University of New Mexico
Chemical Hygiene Plan

and

Laboratory Specific Information
Template

Prepared by
Safety and Risk Services Department
Reviewed and Approved by UNM Chemical & Laboratory Safety Committee

Revision 1, Approved on December 13, 2017
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Laboratory Specific Information

The following information, specific to the laboratories covered by this plan, as listed on the front page, is provided, to augment the UNM Chemical Hygiene Plan. This laboratory adopts the UNM Chemical Hygiene Plan and its concepts, and the specific information for the laboratory(ies) covered by this plan are below.

Laboratory Name: ____________________________________________

This Chemical Hygiene Plan applies to these specific laboratories (give locations):

List of Reviewers (Name/Signature/Phone #)

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Date: __________

The PI and/or laboratory manager is: ____________________________.

Phone No: ____________________________

Email address: ____________________________
Particularly Hazardous Substance List
The following list is a list of all particularly hazardous substances used in the laboratory(ies). This is a list of all carcinogens, mutagens, teratogens, reproductive toxins, pyrophorics, dangerous-when-wet, peroxide forming, or having a high degree of acute toxicity.
Standard Operating Procedures (SOP’s)

The following is a list of SOPs which involve hazardous materials or hazardous processes, which have an assessment of the hazards and their controls either attached to the SOP or posted in areas where the process is performed, for easy access. An SOP can be for a process, for a particular class of hazardous materials, or for a particularly hazardous substance. All processes involving chemicals must document the hazards and appropriate controls for these processes. A Job Hazard Analysis (JHA) form is attached, for documenting hazards, and controls, by task.
Training
Training required by those working in the laboratory include:

1. Hazard Communications 2012
2. Chemical Hygiene Plan
3. Chemical Spill Clean-up
4. Hazardous Waste Management
5. Safe Chemical Storage
6. SOPs to be used in the laboratory (including hazards and controls)
7. Laboratory Safety Practices (Security, Personal Protective Equipment required when in the lab, etc.)

Add any others that may apply (Sharps handling and storage, biohazards, blood borne pathogens, radiation licensing requirements, radioactive waste, mixed waste, Particularly Hazardous Substance practices, personal protective equipment, respiratory protection training, others)
Laboratory Safety Data Sheets (SDS) Location
Indicate where the SDS are maintained (location electronically or where the paper copy can be found):

Spill Clean-up Kit Inventory and Procedure
The contents of spill clean-up kits are listed below, and spill clean-up procedures are attached.
Laboratory Self-Audit and Incident Reports
Attached are copies of self-audit reports conducted for this laboratory, and incident reports for spills or releases (other than incidental spills).
DEFINITIONS

Action level – A concentration designated by OSHA 29 CFR 1910 for a specific substance, calculated as an 8-hour time weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance.

Article – A manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use functions(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.

Authorized Chemical Worker – UNM faculty, staff, student, or visitor whose manager or supervisor has determined that he/she has the training, knowledge, skill, and abilities to safely perform the chemical work to which he/she is assigned.

Carcinogen – Any substance or mixture of substances that meets one of the following criteria:

- It is regulated by OSHA as a carcinogen; or
- It is listed under the category "known to be carcinogens", in Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or
- It is listed under Group 1 ("carcinogenic to humans") by the International Agency for Research on Cancer Monographs (IARC) (latest edition); or
- It is listed in either Group 2A or 2B by IARC (http://monographs.iarc.fr/) or under the category, "reasonably anticipated to be carcinogens" by NTP (http://ntp.niehs.nih.gov/?objectid=72016262-BDB7-CEBA-FA60E922B18C2540) and causes statistically significant tumor incidence in experimental animals under specified conditions.
- A mixture shall be classified as a carcinogen when at least one ingredient has been classified as a carcinogen and is present at or above 0.1%.

Chemical – Any element, compound, or mixture of elements and compounds.

Chemical Hygiene Officer (CHO) – A UNM employee designated by his/her management who is qualified, either by education, training or experience, to provide technical guidance in the development and implementation of the provisions of the Chemical Hygiene Plan. All CHOs will take the Chemical Hygiene Officer training course annually.

Chemical and Laboratory Safety Committee (CLSC): A committee of faculty and staff members for the purpose of helping UNM develop, consolidate and implement chemical and lab
safety procedures and policy. It is comprised of representatives from Academic Affairs and Administration.

**Container** – Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. Pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

**Corrosive** – A chemical that causes visible destruction or permanent changes in human skin tissue at the site of contact.

**Chemical Owner** – An authorized chemical worker assigned ownership and responsibility for a chemical container in the chemical inventory system.

**Designated area** – An area that shall be established and posted for work with particularly hazardous substances and to which access is administratively restricted to authorized personnel. A designated area may be the entire laboratory, an area of a laboratory, or a device such as a laboratory fume hood.

**Emergency** – Any occurrence such as, but not limited to, equipment failure, rupture of containers or failure of control equipment which results in an injury or uncontrolled release of a hazardous chemical into the workplace or environment.

**Globally Harmonized System (GHS)** – OSHA revised its Hazard Communications standard in 2012 to bring it into harmony with the International Hazard Communication Standards promulgated by the United Nations. This requires a standardization of labeling, formats for Safety data Sheets (SDS), reporting, and other hazard communications between suppliers and users world-wide.

**Hazardous chemical** – Any chemical which is classified by OSHA (1910.1200) as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified. If a hazardous chemical comprises 1% (0.1% for carcinogens) or greater of a compound or mixture, the compound or mixture will be treated as a hazardous chemical.

**Hazardous Waste** – Is defined by EPA as “(A) liquid, solid, contained gas, or sludge waste that contain properties that are dangerous or potentially harmful to human health or the environment”. EPA further defines hazardous waste as:

- Waste exhibiting at least one of four characteristics: ignitability, corrosivity, reactivity, or toxicity; or
- Waste appearing in one of the EPA lists (hazardous or acutely hazardous chemicals that have been used, or not, but no longer usable for its intended purpose).
For a more detailed definition, go to <www.epa.gov>

**Health Hazard** – A chemical which is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard. The criteria for determining whether a chemical is classified as a health hazard are detailed in Appendix A to 29 CFR 1910.1200–Health Hazard Criteria.

