ENTER TITLE HERE

Standard Operating Procedure

Lab:

Department:

PI/Manager of Space:

Written By:

**Section 1: Overview**

Type of SOP: Process Hazardous Material Hazardous Class of Materials Equipment

Synopsis:

*The purpose of the SOP is written here. This is a short description of the goal of the SOP. This section should be kept to a short paragraph. Any limits to the procedure can be written here.*

**Section 2: Risk Assessment Summary (Hazards and control measures)**

*Information obtained from performing a risk assessment should be entered into this section.*

Materials:

|  |  |
| --- | --- |
| **Material (name, CAS #, other ID)** | **Hazards** |
|  |  |
|  |  |

Relevant References for Material Hazards:

|  |
| --- |
| *List where to find the (Material) Safety Data Sheets or other applicable references for the hazards of the above materials. Links to internet resources are acceptable.* |

Equipment Hazards:

*List all equipment that may pose a hazard such as vacuum filtration equipment, centrifuges, high pressure systems, ignition sources, sharps, etc., and list the potential hazards.*

Hazardous Conditions:

*List conditions that pose a hazard such as extreme temperatures, elevated pressure, reduced pressure, aerosolization of infectious agents, etc., and list the potential hazards.*

Technique Hazards:

*List techniques that pose a hazard such as weighing air reactive solids, transferring pyrophoric liquids, warming up cryogens, injecting animals, etc., and list the potential hazards.*

Personal Protective Equipment

*List the PPE required for the hazards present. If certain PPE is required for different parts of the process, explain that here.*

Engineering Controls

*List the necessary engineering controls required for the procedure (e.g., chemical fume hood, biological safety cabinet, etc.).*

**Section 3: Procedures**

Procedures are step-by-step guides for performing the process. A good indication that you are writing a procedure is the presence of action words at the beginning of most sentences.

*For a Process: Write a detailed description of the procedure used to perform such a process. Highlight safety precautions put in place. Include any procedure that should be followed once the experiment is complete (e.g., how to power-down devices).*

*For a Hazardous Material: Write a procedure for how to transfer and work with the specific material. Are the hazards for this material different from other materials in its class? Are there proper ways to transfer the material? Are the incompatibilities with other chemicals or agents that should be considered when planning an experiment or transferring it to a waste container? Is the material incompatible with a certain type of vessel or spatula?*

*For a Hazardous Class of Materials: This procedure may be more general because the overall technique should be the same for handling a class of materials. Write a procedure for how to handle a class of materials so that all hazards are addressed. For example, air sensitive materials should be used under inert atmospheres so a procedure for how to ensure inert atmospheres should be written in detail. Most chemicals in a certain class can be used following similar basic procedures.*

*For Equipment: Describe the step-by-step procedure for using the equipment properly. Add details for potential equipment failure if something is done improperly in the procedure. Describe how to power down the equipment at the end of use.*

*\*Include any specific quenching procedures in this section.*

**Section 4: Waste Disposal/Cleanup**

*Describe waste handling procedures for collecting, storing, and disposing of liquid, solid, or mixed waste (including associated contaminated debris) generated in this procedure. Include container types, labeling, segregation, and any required treatments prior to disposal (e.g. neutralization or decontamination steps). For guidance on disposal procedures, see the “Waste Management” menu on the* [*DRS webpage*](http://www.drs.illinois.edu/)*.*

**Section 5: Emergency Response**

*Emergency Response should be a component of the Laboratory Safety Plan. If there are particular response measures that are required by this procedure, include them here.*

**Section 6: Additional Information**

Advice:

*This section should be updated regularly by the researchers performing the procedure. This section can be a list of things to never do when working with the hazard or quick tips for using a material in a safe manner. The points in this section should be read regularly to see if they should be highlighted in another section (e.g., procedure). Examples for this section may include:*

1. *Scale ups with this chemical may result in an exotherm. Have ice bath ready.*
2. *Centrifuge secondary containment is necessary for this process.*
3. *Dry solvents are absolutely necessary for this process.*
4. *Weighing out this solid on humid days resulted in quick decomposition of the material.*

Checklist:

*A checklist can be written in the SOP as a reminder for the steps needed to take in order to perform the procedure. Potential checklist items include:*

*Read (Material) Safety Data Sheets.*

*Proper fire extinguisher is nearby.*

*Another researcher is nearby and knows the hazards present.*

*All calculations are done prior to beginning the procedure.*

*The required glassware is of the proper size to accommodate all steps of the procedure.*

*Received necessary immunizations.*

References:

*Add any references to literature, previous SOPs, or lab specific references such as lab notebook entries.*

**Training Documentation**

Signing this document means that you have read and understand all aspects of this Standard Operating Procedure.

The supervisor is the person that acknowledges you took the training and understand the procedure. They can be a lab manager or researcher assigned by the PI to oversee this particular SOP. Documentation can also occur on the DRS Training Checklist.

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| **Name (Printed)** | **Name (Signed)** | **Supervisor** | **Date** |
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