



UNIVERSITY SAFETY ENVIRONMENTAL MANAGEMENT  
SYSTEM  
University Heights  
Newark, New Jersey 07102

March 2018  
Version 1

**New Jersey Institute of Technology  
Laboratory Standard Operating Procedure  
For the Use of Particularly Hazardous Materials or Substances**

EHS has to approve the use of all particularly hazardous substances. For a detailed definition of Particularly Hazardous Substances please visit EHS website.

Department: \_\_\_\_\_ Building: \_\_\_\_\_ Room #: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_ Contact #: \_\_\_\_\_

Prepared By: \_\_\_\_\_ Date: \_\_\_\_\_

**1. Substance Information**

<i>Substance #</i>	<i>Chemical Name</i>	<i>CAS Number</i>	<i>Location</i>	<i>Estimated Rate of Use (e.g., grams/month)</i>	<i>Frequency of Manipulation (Daily/Weekly/Monthly)</i>	<i>SDS Reviewed and Available</i>	<i>Hazard Type</i>
1						<input type="checkbox"/>	
2						<input type="checkbox"/>	
3						<input type="checkbox"/>	
4						<input type="checkbox"/>	
5						<input type="checkbox"/>	

- Do any of these materials have a low LD-50 or PEL (LD-50  $\leq$  200 mg/kg or a PEL  $\leq$  10 ppm or 25 mg/m<sup>3</sup>) that requires enhanced safety precautions?
  - No
  - Yes (Please explain in the box below for each substance)

Oral LD50 (Rats, per kg)	Skin Contact LD50 (Rabbits, per kg)	Inhalation LC50 (Rats, ppm for 1 h)	Inhalation LC50 (Rats, mg/m <sup>3</sup> 1 h)
< 50 mg	< 200 mg	< 200	< 2000

## 2. Hazards

### A. Physical Hazards (Check all that apply)

<i>Physical Hazards/Substance #</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>Flammable</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Corrosive</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Reactive</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Atmospheric/Temperature</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Unstable<sup>1</sup></i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>Substance #</i>	
	<i>Known Incompatibilities</i>
<i>1</i>	
<i>2</i>	
<i>3</i>	
<i>4</i>	
<i>5</i>	

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<sup>1</sup> Decomposes, forms peroxides, polymerizes, shelf-life concerns

**B. Health Hazards**

<i>Substance #</i>	<i>Applicable Significant Routes of Exposure</i>			<i>Sensitizer</i>	<i>Medical Consultation Needed</i>	<i>Antidote On Hand</i>
<i>1</i>	<input type="checkbox"/> Inhalation	<input type="checkbox"/> Skin Absorption	<input type="checkbox"/> Injection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>2</i>	<input type="checkbox"/> Inhalation	<input type="checkbox"/> Skin Absorption	<input type="checkbox"/> Injection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>3</i>	<input type="checkbox"/> Inhalation	<input type="checkbox"/> Skin Absorption	<input type="checkbox"/> Injection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>4</i>	<input type="checkbox"/> Inhalation	<input type="checkbox"/> Skin Absorption	<input type="checkbox"/> Injection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>5</i>	<input type="checkbox"/> Inhalation	<input type="checkbox"/> Skin Absorption	<input type="checkbox"/> Injection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If medical consultation is needed or there is an antidote is available for a substance, please describe below:

Ex: (Calcium Gluconate for Hydrofluoric Acid)

**3. Workplace Controls**

*A. Ventilation/Containment*

<i>Substance #</i>	<i>Hood Required</i>	<i>Hood Operates 80 – 120 ft/min</i>	<i>Bio Safety Cabinet Required</i>	<i>Bio Cabinet Certified within 1 year</i>	<i>Glovebox Required</i>	<i>Vented Gas Cabinet Required</i>	<i>Other Ventilated Equipment<sup>2</sup></i>
<i>1</i>							
<i>2</i>							
<i>3</i>							
<i>4</i>							
<i>5</i>							

<sup>2</sup> e.g. PCR hood, elephant trunk exhaust duct

**B. Safety Equipment**

Prior to performing this procedure, the following safety equipment must be accessible and ready for use: (ex. chemical fume hood, biological safety cabinet, laminar flow hood, emergency eye wash, safety shower, chemical spill kit, etc.)