**High Acute Toxicity** – Substances that may be fatal or cause clinical damage to target organs as a result of a single exposure of short duration. High acute toxicity chemicals meet the following criteria: a Permissible Exposure Limit (PEL) or Threshold Limit Value (TLV) of less than 0.1 ppm Time-Weighted Average (TWA) or ceiling limit of less than 1.0 ppm.

**Immediate use** – The hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it was transferred,

**Laboratory** – A workplace where relatively small quantities of hazardous chemicals are used on a non-production basis, chemical manipulations are carried out on a “laboratory scale”, and multiple chemical procedures or chemicals are used.

**Laboratory scale** – Work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person. "Laboratory scale" excludes those workplaces whose function is to produce commercial quantities of materials.

**Laboratory use of hazardous chemicals** - handling or use of such chemicals in which all of the following conditions are met:

(i) Chemical manipulations are carried out on a "laboratory scale;"

(ii) Multiple chemical procedures or chemicals are used;

(iii) The procedures involved are not part of a production process, nor in any way simulate a production process; and
"Protective laboratory practices and equipment" are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

Medical consultation – Consultation which takes place between a licensed physician and an employee [or student] for the purpose of determining what medical examinations or procedures, if any, are appropriate in cases where a significant exposure to a hazardous chemical may have taken place.

Must – Designates a contractual or policy requirement or a regulatory mandate.

Mutagen – A chemical that causes permanent changes in the amount or structure of the genetic material in a cell. Chemicals classified as mutagens in accordance with the Hazard Communication Standard (29 CFR 1910.1200) shall be considered mutagens for purposes of this section.

Occupational Exposure Limit (OEL) – Occupational Exposure Limit values are set by competent national authorities or other relevant national institutions as limits for concentrations of hazardous compounds to which employees are exposed in the workplace. For purposes of this document, the applicable OELs are OSHA PELs and ACGIH Threshold Limit Values (see definitions below).

Particularly Hazardous Substances – Particularly hazardous substances (PHS) are those chemicals with special acute or chronic toxicity. The OSHA Laboratory Standard defines a PHS as being a select carcinogen, reproductive toxin, or a Substance with a High degree of Acute toxicity. In the Laboratory Standard, OSHA does not provide a list of PHSs because new chemicals are continually being developed and tested in laboratories. The OSHA Laboratory Standard requires areas where PHS are used to be designated with signage, and have SOPs for safe use of chemicals that are PHSs.

Permissible Exposure Limit (PEL) – The maximum 8-hour time-weighted average concentration, or short-term exposure limit, of an airborne contaminant that shall not be exceeded under OSHA standards.

Physical hazard – A chemical that is classified as posing one of the following hazardous effects: Explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid, or gas); self-reactive; pyrophoric (gas, liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; in contact with water emits flammable gas; or combustible dust. The criteria for determining whether a chemical is classified as a physical hazard are in Appendix B of the Hazard Communication Standard (29 CFR 1910.1200).
**Professional Visitor** – An individual with advanced science, engineering or related education, experienced working independently in a similar laboratory, and will be temporarily working independently in a UNM laboratory.

**Safety Data Sheet (previously known as Material Safety Data Sheet)** – Written printed, or electronically transmitted document concerning a hazardous chemical that is prepared in accordance with paragraph (g) of 29 CFR 1910.1200.

**Standard Operating Procedure (SOP)** – Documented procedures relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals (OSHA 1910.1450)

**Reproductive toxins** - Chemicals that affect the reproductive capabilities including adverse effects on sexual function and fertility in adult males and females, as well as adverse effects on the development of the offspring. Chemicals classified as reproductive toxins in accordance with the Hazard Communication Standard (29 CFR 1910.1200) shall be considered reproductive toxins for purposes of this section. The [Proposition 65](https://wwwprop65info) list developed by the State of California is one source of information about chemicals known to cause birth defects or other reproductive harm.

**Secondary container** – Any chemical container other than an original container that will be used to store decanted chemicals or mixed chemicals beyond a single workday. *(Note: This definition should not be confused with secondary containment for chemical release prevention control.)*

**Shall** – Designates a UNM policy or regulatory mandate.

**Should** – Designates a recommendation contained in the regulations or a recommendation from a recognized industry standard.

**Substances with a High Acute Toxicity** – High acute toxicity includes any chemical that falls within any of the following OSHA-defined categories:

- A chemical with a median lethal dose (LD50) of 50 mg or less per kg of body weight when administered orally to certain test populations.
- A chemical with an LD50 of 200 mg less per kg of body weight when administered by continuous contact for 24 hours to certain test populations.
- A chemical with a median lethal concentration (LC50) in air of 200 parts per million (ppm) by volume or less of gas or vapor, or 2 mg per liter or less of mist, fume, or dust, when administered to certain test populations by continuous inhalation for one hour,
provided such concentration and/or condition are likely to be encountered by humans when the chemical is used in any reasonably foreseeable manner.

**Threshold Limit Values (TLVs)** – Threshold Limit Values, which are established by the American Conference of Governmental Industrial Hygienists (ACGIH), refer to airborne concentrations of chemical substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed, day after day, over a working lifetime, without adverse health effects. These include: 8-hour time-weighted averages (TLV–TWAs), short-term 15-minute time-weighted averages (TLV–STELs), and ceiling limits (TLV–Cs).

**Threshold Limit Value—Time–Weighted Average (TLV–TWA)** – The time-weighted average concentration that should not be exceeded for a conventional 8-hour workday and a 40-hour workweek.

**Threshold Limit Value—Short-Term Exposure Limit (TLV–STEL)** – A 15-minute TWA exposure that should not be exceeded at any time during a workday, even if the 8-hour TWA is within the TLV–TWA.

**Threshold Limit Value—Ceiling (TLV–C)** – The concentration that should not be exceeded during any part of the working exposure.

**Will** – Designates a UNM policy or standard practice or regulatory mandate.
PURPOSE

This written document is designed to protect University of New Mexico (UNM) faculty, staff, professional visitors, students, and visitors from potential health hazards associated with the handling, use, storage, and disposal of hazardous chemicals. This document serves as UNM’s written Chemical Hygiene Plan (CHP), and addresses the requirements of the OSHA “Lab Standard” (OSHA, 29 CFR 1910.1450, *Occupational Exposure to Hazardous Chemicals in Laboratories*).

