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| **STANDARD OPERATING PROCEDURE (SOPs)** | | | | | | | | | | | | | | | | | | |
| Title: Specific Chemical Hazard Template | | | | | | | | | | | | | | | | | | | |
| Document No. | | | Document Page(s): | | | | | Author’s Branch: | | | | | | | | | Effective Date: | | |
| Revision: | | Revision Date: | | | | | Reviewed/Approved by: | | | | | | | | | | | Date: | |
| Overseeing Official’s Signature: | | | | | | | | | | | | Date: | | | Procedure Location: | | | | |
| **Instructions for filling out your SOP** | | | | | | | | | | | | | | | | | | | |
| This template is intended to be filled out with information on chemical hazards within the laboratory. The purpose is to generate a chemical-specific standard operating procedure which is to be followed by each individual handling or potentially exposed to the given chemical. To fill out this template:   * Section 1: Use information from the chemical safety data sheet (SDS) * Section 2: Describe the lab-specific procedure(s) the chemical is used in * Section 3: Attach the SDS for the chemical to this SOP * Section 4: Enter information on the ventilation controls used and/or any alternatives to standard ventilation controls * Section 5: List the PPE that will be worn when working with the chemical. Ensure that any PPE listed is compatible with the chemical. * Section 6: Fill out information on the preparation, usage, storage, and transport of the chemical. Add details for lab-specific procedures. * Section 7: Fill in specific details for spill procedures. Include information such as the location of spill kits, the specific materials that must be used, PPE that must be worn, or specific procedures that must be followed during spill cleanup. * Section 8: No action necessary. * Section 9: Fill in information on waste disposal – customize to the specific procedure and chemical. * Section 10: No action necessary. * Section 11: Fill in information on decontamination and designated work location for the chemical. * Section 12: Document training for all personnel who will handle this chemical. All personnel must sign to indicate they are aware of the hazards and of all general and lab-specific procedures which must be followed when using this chemical. | | | | | | | | | | | | | | | | | | | |
| **1** | **DESCRIPTION OF SPECIFIC CHEMICAL HAZARD INFO for***[chemical name]* | | | | | | | | | | | | | | | | | | |
| *Obtain specific chemical hazard information from SDS*  CHEMICAL NAME: *[chemical name]*  CAS number: *[XXX]*  Routes of exposure: *[XXX]*  How exposure might occur: *[XXX]*  Target organs: *[XXX]*  Signs/symptoms of exposure: *[XXX]*  Select Globally Harmonized System (GHS) - applicable Hazard Pictograms (see SDS Section 2 for pictograms and hazards selection; delete any non-applicable pictograms): | | | | | | | | | | | | | | | | | | | |
| *GHS Pictogram - explosives* | | *GHS Pictogram - flammable* | | | *GHS Pictogram - oxidizer* | | | | | | | | *GHS Pictogram - gas tank under pressure* | | | *GHS Pictogram - corrosive* | | | |
| Explosive metals  Self-Reactive  Self-Heating  Organic Peroxide | | Flammable  Pyrophoric  Emits Flammable Gas  Self-reactive Organic Peroxide | | | Oxidizer | | | | | | | | Gas Under Pressure | | | Corrosive to Metals  Skin Corrosion  Skin Burns  Eye Damage | | | |
| *GHS Pictogram - toxic* | | | | *GHS Pictogram - irritant* | | | | | *GHS Pictogram - carcinogen* | | | | | *GHS Pictogram - aquatic toxicity* | | | | | |
| Acute Toxicity (fatal or toxic) | | | | Irritant (skin and eye)  Skin Sensitizer  Acute Toxicity (harmful)  Narcotic effects  Respiratory Tract Irritant  Hazardous to Ozone Layer | | | | | Carcinogen  Mutagenicity  Reproductive Toxicity  Respiratory Sensitizer  Target Organ Toxicity  Aspiration Toxicity | | | | | Aquatic Toxicity | | | | | |
| **2** | **PROCESS** | | | | | | | | | | | | | | | | | | |
| Describe or attach what is being done with *[chemical name]*, including specific laboratory procedures and quantities used.  *[Æ Click here to enter text Å]* | | | | | | | | | | | | | | | | | | | |
| **3** | **PLANNING AND PREPARATION** | | | | | | | | | | | | | | | | | | |