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**C. Personal Protective Equipment (PPE)**

<i>Substance #</i>	<i>Safety glasses</i>	<i>Chemical splash goggles</i>	<i>Face Shield</i>	<i>Gloves (type)</i>	<i>Lab coat</i>	<i>Apron</i>	<i>Respirator<sup>3</sup></i>	<i>SCBA</i>	<i>Other</i>
<i>1</i>									
<i>2</i>									
<i>3</i>									
<i>4</i>									
<i>5</i>									

If other, (please describe for each substance):

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Special personal protective equipment needed (e.g., acid resistant gloves)  Yes  No

**\*Particularly hazardous substances** might require specialized personal protective equipment (PPE). Please describe any specialized PPE required for laboratory safety.\* (ex. Acid resistant gloves, chemical splash goggles, full face shield, moisture resistant Tyvek, chemical splash apron, flame resistant lab coat, etc.)

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#### 4. Procedure

- How the material will be used for each substance below: (Attach experimental protocol if needed)

- Vacuum system used:  Yes  No
- If yes, describe method for trapping effluents:

#### 5. Storage/Designated Area

A. Building \_\_\_\_\_ B. Room \_\_\_\_\_

C. Describe the area where substance(s) will be used and the method of posting as a designated area. Please indicate where the material is stored.

<i>Substance #</i>	<i>Area where substance(s) will be used and the method of posting as a designated area</i>	<i>Substance Storage Location in the Lab</i>
1		
2		
3		
4		
5		

D. Storage Method

<i>Substance #</i>	<i>Refrigerator/ Freezer</i>	<i>Hood</i>	<i>Double Containment</i>	<i>Vented Cabinet</i>	<i>Gas Cylinder</i>	<i>Flammable Liquid Storage Cabinet</i>	<i>Enhanced Security Required</i>	<i>Other</i>
<i>1</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>2</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>3</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>4</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>5</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please describe): \_\_\_\_\_

Enhanced security required (please describe): (For example, toxins of Biological origin, e.g., tetrodotoxin, needs to be secured in a locked cabinet, or locked refrigerator)

**6. Spills and Decontamination**

<i>Substance #</i>	<i>materials needed for spill control and decontamination</i>		<i>Spill Control Materials available</i>	<i>Personnel trained For Using Spill Kits</i>	<i>Special PPE Required (e.g., Tyvek) - Describe</i>	<i>Decontamination Method</i>
<i>1</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>2</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>3</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>4</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>5</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

A. In the event of a spill of hazardous materials, follow these procedures for each decontamination method:

**7. Training** (please list names and training dates in the table below)

<i>Name</i>	<i>Title</i>	<i>Hazard Communication Training (EHS)</i>	<i>General Lab Safety Training (EHS)</i>	<i>Bio Safety Training (EHS)</i>	<i>Protocol-Specific Hands-On Training (Lab)</i>	<i>Other Required Training</i>

**8. Waste Disposal**

<i>Substance #</i>	<i>Dispose as hazardous waste</i>	<i>Decontamination prior to disposal</i>	<i>Decontamination Method (If applicable)</i>	<i>New waste accumulation area to be established</i>
1	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

Please describe other waste disposal requirements for each item if needed:

## 9. Authorization

Based on the information provided, prior experience, and records, the individual(s) has demonstrated satisfactory understanding of the hazards associated with the listed substance. Safe-handling methods were established to minimize potential risk to health and property. The individual is authorized to use the material as described in this form.

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EHS Authorization Signature

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Principal Investigator/Supervisor

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Department Chair

**Please submit this form to EHS, the lab principal investigator, and department chair.**

**Particularly hazardous substances should not be used until prior approval is granted.**