As stated in UNM Policy: “*The ultimate responsibility for safety, however, cannot be delegated as a staff function, it must be assumed by every member of the University community* (emphasis added)” [UNM Administrative Policies and Procedures Manual – Policy 6110: Safety and Risk Services Department]. This document is a broad overview of the information necessary to protect laboratory workers potentially exposed to hazardous chemicals. In addition to this document, laboratories must develop and follow a laboratory specific SOP. SOP formats are included as an appendix to this plan. Activities that involve hazardous chemicals that have unusual characteristics or whose hazards are not adequately covered in this document must address these specific hazards and their mitigation in their laboratory specific operating procedure. In addition to this document, UNM Policy 2205 – Minors on campus, establishes general standards for minors participating in University programs and for minors visiting University workplaces and classrooms.

PLAN DESCRIPTION

This plan addresses the five major elements of the Laboratory Standard:

- Hazard identification
- Chemical Hygiene Plan
- Information and training
- Exposure monitoring
- Medical consultation and examinations

It also addresses the following topical areas:

- Regulatory Requirements
- Responsibilities
- Worker Information and Training
- Standard Operating Procedures (SOPs)
- Chemical Procurement
- Chemical Inventory
- Safety Data Sheets (SDSs), previously known as MSDSs
• Chemical Labels
• Hazardous Chemical Storage
• Hazardous Chemical Transportation
• Chemical Exposure Control
• Chemical Exposure Assessment
• Medical Consultation
• Medical Surveillance
• Laboratory Audits
• Hazardous Chemical Spills and Accidents
• Hazardous Waste Disposal

SCOPE

This plan applies to all UNM facilities engaged in the laboratory use of hazardous chemicals, as defined in the Definitions Section of this plan, and all individuals who work in these facilities. Uses of hazardous chemicals which do not meet the definition of laboratory use, shall comply with the relevant standard in 29 CFR part 1910, subpart Z, even if such use occurs in a laboratory. Exceptions to, or deviations from, this plan must be approved by the UNM President.

Material Exemptions
The following materials are exempted from the OSHA Lab Standard and, therefore, do not fall under the scope of this written Chemical Hygiene Plan:

• Articles;
• Any hazardous substance that is the focus of remedial or removal action being conducted under Comprehensive Environmental Response Compensation and Liability Act in accordance with U.S. Environmental Protection Agency regulations;
• Tobacco or tobacco products;
• Wood or wood products, including lumber which will not be processed, where the only hazard they pose to workers is the potential for flammability or combustibility;
• Food or alcoholic beverages that are sold, used, or prepared in a retail establishment, intended for personal consumption by workers while in the workplace;
• Any drug, when it is in solid, final form for direct administration to a patient (e.g., tablets or pills) intended for personal consumption by employees while in the workplace (e.g., first aid supplies);
• Cosmetics intended for personal consumption by workers in the workplace;
- Consumer products used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, where the use results in a duration and frequency of exposure that could reasonably be experienced by consumers when used for the purpose intended;
- Laboratory uses of hazardous chemicals which provide no potential for employee exposure such as chemically-impregnated test strips (e.g. clinical dipsticks) or commercially prepared diagnostic kits in which all of the reagents needed to conduct the test are contained in the kit;
- Biological agents;
- Ionizing radiation; and
- Nonionizing radiation (refer to the UNM Laser Safety Program for information on Laser Safety)

REGULATORY REQUIREMENTS
The regulatory requirements for the policies, procedures, and work practices outlined in this Chemical Hygiene Plan include but are not limited to:

- OSHA 29 CFR 1910.1450, Occupational Exposure to Hazardous Chemicals in Laboratories
- OSHA 29 CFR 1910.132, Personal Protective Equipment
- OSHA 29 CFR 1910.133, Eye and Face Protection
  - EPA 40 CFR 261.33, Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

RESPONSIBILITIES
THE PROVOST, THE EXECUTIVE VICE-PRESIDENT OF ACADEMIC AFFAIRS, AND THE EXECUTIVE VICE-PRESIDENT FOR RESEARCH AND ECONOMIC DEVELOPMENT are responsible for ensuring that departments/centers/units under their authority engaged in the use of hazardous chemicals comply with the UNM Chemical Hygiene Program.

DEANS, DEPARTMENT HEADS AND CENTER DIRECTORS are responsible for:

- Ensuring departmental compliance with the UNM Chemical Hygiene Plan
- Assigning a Chemical Hygiene Officer (CHO) for designated work area(s)
• Establishing a Chemical Safety Oversight Committee for each school, college or operating unit that meets quarterly;
• Providing the Chemical Hygiene Officer with the support necessary to implement and maintain the CHP; and
• Ensuring that safety audit findings are resolved within a reasonable timeframe.
• Notify Safety & Risk Services (SRS) when changes in CHO appointments occur, and at least annually,
• Ensuring safety issues and concerns are communicated, in writing, to SRS.

THE CHEMICAL AND LABORATORY SAFETY COMMITTEE (CLSC) is responsible for:

• Approving the overall format of the University wide Chemical Hygiene Plan;
• Review and suggest changes to the Chemical Hygiene Plan annually, and
• Advising the Provost and the Executive Vice President for Research on chemical and laboratory safety issues
• Communicate chemical safety concepts within their organizations

THE SAFETY AND RISK SERVICES DEPARTMENT is responsible for:

• Developing a University-wide chemical Hygiene plan;
• Developing a University Chemical and laboratory inspection plan and schedule;
• Developing a uniform chemical inventory system accessible by all UNM laboratories;
• Developing and providing training and training materials applicable to campus wide requirements;
• Assisting departments and laboratories with tailored training in their areas as needed;
• Assisting laboratories with the development of Chemical Hygiene Plans and SOPs;
• Conducting exposure assessments and evaluating exposure control measures;
• Providing or coordinating emergency response for hazardous chemical spills;
• Compiling the data from the audits into a report for the CLSC, Center Directors and Department Heads, and Chemical Safety Officers;
• Investigating hazardous chemical incidents and filing the appropriate reports;
• Receiving and maintaining chemical and laboratory safety reports from Chemical Hygiene Officers and other UNM personnel;
• Conducting periodic chemical safety audits and facilitate compliance with all regulatory agencies having jurisdiction on UNM main and branch campuses;
• Reporting chemical and laboratory safety non-compliance issues to the Provost, to the Executive Vice-President for Academic Affairs, and the Executive Vice-President for Research;
• Reporting to the CLSC trends in laboratory compliance and safety. Developing and maintaining chemical safety self-audit forms; and
• Performing an annual evaluation of the Chemical Hygiene Plan, for regulatory compliance, for consideration by the CLSC.