| Hazardous chemical and specific SOP training will be provided to personnel working with *[chemical name]* and any other personnel authorized or required to be in the laboratory during work with the chemical.  **Attach SDS for *[****chemical name****]* to this SOP.**  Appropriate cleaning method(s) for *[chemical name]* will be determined and supplies for cleaning and spill cleanup of *[chemical name]* will be readily available. | | | | | | | | | | | | | | | | | | | |
| **4** | **ENVIRONMENTAL / VENTILATION CONTROLS** | | | | | | | | | | | | | | | | | | |
| Work with  will be performed in a *[Select ventilation control from dropdown]*.  *[Describe any work outside of hood or exhausted containment and controls put in place to prevent exposure.] [Æ Click here to enter text Å]* | | | | | | | | | | | | | | | | | | | |
| **5** | **PERSONAL PROTECTIVE EQUIPMENT** | | | | | | | | | | | | | | | | | | |
| List the PPE that will be worn when working with *[chemical name]*: *[Customize list]*  **Any gloves must be changed immediately if contaminated, torn, or punctured!** | | | | | | | | | | | | | | | | | | | |
| **6** | **SPECIAL HANDLING PROCEDURES AND STORAGE REQUIREMENTS** | | | | | | | | | | | | | | | | | | |
| **HANDLING**  Preparation   * All preparation of *[chemical name]* solutions will be performed over plastic-backed absorbent pads in a *[Select ventilation control from dropdown]*. Pads will be disposed of after completion of tasks or immediately upon contamination. * Wear chemical appropriate gloves for all procedures involving preparation and handling of *[chemical name].* * Change gloves after each use, or immediately when torn, punctured, or contaminated.   *Describe how [chemical name] will be prepared.*  [Æ Click here to enter text Å]  Use   * A sharps container will be in the immediate vicinity for safe sharps disposal. * The *[Select ventilation control from dropdown]* will be cleaned upon completion of tasks with *[chemical name]*. * All potentially contaminated disposable items will be placed in a waste bag before disposal. * Hands must be washed upon completion of tasks.   **STORAGE**  *[chemical name]* containers will be labeled and stored in a/an *[select storage container from dropdown]* in *[room #]*.  **TRANSPORT**  *[chemical name]* will be transported in labeled and sealed non-breakable secondary containers. | | | | | | | | | | | | | | | | | | | |
| **7** | **SPILL AND ACCIDENT PROCEDURES** | | | | | | | | | | | | | | | | | | |
| Spill and Accident Procedures [*Specific cleaning and waste disposal procedures must*  *be determined*.] | | | | | | | | | | | | | | | | | | | |
| spills must be cleaned up immediately by properly trained and protected personnel who are not sensitive to . 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 spill kit. **Do not attempt to clean up any spill if not trained or comfortable performing the cleanup.**  **High-level hazard spills are spills >100 mL of any material and spills of Particularly Hazardous Substances (PHS) of any volume.**  **If a high-level hazard spill occurs, do not attempt to clean up the spill. Evacuate the area and call the Fire Department for assistance in cleaning up these spills, or if ANY of the below criteria are met:**   1. The employee is uncomfortable 2. Assistance from outside the release area is required 3. The incident is likely to result in an uncontrolled release of hazardous substances 4. Response to a release poses a potential safety or health hazard to the responder   **Fill out information for contacting the Fire Department at your site as appropriate below:**  **Bethesda, MD**  911 on-campus  9-911 off-campus  301-496-9911 (cell phone)  **Baltimore, MD**  911 (cell phone)  9-911 (landline)  **Frederick, MD**  911  **Hamilton, MT**  911  **Research Triangle Park, NC**  911 (landline)  919-541-2800 (cell phone)  **High-level hazard spill response:**   1. Spills >100 mL of any material or spills of Particularly Hazardous Substances of any volume may generate vapors above exposure limits; therefore, these spills may require the use of respiratory protection. 2. Cover spill, if possible, to minimize vapors. If the spill is in a chemical fume hood or biosafety cabinet, close the sash before leaving. 3. Evacuate area and restrict access. Close the windows and doors upon exit. Attend to injured or exposed persons using emergency shower or eyewash. Follow procedures below in Section 8. 