COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

ENVIRONMENTAL HEALTH AND SAFETY

# Laboratory Standard Operating Procedure (SOP)

*This is an SOP template and is not complete until:*
*1) Lab specific information is entered into the box below*
*2) Lab specific Protocol/Procedure is added to the protocol/procedure section and*
*3) SOP has been signed and dated by the Principal Investigator and affected laboratory personnel.*

Print, sign and post this SOP in your laboratory along with the *Laboratory Assessment Tool & Chemical Hygiene Plan (LATCH)* http://ehs.columbia.edu/LabChemicalHygienePlanAndLATCH.html. Please note this document fullfills the OSHA Particularly Hazardous Substances requirement as indicated in 29CFR 1910.1450(e)(3)(viii).

| | |
|---|---|
| **Principal Investigator's Name & UNI:** | |
| **Department:** | |
| **Date SOP Approved by PI/Designee:** | |
| **Laboratory Manager:** | |
| **Laboratory Phone:** | |
| **Office Phone:** | |
| **Emergency/After Hours Contact:** *(Name and Phone Number)* | |
| **Designated Use Area/Location(s) covered by this SOP:** *(Campus/Building/Room Number)* | |

## SOP Scope

Below please briefly describe the nature of the work and the circumstances surrounding it's use.

## Safety Data Sheet (SDS) Location

SDSs convey information on a chemical's properties along with important health and safety data. In addition, vital information on the chemical manufacturer, fire-fighting procedures, protective equipment requirements, and spill clean-up procedures is provided. Manufacturers and importers are required to provide SDSs with chemical shipments. Furthermore, employers are required to provide ready access to SDSs to all personnel.

Online SDS can be accessed at http://ehs.columbia.edu/sds.html. Please attach a copy of the manufacture's SDS directly to this document.

**Occupational Exposure Limit(s):** **Note**: This section is to be completed by EH&S.

An Occupational Exposure Limit (OEL) is the upper limit of an airborne concentration of a hazardous substance beyond which employee exposure shall not occur. Limits are typically expressed as an eight-hour time weighted average for exposures for a 40 hour work week. Exposure below this level, over a working lifetime, is considered to not result in adverse health effects. OELs are established by a number of entities including regulatory agencies, research foundations and industry supervisory bodies.

Below are applicable OELs for [redacted] OELs can be found in the chemical Safety Data Sheet (SDS), National Institute of Occupational Safety & Health (NIOSH) guide or the Occupational Safety & Health Administration (OSHA) website in some cases.

[redacted]

**Training**

Training is the cornerstone of any successful health and safety program and is a fundamental element of EH&S's commitment to ensuring Columbia University maintains and promotes a safe workplace. Many activities that take place in the course of research, academics and/or clinical care require specialized instruction on how these activities can be conducted safely and with minimal exposure to workplace hazards. This document/training tool is designed to ensure the safe use and handling of [redacted] Please ensure that all individuals who are tasked to work with [redacted] review, understand and sign in the Documentation section of the SOP.

**Eliminations/Substitutions**

Below please indicate if the use of [redacted] can be eliminated or substituted with another less hazardous chemical, process or piece of equipment and reasons why the laboratory has chosen not to use those options.

[redacted]

**Engineering Controls**

Engineering controls are devices or actions that automatically isolate or physically limit exposure to a hazard, thereby reducing the risk to personnel. Examples include fume hoods, glove box and safety guards and must only be used as designed. Below please indicate the engineering controls to be used during the use and handling of [redacted]

**Note**: Engineering control must be used as designed in order to effectively protect staff from potential hazards.

## Work Practice/Administrative Controls

Below please identify work practices the laboratory will implement to ensure the safe use and handling of _____ Examples include, but are not limited to, ensuring that an incompatible chemical is not present at ones workstation, ensuring personnel do not work alone and procedures for work area/station decontamination.

## Personal Protective Equipment (PPE)

The appropriate use of PPE is critical in reducing exposure to laboratory hazards and represents the *last line of defense* against potential exposure. Please visit the EH&S PPE website to review the University's PPE Policy and supporting documents at http://ehs.columbia.edu/ppe.html.