**Chemical Hygiene Officer (CHO)s** or their designee is responsible for:

• Working with administrators, faculty, and staff to develop and implement appropriate chemical safety policies and procedures for the work areas to which she/he has been assigned;
• Monitoring and documenting hazardous chemical and laboratory safety issues in their laboratory;
• Communicating guidance on chemical and laboratory safety with faculty investigators and research staff;
• Monitoring procurement, use and disposal of chemicals used in the work areas to which he/she has been assigned;
• Provide area-specific chemical safety training and information for procedures, protocols, and the Chemical Hygiene Plan for the laboratory to faculty, staff, and students prior to their performing laboratory operations with hazardous chemicals, with SRS providing lab specific training assistance as requested. Notify Safety and Risk Services if a new risk assessment is required (introduction of a new chemical risk, change in engineering controls that could impact laboratory worker exposure, significant changes in quantities or processes);
• Assisting in maintaining the chemical inventory and SDSs for the work areas to which he/she has been assigned;
• Ensuring chemical safety self-audits are conducted and documented for the work areas to which she/he has been assigned;
• Conducting and documenting an annual self-audit to assess laboratory compliance with the laboratory Chemical Hygiene Plan, and maintain self-audit records;
• Coordinating the development of the Chemical Hygiene Plan(s) for the laboratories she/he is assigned to assist;
• Coordinating an annual evaluation of the laboratory Chemical Hygiene Plan(s); and
• When providing access for professional visitors, providing access to the laboratory’s Chemical Hygiene Plan, relevant SOPs, the list of hazards and controls, including emergency action and reporting requirements.

**PRINCIPAL INVESTIGATOR/SUPERVISOR** or their designee is responsible for:
Ensuring that faculty, staff, students and visitors comply with the UNM Chemical Hygiene Plan and do not operate equipment or handle hazardous chemicals without proper training and authorization by the PI or supervisor;

Maintaining a chemical inventory for her/his work area(s);

Ensuring chemical safety training is provided and up-to-date training records are properly maintained on site;

Developing Safety Data Sheets for chemicals produced in the laboratory.

Developing and implementing laboratory-specific Chemical Hygiene Plan for the laboratory (by adding laboratory specific information to this template and following this plan), and Standard Operating Procedures (SOPs) for each hazardous chemical or laboratory process that is not already included in the general Chemical Hygiene Plan;

Reviewing procedures, in coordination with SRS, for potential safety problems before assigning to other personnel;

Ensuring that Personal Protective Equipment (PPE) is available and properly used;

Conducting regular, formal chemical hygiene and housekeeping inspections, including routine inspections of laboratory equipment including emergency equipment;

Ensuring that facilities and engineering controls are maintained and function properly;

Ensuring Safety and Risk Services is notified if a new risk assessment is required due to the introduction of a new chemical risk or a change in engineering controls is required;

Contacting the appropriate person(s) to report problems with the facilities or engineering controls;

Maintaining records of self-audits and training that is specific for that laboratory (if not recorded in UNM’s Learning Central); and

When providing access for professional visitors, providing access to the laboratory’s Chemical Hygiene Plan, relevant SOPs, the list of hazards and controls, including emergency action and reporting requirements, obtain a signed acknowledgment, sending a copy of this signed acknowledgment to SRS.

**FACULTY, STAFF** engaged in the use of hazardous chemicals are responsible for:

- Reading and understanding the requirements of the UNM and lab-specific Chemical Hygiene Plan and SOPs, or be escorted by someone that has;

- Planning and conducting operations in accordance with the UNM Chemical Hygiene Plan and applicable laboratory-specific Standard Operating Procedures;

- Using all required engineering controls and PPE;

- Notifying the Chemical Hygiene Officer, supervisor, or SRS of any hazardous conditions or unsafe work practices in the work area;

- Reporting all accidents and potential chemical exposures immediately to the CHO or supervisor;
• Promoting good housekeeping practices in the laboratory or work area;
• Escorting students and/or visitors in the laboratory; and
• When providing access for professional visitors, providing access to the laboratory’s Chemical Hygiene Plan, relevant SOPs, the list of hazards and controls, including emergency action and reporting requirements. Obtain a signed acknowledgment and sending a copy of this signed acknowledgment to SRS.

**PROFESSIONAL VISITOR** engaged in the use of hazardous chemicals are responsible for:

• Acknowledging receipt and understanding of the laboratory’s Chemical Hygiene Plan, relevant SOP’s, and what to do in case of an emergency.

**STUDENTS AND VISITORS** engaged in the use of hazardous chemicals are responsible for:

• Remaining with their escort and following their instructions;  
  **OR**
• Reading and understanding the requirements of the UNM and lab-specific Chemical Hygiene Plan and SOPs, or be escorted by someone that has;
• Planning and conducting operations in accordance with the UNM Chemical Hygiene Plan and applicable laboratory-specific Standard Operating Procedures;
• Using all required engineering controls and PPE;
• Notifying the Chemical Hygiene Officer or supervisor of any hazardous conditions or unsafe work practices in the work area;
• Reporting all accidents and potential chemical exposures immediately to the CHO or supervisor; and
• Promoting good housekeeping practices in the laboratory or work area.

**INFORMATION AND TRAINING**

PIs, supervisors and lab managers, in consultation with SRS, shall provide information and training to inform all lab workers and students of the physical and health hazards of the hazardous chemicals in their work area. The information and training must be provided to the worker or student at the time of her/his initial assignment to work involving the use of hazardous chemicals, prior to assignments involving new exposure situations, and upon changes in the procedures and/or chemicals that present new hazards in the work area. Also, annual refresher training on the Chemical Hygiene Plan is required for all laboratory employees and students. Training shall be documented in Learning Central or other method approved by the CHO, and readily available for inspection.

Basic chemical safety training will include the following information:

• Explanation of UNM’s Chemical Hygiene Plan including labeling system, SDSs, and how employees can obtain chemical hazard information, including information on occupational exposure limits;

• A description of the various methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area;

• General guidance on the selection of protective measures to reduce chemical exposure

• Information on safety resources; and

• General emergency procedures to be used in the event of accidental exposure to hazardous chemicals, including emergency phone numbers.

