it must be readily available in the laboratory. All training must be documented and maintained by the PI or their designee. | | | |
| **12. Decontamination** | | | |
| All surfaces and non-disposable equipment will be decontaminated with/by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | | | |
| **13. Designated Area** | | | |
| * All work with XXXX must be done in a designated laboratory, workspace, and fume hood. This work will be conducted in *[room #]*. | | | |
| PI’s Name: | | PISD: | |
| Department: | | Date: | |
| Signature: | |  | |

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| **[Laboratory Name]**  **Documentation of Training\***  **Standard Operating Procedure for XXXX** | | | | | |
| *“I have read and understand this SOP. By signing below, I agree to fully adhere to its requirements.”* | | | | | |
| Last | First | PSID | Email | Signature | Date |
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\* This document, including the signature page with signatures by all involved personnel shall be maintained by the Principal Investigator or Designee, and be submitted to EHS either electronically via the ehs@uh.edu or hard copy upon request.

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| **Template Revision History** | | | |
| Version | Date Approved | Author | Revision Notes: |
| 1.0 | 03/19/2019 | EHLS Chemical Safety | New Template. |
| 1.1 | 06/10/2020 | EHS Chemical Safety | Name & logo change, and review. |
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