Below please indicate the appropriate PPE to be worn during the use and handling of _____

### Selected Gloves/Hand Protection

☐ Nitrile ☐ Neoprene ☐ PVA ☐ Vinyl ☐ Work Gloves ☐ Metal Mesh
☐ UV Protective ☐ Cyrogenic ☐ Heat Resistant ☐ Laminate Film ☐ Other _____

**Note**: There is no one glove to protect against all chemical and physical hazards. Consult with your preferred glove manufacturer to ensure that the glove(s) the laboratory intends to use is compatible with _____ Several commonly used manufacturers are listed at http://ehs.columbia.edu/ppeHandProtection.html.

### Selected Eye and Face Protection

☐ Safety Glasses ☐ Safety Goggles ☐ Cyrogenic Face-Shield ☐ Laser Safety Glasses ☐ Other _____

### Selected Lab Coat and Body Protection

☐ Rubber Apron ☐ Lead Apron ☐ Cotton Lab Coat ☐ Polyester Cotton Blend Lab Coat ☐ Nomex Lab Coat
☐ Cotton (flame retardant) Lab Coat ☐ Polyproplylene Lab Coat ☐ Microbreathe Lab Coat ☐ Gown
☐ Other _____

### Selected Respiratory Protection

If deemed appropriate by EH&S, below please indicate the respiratory protection to be used during the use and handling of _____

**Note**: Respirator use is only permitted with EH&S approval. Laboratory personnel who believe the use of a respirator is necessary must contact EH&S for a formal hazard assessment. Please visit the Respiratory Protection webpage at http://ehs.columbia.edu/RespiratoryProtectionProgram.html to review the University's Respiratory Protection Policy. To request a formal Laboratory Hazard Assessment please visit http://www.ehs.columbia.edu/LaboratoryHazardAssessmentForm.pdf.

**Protocols/Procedures (specific experimental steps)**

Below please outline step by step how the laboratory will be using and handling
Be sure to make special note to steps that create and opportunity for increased hazards and/or exposure. In addition add specific directions on how the user should clean up (decontaminate) the work station and equipment.

**Note**: Any deviation from this SOP requires approval from PI or designee.

**Special Handling and Storage Requirements**

Below please indicate all special or recommended handling and storage procedures for
This includes, but is not limited to, appropriate chemical segregation, container and cabinet storage type or refrigeration.

- Maximum quantity in use at any time
- Maximum Quantity onsite at any time
- Storage location

**Note:** Any ramp up or increase of the maximum quantity used at anytime will require the resubmission and approval by the PI.

**Waste Disposal Procedures**

Columbia University is committed to protecting human health and the environment through a proactive Waste Management Program. For details on the University's waste management program please visit http://ehs.columbia.edu/WasteMgt.html and http://www.ehs.columbia.edu/5Ls.pdf for laboratory specific requirements.

Below please indicate the specicifc waste disposal procedures the laboratory will use for

- liquid waste will be collected in a container and stored in the . in . to the Columbia University "No drain disposal policy" and not discard of chemical waste inappropriately or prior to determining its hazards.
- dry solid waste (such as contaminated bench padding or gloves) if applicable will be collected in a container and stored in the in at or near the point of generation .
- All waste containers will be labeled with an EH&S provided hazardous waste label. Labeling of the container will occur as soon as the laboratory begins collecting the waste and will list all of the waste components and approximate percentage. Chemical formulae and abbreviations will not be used on hazardous waste labels.
- A lid will be used on all liquid waste containers to prevent spillage.
- The lab will visually inspect all waste containers regularly for leaks. In the event that a waste container is found to be leaking the use of secondary containment will be used to stop the source of a leak and EH&S will be contacted immediately for assistance. The use of secondary containment will be used to stop the source of a leak.
- A waste pick-up request will be submitted at http://vesta.cumc.columbia.edu/ehs/wastepickup/ and http://vesta.cumc.columbia.edu/ehs/radioactivewastepickup/ for radioactive waste by the laboratory when waste containers are approximately 80% full.