In addition to general chemical safety training, lab workers and students must be provided with area-specific training and information. This training will include:

• The specific physical and health hazards of chemicals used in their work areas, including signs and symptoms of exposure;

• The specific protective measures required when using the chemicals in their work area;

• The specific methods and observations that may be used to detect the presence or release of a hazardous chemical in their work area;

• The location of eye washes and safety showers, and how to use them in the event of a chemical exposure; and

• Training on the applicable details of the Chemical Hygiene Plan relevant to their laboratory.

All training provided must be properly documented. Documentation shall include at minimum, the title of training, name of trainer, date the training was offered, name and signature of participants and the training material.

\textbf{STANDARD OPERATING PROCEDURES}

Before beginning any work involving hazardous chemicals, SOPs will be developed by the PI/laboratory supervisor for procedures in which hazardous chemicals are used, or for each hazard class used in the laboratory. All SOPs must have a Job Hazard Analysis (JHA), which identifies the task(s), the hazard for each task, and the controls (engineering controls, administrative controls, personal protective equipment controls). A JHA form, attached to this document, can be attached to any SOP, for ease of review by all who use the SOP. An SOP may be one of three different types. These are:
Hazardous chemical: the SOP is specific to an individual chemical such as nitric acid or ethylene oxide. (Recommended for OSHA designated Particularly Hazardous Substances);
Process: the SOP will be for a process such as distillation, synthesis, etc.; or
Hazard class: the SOP will be for a hazard class of chemicals such as oxidizer, flammable, corrosive, etc.

The choice of SOP type and the number of SOPs is left to the discretion of the PI/laboratory supervisor. For an uncomplicated, routine activity involving very few materials a process SOP may be adequate while an activity involving multiple chemicals might be best addressed using a combination of process and hazard class SOPs. In the case of OSHA designated Particularly Hazardous Substances (PHS), it is recommended that a separate SOP be written that specifically addresses the PHS.

In the case of an OSHA designated Particularly Hazardous Substance, laboratory-specific standard operating procedures must include the following requirements where appropriate:

- Establishment of a designated area;
- Use of containment devices such as fume hoods or glove boxes;
- Other mandatory controls including personal protective equipment;
- Procedures for safe removal of contaminated waste; and
- Decontamination procedures.

The laboratory supervisor, with SRS’s assistance, as needed, will determine what engineering controls and personal protective equipment are necessary for each SOP. The SOPs will be included as part of the laboratory-specific Chemical Hygiene Plan.

CHEMICAL HAZARD MANAGEMENT

CHEMICAL PROCUREMENT

Chemicals shall be purchased one of four ways:

1. Through the Enterprise Reagent Manager (ERM) system, using a UNM issued Purchase Card (P-card). ERM is a web-based chemical inventory management system. ERM can link to LoboMart which hosts catalogs for different chemical vendors;
2. By purchase requisition or P-Card through the Chemical and Research Laboratory Supplier (CRLS) located at Clark Hall (Building 22);
3. By walk-in to CRLS for purchases; or
4. Directly from a vendor, outside of ERM, using a P-Card or Purchase Order. Chemicals purchased using this method must be immediately barcoded and entered into ERM by the purchaser upon delivery. Contact SRS for bar codes.

UNM-SRS has implemented a web-based inventory program: Enterprise Reagent Manager (ERM) which links with an acquisition program of Chemical and Research laboratory Supplier (CRLS) to a web based inventory management system. Authorized users can access the ERM system if they are on a computer hard-wired into a UNM server. Training on how to use ERM can be found on Learning Central. To access ERM for the first time, please contact SRS. Chemical inventory records require the name of the chemical, CAS number, building and room number, size and number of containers, and must be entered into the ERM chemical inventory management system. When hazardous chemicals are donated to an activity, they must be included in the activity’s chemical inventory.

Before a decision is made to acquire a chemical, the purchaser will determine whether:

- A Safety Data Sheet is available;
- The proposed quantity is an appropriate amount for the activity;
- There is a less hazardous or non-hazardous chemical available;
- There is a surplus chemical available from another chemical owner; and
- Information and facilities are available for safe disposal of hazardous waste generated by that chemical’s use

CHEMICAL INVENTORY
All chemicals shall be purchased using one of the methods listed above.

UNM laboratories are required to maintain an accurate, up-to-date inventory of all hazardous chemicals known to be present using a product identifier that is referenced on the appropriate Safety Data Sheet. Each laboratory is responsible for maintaining their own inventory, using ERM. SRS will provide initial chemical inventory entry into ERM, upon request by the laboratory, which will then be maintained by the laboratory personnel. SRS will also conduct periodic checks of each lab’s chemical inventory to make sure it is up to date.

SAFETY DATA SHEETS (SDS)
Safety Data Sheets (SDSs) (formerly MSDSs or Material Safety Data Sheets) are required for all chemicals located in the laboratory, including those that are produced in the lab, received from a distributor or importer. When an SDS is not available the chemical owner is responsible for preparing a SDS. Exceptions to developing SDS may apply for chemicals that
are produced in the laboratory solely for in-house use in the lab. See OSHA letter of interpretation located at:

Contact the organizational Chemical Hygiene Officer or Safety and Risk Services at 277-2753 for assistance in developing an SDS.

Work area supervisors shall ensure that lab workers and students have ready access to Safety Data Sheets for all hazardous chemicals used in their work area in accordance with the applicable requirements in 29 Code of Federal Regulations (CFR) 1910.1200, Hazard Communication and 29 Code of Federal Regulations (CFR) 1910.1450, Occupational Exposure to Hazardous Chemicals in Laboratories. Work area supervisors must also ensure that lab workers and students review the SDS prior to initially working with the chemical.

LABELS
Each hazardous chemical container in the workplace shall be labeled in accordance with 29 Code of Federal Regulations (CFR) 1910.1200, Hazard Communication. Chemicals shipped prior to June 1, 2015 must be labeled either in accordance with HazCom 1994 or the 2012 revised standard. HazCom 1994 requires that each hazardous chemical container in the workplace shall be labeled, tagged or marked to provide:

- The identity of the hazardous chemical;
- Appropriate hazard warning information for worker protection (physical and health hazards); and
- The name and address of the chemical manufacturer, importer, or other responsible party.

All hazardous chemicals from manufacturers and distributors only, beginning June 1, 2015, must be labeled in accordance with the new OSHA Hazard Communication standard, known as the Globally Harmonized System (GHS), as outlined in the OSHA HazCom standard modifications of 2012. This standard requires each hazardous chemical container in the workplace be labeled, tagged or marked to provide:

- Product identifier;
- Signal word;
- Hazard statement(s);
- Pictogram(s);
• Precautionary statement(s); and

• The name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.