4. **MANDATORY: As soon as possible, you must report the spill in a safe area by notifying NIH Division of Fire and Rescue Services (see above)** 5. Stay in close proximity to the site (in a safe area) until directed otherwise by first responders. Notify supervisor. 6. Be prepared to provide the following information:  * Name and phone number of knowledgeable persons 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 section 8). * Location of spill  1. Do not reenter the room until the fire department or appropriate authorities determine that there is no immediate detriment to life or health.   If a person is injured, exposed, or suspected of being exposed to , follow procedures below in section 8.  **As a general guideline, low-level hazard spills are low-level hazard spills that are within a lab or contained area, such as a chemical fume hood, ducted biological safety cabinet, glove box, or other approved containment.**  **Low-level hazard spill response:**   1. Contained spills that are <100 mL of materials that are not PHS, can typically be cleaned up by trained people who are not sensitive to . However, do not attempt to clean up spills requiring respiratory protection. Call the NIH Division of Fire and Rescue Services for assistance. 2. Notify personnel in the area and restrict access. Eliminate all sources of ignition. 3. Review the SDS for the spilled material or use your knowledge of the hazards of the material to determine the appropriate level of protection. 4. Personnel must wear a lab coat or smock, safety goggles, chemical appropriate type gloves and shoe covers as needed when cleaning up spills. 5. **Liquids:** Wipe up spilled liquids with absorbent pads. If using a neutralizing absorbent, cover the spill with the absorbent and allow to set for the prescribed contact time (usually 15 min.), and then scoop up and dispose of properly. 6. **Solids:** Gently cover with wetted paper towels or absorbent pads (unless chemical is water sensitive or reactive) to avoid raising dust and then wipe up.   Clean the spill area thoroughly with *approved cleaning solution* followed by clean water.   1. If spill is extensive within the containment, clean all interior surfaces after completion of the spill cleanup. 2. Double bag all waste in clear plastic bags (NSN-8105-01-195-8730) and attach a filled out chemical waste tag. For waste collection instructions consult the [NIH Waste Disposal Guide](https://orf.od.nih.gov/EnvironmentalProtection/WasteDisposal/Documents/NIH-Waste-Disposal-Guide-2022-508Ready.pdf); for chemical waste pick-up contact (301) 496-4710; for chemical waste assistance call (301) 496-7990. 3. **MANDATORY: You must report the spill to your** [IC Safety and Health Specialist](https://ors.od.nih.gov/sr/dohs/safety/laboratory/Pages/safety_health_specialists.aspx)**.**   **Reporting Requirements:**   * All spills must be reported. * If cleaned up locally (low-level hazard spills only) and there were no suspected or verified exposures or injuries, contact your [IC safety and health specialist](https://ors.od.nih.gov/sr/dohs/safety/laboratory/Pages/safety_health_specialists.aspx?msclkid=01d682c1cfea11ecb80b2fb0c338d43b).   If the spill cannot be cleaned up locally or if anyone was injured, exposed or suspected of being exposed, report to NIH Division of Fire and Rescue Services for your site (see above). | | | | | | | | | | | | | | | | | | | |
| **8** | **EXPOSURE PROCEDURES in CASE of EMERGENCY** | | | | | | | | | | | | | | | | | | |
| * **Provide First Aid Immediately**   + **For sharps injury** (needlestick or subcutaneous exposure), scrub exposed area thoroughly for 15 minutes using warm water and soap.   + **For skin exposure,** if possible, scrub the exposed area thoroughly for 15 minutes using warm water. If an exposure occurs in an area that cannot be washed using a sink, remove contaminated clothing per SDS guidance if applicable. Use the nearest safety shower for 15 minutes, or as stipulated by the chemical SDS. Use a clean lab coat or spare clothing for cover-up.   + **For eye exposure**, begin using the eyewash immediately. Remove contact lenses as soon as practical, but do not delay irrigation while waiting for contact lens removal. Irrigate the eyes for 15 minutes (or as stipulated by the chemical’s SDS), holding the eyelids open with thumb and index fingers, rolling the eyelids to permit thorough cleaning.   + **For inhalation exposure**, evacuate the contaminated area. Close the door to the area and post a Spill Alert sign to prevent others from entering. Do not re-enter the space, but stay in close proximity. * **Get Help**   + **MANDATORY: When in a safe place, call the NIH Division of Fire and Rescue Services.** Give details of exposure, *i.e.*, chemical, dose, route of exposure, time since exposure. Have the SDS and this SOP available. Fill out information for your site as appropriate below:   **Bethesda, MD**  911 on-campus  9-911 off-campus  301-496-9911 (cell phone)  **Baltimore, MD**  911 (cell phone)  9-911 (landline)  **Frederick, MD**  911  **Hamilton, MT**  911  **Research Triangle Park, NC**  911 (landline)  919-541-2800 (cell phone)   * + Notify your supervisor as soon as possible for assistance.   + Follow all directions given by emergency responders when they arrive on scene. * **Injury and/or Illness Reporting and OMS Care**   + Remove the injured/exposed individual from the area, unless it is unsafe to do so because of the medical condition of the victim or the potential hazard to rescuers.   + Call the NIH Division of Fire and Rescue (see above for contact information).   + The injury should be immediately reported to your local OMS clinic (fill out information for your site as appropriate below):   **Bethesda, MD**: Building 10, Room 6C306; (301) 496-4411  **Baltimore, MD**:251 Bayview Blvd., Suite 200; (443) 740-2309  **Frederick, MD:** 8200 Research Plaza, Room 1B116; (301) 631-7233  **Hamilton, MT:** 903 South 4th Street, Room 5202; (406) 375-9755  **Research Triangle Park, NC:** 111 T W Alexander Drive, Building 101, Room E111; (984) 287-4178   * + Bring to the copies of SDSs for all chemicals the victim was exposed to, to the OMS clinic. | | | | | | | | | | | | | | | | | | | |
| **9** | **WASTE COLLECTION AND DISPOSAL** | | | | | | | | | | | | | | | | | | |
| **Collection**   * + Waste containing  is considered a **hazardous chemical waste**. * Accumulate waste in a sturdy, chemically compatible container with a secure closure. * For contaminated debris (i.e., pipette tips, absorbent paper, disposable lab coats, chemically contaminated gloves), materials should be placed in a clear plastic bag (NSN-8105-01-195-8730): * Close the plastic bag with a filament tape or bag closure tie * Place bag in a plain carboard box or double bag the dry waste * Complete and attach a Chemical waste tag (NSN # 753000L075985). * **All waste containers must be properly closed or sealed** | | | | | | | | | | | | | | | | | | | |
| Particularly hazardous substances (PHSs) involved? *\** | | | | | | Yes? | | | | | Blocks #10 & #11 are Mandatory | | | | | | | | |
|  | | | | | | No? | | | | | Blocks #10 & #11 are Optional | | | | | | | | |
| *\*PHSs include select carcinogens, reproductive toxins and chemicals that have a high degree of acute toxicity. See CHP Section X: Working with Particularly Hazardous Substances.* | | | | | | | | | | | | | | | | | | | |
| **10** | **Approval Required** | | | | | | | | | | | | | | | | | | |
| All staff working with *[chemical name]* must be trained on this SOP prior to starting work. They must also be trained on the *[chemical name]* SDS, and it must be readily accessible in the laboratory. All training must be documented and maintained by the PI or their designee. | | | | | | | | | | | | | | | | | | | |
| **11** | **Designated area/Decontamination** | | | | | | | | | | | | | | | | | | |
| All surfaces will be decontaminated with *approved cleaning solution* following the chemical SDS after removing the plastic backed pads.  All work with *[chemical name]* must be done in a designated laboratory, workspace, and *[Select ventilation control from dropdown]*. This work will be conducted in *[room #]*. | | | | | | | | | | | | | | | | | | | |
| Name: | | | | | | | | | | Title: | | | | | | | | | |
| Signature: | | | | | | | | | | Date: | | | | | | | | | |

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| ***[Laboratory Name]***  I have read and understand the content of this SOP and the coinciding SDS  **Documentation of Training**  **Standard Operating Procedure for *[methylene chloride-containing chemical]*** | | |
| Name | SOP Training Date | Signature | |
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