**Emergency Response** **Note**: This section is to be completed by EH&S

**First Aid Procedures**

Below are first aid actions that should be taken in the event of an exposure to

- If inhaled:
- In case of skin contact:
- In case of eye contact:
- If swallowed:

**Note: Medical Emergency Dial 911 & contact Public Safety**

For all Life Threatening Emergencies, and incidents occurring after hours, weekends and holidays please report to the nearest Emergency Room.

For all non-Life Threatening Emergencies please report to the appropriate location indicated below.

Note: All needle stick/puncture exposures must be reported to EH&S, Work Force Health & Safety and or Student Health Services.

| Campus | Hours | Faculty/Staff | Students |
|---|---|---|---|
| CUMC | Business-Hours | Workforce Health & Safety (212) 305-7580 | Student Health Services (212) 305-3400 |
| | After-Hours | NYPH Emergency Department | NYPH Emergency Department |
| LDEO | Business-Hours | Nyack Hospital: 160 North Midland Avenue Nyack NY 10960 (845) 348-2000 | |
| | After-Hours | | |
| Morningside | Business-Hours | Workforce Health & Safety (212) 305-7580 | Student Health Services (212) 854-2284 |
| | After-Hours | St. Luke's Hospital 1111 Amsterdam Avenue at 114th St, New York NY | |
| Nevis | Business-Hours | St. John's Riverside Hospital Dobbs Ferry Pavilion 128 Ashford Avenue Dobbs Ferry, NY 10522 (914) 693-0700 | |
| | After-Hours | | |

**Spill Procedures**

☐ A release of [ ] of [ ] is classified by EH&S as a manageable and can be addressed and remediated by trained laboratory staff. Please visit the EH&S Emergency Response webpage at http://ehs.columbia.edu/LaboratoryEmergency.html for detailed instructions on how to manage a release in the laboratory. In the event that a release of [ ] occurs in amounts greater then [ ] EH&S and Public Safety must be contacted immediately. Please visit the EH&S Emergency Contacts webpage at http://ehs.columbia.edu/EmerProcedures.html for campus specific emergency telephone numbers.

☐ A release of [ ] in any quantity is classified by [ ] as an unmanageable. EH&S and Public Safety must be contacted immediately. Please visit the EH&S Emergency Contacts webpage at http://ehs.columbia.edu/EmerProcedures.html for campus specific emergency telephone numbers.

Note: All incidents, regardless of quantity, must be reported to EH&S for follow-up. EH&S will visit the location to ensure the incident was managed appropriately and the space can be safely reoccupied.

Below please indicate if there is an emergency response number provide by the vendor, manufacture, and or distributor that maybe a source of additional information in the event of an emergency.

[ ]

**EH&S use only**

Below are predetermined emergency response procedures for to be implemented by EH&S in the event of a _____ release.

- Based on the expected maximum quantity in use and in storage at any time, a release of _____ would be a reportable quantity? ☐ YES ☐ NO
- Emergency Response Management:

  A release of _____ of _____ is to be managed by:

  ☐ EH&S ☐ Contracted Vendor _____ ☐ FDNY

  A release of _____ of _____ is to be managed by:

  ☐ EH&S ☐ Contracted Vendor _____ ☐ FDNY
- PPE to be used during response: _____
- Monitoring Equipment to be used during response: _____

Flash Point: _____ pH: _____ Ionization Potential: _____ Odor Threshold: _____

**Documentation of Training**

Prior to conducting any work with _____ designated personnel, which may include the PI, Laboratory Manager or other PI designated senior laboratory member with requisite knowledge and experience, must provide training to his/her laboratory personnel specific to the hazards involved in working with this substance, work area decontamination, and emergency procedures.

- The Principal Investigator must discuss and provide his/her laboratory personnel with a copy of this SOP and a copy of the SDS provided by the manufacturer.
- The Principal Investigator must ensure that his/her laboratory personnel have attended appropriate laboratory safety training or refresher training within the last one year.
- The Principal Investigator must ensure that laboratory staff are aware of who to contact and where to go in the event of an emergency.

Note: Signature of all _____, *users or all affected personnel* is required.

The following people have read and received training on the _____:

| Trainee Name & UNI | Signature | Trainer Name & UNI | Signature | Date |
|---|---|---|---|---|
| | | | | |
| | | | | |
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