For further explanation of the labeling components, including pictograms and signal words, go to: <https://www.osha.gov/dsg/hazcom/index.html>.

Exceptions to this requirement are:

• Signs, placards, process sheets, batch tickets, operating procedures or other such written materials may be used in lieu of affixing labels on individual stationary process containers as long as the alternative method identifies the containers to which it is applicable and conveys the information required to be on the label.

• Portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use (i.e., during the work shift) of the worker who performs the transfer need not be labeled. However, if the container is left unattended for any period of time, a label is required that includes the name of the chemical, date created, and the owner of the container.

• Solid metal (such as a beam or a metal casting), solid wood, or plastic items that are not exempted as articles due to their downstream use, have signs, placards, operating procedures, or other such written materials used in lieu of affixing labels to individual items and are only used as long as the alternative method identifies the material to which it is applicable and conveys the required above information.

• Drugs which are dispensed by a pharmacy to a health care provider for direct administration to a patient.

Portable, secondary or other in-house workplace containers must be labeled with all of the required information that is on the label from the chemical manufacturer or, the product identifier and words, pictures, symbols or a combination thereof which provide specific information regarding the hazards of the chemical.

Alternative labeling systems such as National Fire Protection Association (NFPA) diamonds or the Hazardous Material Information System (HMIS) are allowed for workplace labels as long as they are consistent with the 2012 revised HazCom Standard (e.g. no conflicting hazard warnings or pictograms).

Chemical labels shall be maintained in legible condition and not to be removed or defaced. Any chemical container without a label should be reported to the lab supervisor immediately.

All pipes and piping that contains hazardous chemicals contents must be labeled in accordance with applicable UNM standards. Where a UNM standard for labeling pipes that contain
hazardous chemicals does not exist, refer to ANSI/ASME A13.1 or other national consensus standard. An SDS will be maintained for hazardous materials piped, and the same name will be on the label, in an easily readable size and location, as is on the commensurate SDS. Hazardous material pipe labeling will be applied such that the piping contents will be easily identifiable by someone that may impact or perform maintenance/modification on the line. Contact SRS for more details.

Containers into which chemical waste are being accumulated must be labeled with the words “Hazardous Waste” and the chemical contents listed on the container. For more information on managing hazardous waste refer to Safety and Risk Services procedure for managing hazardous waste.

CHEMICAL STORAGE

Storage includes all chemical phases and all types of containers including, but not limited to, tanks, piping, cylinders, and containers of solid, liquid, or gaseous chemicals. Storage includes all chemicals or chemical products, including used and unused chemicals, sealed, opened, or partially filled containers, working solutions, day-use containers, and chemical “residues” left within tanks, piping, or other containers. There are additional regulatory requirements that must be complied with when storing Hazardous Waste. Those requirements are not covered in this document. For information on how to store hazardous waste, refer to Safety and Risk Services procedures for managing hazardous waste.

All chemicals must be stored by hazard class, with incompatible chemicals segregated to prevent accidental contact with one another. Chemical storage will be limited to the quantity necessary to perform the work, and within safe limits. Liquid hazardous chemicals in laboratories should be stored so that a spill will not exceed 20 L (5 gallons), as required by NFPA 45, Standard on Fire Protection for Laboratories Using Chemicals. Flammable and combustible liquids must be limited to less than the maximum quantities allowed in Table 10.1.1 of NFPA 45 (See Attachment 3).

Refrigerators and freezers used for storing flammable liquids must be specifically designed (e.g. explosion proof, laboratory safe) for that purpose. All chemical storage refrigerators shall only be used for storing chemicals, never food or drink. These refrigerators are to be labeled “NO FOOD OR DRINK TO BE STORED IN THIS REFRIGERATOR,” or similar wording.

Containers of materials that might become hazardous during prolonged storage (i.e. peroxide forming chemicals) will be dated when first opened. At the end of six months after opening, the material will be evaluated or tested for continued safe use. For a list of peroxide forming chemicals and testing methods refer to the Chemical Storage Program in the Safety and Risk
Services Manual.

Material that is found to be safe or that can be stabilized to be made safe will be permitted to be re-dated and retained for an additional 6-month period, or according to manufacturer’s instructions, whichever is more stringent. All other material will be safely and compliantly discarded.

Further requirements for the storage of chemicals are contained in the UNM Chemical Storage Program (refer to Safety and Risk Services Manual)

All compressed gas cylinders, whether in use or in storage, empty or full, shall be secured by a chain or other effective fastening device preventing the cylinder from falling over. Users of compressed gas cylinders must comply with the requirements contained in the SRS Compressed Gas Cylinder Program (refer to the Safety and Risk Services Manual).

TRANSPORTATION

If a hazardous chemical is produced in a UNM laboratory for another user outside of the laboratory, or if any hazardous chemical is shipped over public roads from the laboratory, the chemical owner will provide labels and SDSs that meet applicable OSHA and Department of Transportation (DOT) requirements. Some DOT requirements are found in 49 CFR Part 171.

On-site and off-site transportation of chemicals will be done in accordance with applicable DOT and EPA requirements. Transportation refers to movement of chemicals within and between buildings, on-site vehicular movement of chemicals on non-public roads, and both on-site and off-site vehicular movement of chemicals on public roads.

**On-Site Transportation**

Hazardous chemicals that are transported between stockrooms and laboratories must be done using break-resistant secondary containment, such as commercially available bottle carriers, large enough to hold the contents of the chemical container(s) in the event of breakage. Heavy or multiple containers should be moved using laboratory carts and freight-only elevators should be used when available. On-site movements via vehicle must be done in a UNM vehicle, with a list of the hazardous materials by hazard class and quantity inside the vehicle. Hazardous materials must be secondarily contained, not in the cab of the vehicle (or in space that is contiguous with the cab), and secured against movement while the vehicle is in motion.
Compressed gas cylinder handling shall be with a suitable hand truck, secured by straps or chains, and the valve protected with a cover cap or a protection designed cylinder (as in the case of a Dewar). Dragging, sliding, or rolling of cylinders should be avoided.

**Off-Site Transportation and Shipment**
The transportation and shipment of hazardous chemicals and compressed gases is strictly regulated by international, federal, and state agencies including the Department of Transportation (DOT) and the International Civil Aviation Organization (ICAO). Only specially trained persons are allowed to prepare and/or ship these materials. The shipment of hazardous materials by untrained persons is illegal and violators are subject to criminal penalties. UNM employees who prepare and package hazardous material for shipment, or sign hazardous materials manifests and shipping papers must be trained and hold a current certification by the training institution. Personnel who wish to ship or transport hazardous chemicals or compressed gases off-campus must contact Safety and Risk Services at 277-2753.

**CHEMICAL EXPOSURE CONTROL**

**Hierarchy of Controls**
A hierarchy of control methods should be used to ensure that any chemical exposures do not exceed OSHA Permissible Exposure Limits (PELs) or other established occupational exposure limits (OELs) when an appropriate PEL does not exist. The hierarchy of controls prioritizes intervention strategies based on the premise that the best way to control a hazard is to systematically remove it from the worker’s environment, rather than relying on employees to reduce their exposure. The types of measures that should be used to protect employees (listed from most effective to least effective) are: elimination/substitution, engineering controls, administrative controls, work practices, and personal protective equipment. Engineering controls, such as chemical fume hoods, physically separate the employee from the hazard. Administrative controls, such as operating procedures and training, minimize or eliminate hazards by controlling work practices. Personal protective equipment and clothing provide additional protection when an exposure is either unavoidable or there is a likelihood of an inadvertent exposure. The hierarchy of controls should be implemented in the following order:

- Elimination/substitution whenever feasible
- Engineering controls, whenever feasible
- Administrative controls whenever engineering controls are not feasible or do not achieve full compliance and administrative controls are practical
- Personal protective equipment, including respiratory protection, when:
The time period necessary to install or implement feasible engineering controls
- engineering and administrative controls fail to achieve full compliance
- there is an emergency

### Elimination/Substitution
Elimination of a hazardous chemical or substitution of a hazardous chemical with a less hazardous chemical is the preferred method to control chemical hazards. Whenever possible, personnel will consider eliminating hazardous chemicals, substituting less hazardous chemicals, and minimizing the amount of chemicals required for a hazardous chemical activity. In addition to reducing potential personnel exposures, these measures limit UNM’s environmental impact and support UNM’s waste minimization/pollution prevention efforts.

### Engineering Controls

#### Laboratory Ventilation
All work with chemicals should be performed so that personal exposures to hazardous chemicals, and the potential for vapor or dust explosion is minimized. The best way to accomplish this is by using Local Exhaust Ventilation (LEV) systems such as chemical fume hoods, snorkels, down draft tables, glove boxes and toxic gas cabinets. Chemical fume hoods are most often the primary control device used when working with flammable and/or toxic chemicals. Chemical fume hoods or other suitable engineering controls should be used when working with all hazardous substances and must be used for all work with OSHA designated particularly hazardous substances.

All laboratory fume hoods and other LEV must be certified annually or whenever a significant change has been made in its use or location. Chemical fume hood certification is determined by several factors, including the average face velocity, the overall condition of the hood, the types and quantities of chemicals used in the hood. All chemical fume hoods must maintain an average face velocity that is adequate to provide containment. Such face velocities typically range from 80-125 fpm at a sash height of 18 inches. Fume hood evaluations will include the quality of the structure, the installation, air flow patterns, and use of the hood. Chemical fume hood evaluations and certifications will be conducted by qualified SRS personnel or an SRS-approved third party vendor.

A certification sticker will be placed on all hoods that meet the standards described above. The sticker will be placed on the side of the hood with an arrow that shows the maximum safe operating sash height.
If the hood does not pass the certification, it will be labeled with a red "DO NOT USE" sticker. That means hood is not certified for use and may be unsafe. Hoods that do not pass will receive priority maintenance. PPD will notify SRS when the hood is repaired and SRS will re-evaluate the hood prior to use.

Information on recommended practices for safe use of chemical fume hoods can be found on the SRS website.

Prior to certification all new chemical fume hoods must have an alarm system to alert personnel if the hood is not functioning properly and it is recommended that established hoods be retrofitted with an alarm system.

The use of ductless fume hoods shall be limited only to operations that could be performed on an open bench without presenting an exposure hazard. The use of ductless fume hoods for operations involving hazardous chemicals is prohibited.

When a UNM standard does not exist, LEV will be certified using the manufacturer’s standard or other acceptable consensus standard, such as the ANSI, ASHRAE standard. For additional guidance on requirements governing the design, installation, maintenance and use of chemical fume hoods and other LEV systems contact Safety and Risk Services.

**ADMINISTRATIVE CONTROLS**

Administrative controls include policies and procedures. They are not as reliable as engineering controls in that the user has to carefully follow procedures and must be fully trained and aware to do so.

While general guidance regarding laboratory work with chemicals is contained in this plan, before beginning any work involving hazardous chemicals, SOPs will be developed for each laboratory by the PI/laboratory supervisor. In many cases, a general standard operating procedure can be created for a group of laboratories that have similar chemical hazards and operations. During the development of the SOP, the Safety Data Sheet (SDS) for each hazardous chemical that will be addressed in the SOP should be referenced. The SDS contains important information such as exposure limits, type of toxicity, warning properties, signs and symptoms of exposure, and recommended PPE. If an SDS is not available for a new chemical that will be produced, and the toxicity is unknown, the chemical should be considered a Particularly Hazardous Substance.

The PI/laboratory supervisor, with SRS’s assistance, will determine what engineering controls and personal protective equipment are necessary for each SOP. The SOPs will be included as
part of the laboratory-specific Chemical Hygiene Plan. The Principal Investigator and all personnel responsible for performing the procedures detailed in the SOP shall sign the SOP acknowledging the contents, requirements and responsibilities outlined in the SOP. The SOPs shall be reviewed annually and shall be amended when there are changes in chemicals, conditions, methods, or equipment. For certain hazardous chemicals, PHS, or specialized practices, consideration must be given to whether additional consultation with safety professionals is warranted or required.

Circumstances requiring prior approval from the PI/Laboratory Supervisor will also be addressed in protocols and/or SOPs.

**Personal Protective Equipment (PPE)**
Lab requirements for PPE must be specified by the PI/laboratory supervisor, based on an evaluation of potential hazards. The minimum required PPE for laboratory chemical operations includes:

- safety glasses with side shields,
- protective gloves,
- a laboratory coat,
- closed-toe shoes, and
- Long pants or other clothing that covers the legs.

Flame resistant laboratory coats are recommended for pyrophorics, and flammables. Based on a chemical’s hazard warning label or Safety Data Sheet, additional or more protective equipment may be required. For instance, if a project involves a chemical splash hazard; chemical goggles and/or face shields, aprons, and sleeves may be needed. Gloves, lab coats and any other potentially contaminated PPE shall not be worn outside the laboratory or into areas where food is stored and consumed.

All PPE must be appropriate for the chemicals being used and eye protection must be American National Standards Institute (ANSI) approved. Gloves should only be used under the specific conditions for which they are designed and selected. Based on the specific chemical hazards present, gloves should be selected by referring to glove manufacturer’s selection charts. If adequate information cannot be obtained from the SDS or other sources, contact SRS at 277-2753 for assistance. For more information on PPE, refer to the Personal Protective Equipment Program in the SRS Manual.

**Respiratory Protection**
Respiratory protection should be the last choice in protecting lab personnel if the hazard cannot be eliminated through substitution of safer chemicals and/or engineering controls. Personnel required to wear a respirator at UNM shall do so only after medical authorization, documented training and documented fit testing. Contact SRS at 277-2753 for assistance with training on respiratory protection and fit testing. For more information, refer to the Respiratory Protection Program in the SRS Manual.

All personal protective equipment should be kept clean and stored in an area where it will not become contaminated. Contaminated PPE should be cleaned or discarded and replaced. PPE should be inspected prior to use and replaced if unserviceable. Non-disposable gloves that become contaminated or degrade over time must be discarded and replaced.

**PARTICULARLY HAZARDOUS SUBSTANCES**

Additional safety requirements may apply for work with OSHA designated Particularly Hazardous Substances. These include select carcinogens, reproductive toxins, and chemicals having a high degree of acute toxicity. The following controls are to be used as appropriate for the agent and process:

- Establishment of a designated area;
- Use of containment devices such as fume hoods or glove boxes;
- Mandatory administrative controls and PPE;
- Procedures for safe removal of contaminated waste; and
- Decontamination procedures.

Designated areas for particularly hazardous substances must be formally established by developing SOPs and posting appropriate signage. A designated area can be the entire laboratory, a specific laboratory workbench, or a laboratory hood. Designated areas must be clearly marked with signs that identify the hazard and include an appropriate warning. Signage is also required for all containers and storage locations. Entrances to designated work areas and storage locations must include signage, “AUTHORIZED PERSONNEL ONLY”, in addition to the specific hazard warning wording.

Access to areas where particularly hazardous substances are used or stored must be controlled and limited to trained personnel when particularly hazardous substances are in use.
CHEMICAL EXPOSURE ASSESSMENT

SURVEYS AND MONITORING
Safety and Risk Services will conduct industrial hygiene surveys to evaluate chemical hazards for laboratory operations. Industrial hygiene surveys will include an assessment of the degree of worker exposures to chemicals and evaluation of exposure control measures. The industrial hygiene survey may include any of the following:

- Personnel interviews
- Reviewing chemical inventories and Safety Data Sheets
- Visual observation of laboratory operations/work practices
- Evaluation of potential exposure routes
- Evaluation of existing engineering controls
- Evaluation of Personal Protective Equipment
- Direct reading instrumentation

Where an industrial hygiene survey indicates workers might be exposed at or above an applicable occupational exposure limit, Safety and Risk Services will perform personal exposure monitoring to determine if exposures are within limits or if exposures need to be reduced. When necessary, utilizing the hierarchy of controls, SRS will make recommendations to reduce exposures below occupational exposure limits.

Medical consultation and medical surveillance will be provided for those potentially exposed above recognized standards or action levels, if there are signs or symptoms of a workplace exposure, or if the employee or supervisor express a concern over exposure and a need for medical consultation. See the sections on Medical Consultation and Medical Surveillance for more details.

MEDICAL CONSULTATION
All UNM employees, who work with hazardous chemicals shall have an opportunity to receive a free medical evaluation, including supplemental examinations which the evaluating physician determines necessary, under the following circumstances:

- Whenever they develop signs or symptoms associated with a hazardous chemical to which the worker may have been exposed in a laboratory.
- Where exposure monitoring reveals an exposure level routinely above the OSHA action level (or in the absence of an OSHA action level, the PEL or recommended exposure levels established by the National Institute for Occupational Safety & Health (NIOSH) or the American Conference of Governmental Industrial Hygienists (ACGIH)).
• Whenever an event takes place in the work area such as a spill, leak, explosion, or other occurrence resulting in the likelihood of hazardous exposure.

All medical examinations and consultations will be performed by or under the direct supervision of a licensed physician and be provided without cost to the employee, without loss of pay and at a reasonable time and place.

Employees may obtain free medical consultation regarding concerns about chemical or other occupational exposures by contacting Employee Occupational Health Services (EOHS) at 272-8043. Students with concerns about chemical or other occupational exposures should contact Student Health Services at 277-7810. These medical services include reproductive health matters related to chemical exposures.

MEDICAL SURVEILLANCE

• All employees who will potentially work with hazardous chemicals will have a pre-employment or an initial medical history and/or physical through Employee Occupational Health Services (EOHS). Employees with exposure to hazardous chemicals or other hazards that are covered under OSHA’s expanded standards shall be provided medical surveillance by EOHS as prescribed by the specific applicable OSHA standard.

Examples of hazards that are monitored through medical surveillance may include:

• Asbestos
• Benzene
• Ethylene Oxide
• Formaldehyde
• Lead
• Methylene Chloride
• Noise (Hearing Conservation Program)
• Respirator Use (Respiratory Protection Program)

Employees may be removed from medical surveillance when participation is no longer required due to a change in activities, job, exposure, etc.

Employees with questions regarding work-related medical surveillance should contact EOHS at 272-8043 or SRS at 277-2753 for more information.

LABORATORY AUDITS
The laboratory Chemical Hygiene Officer shall conduct and document an annual self-audit to assess laboratory compliance with the laboratory Chemical Hygiene Plan. The UNM Laboratory Audit Form is attached.

HAZARDOUS CHEMICAL SPILLS AND ACCIDENTS

All incidents must be reported to the supervisor and Safety and Risk Services immediately, when safe to do so. Incidents may include work related injuries, illnesses, property damage; spills or releases of hazardous substances, hazardous wastes, wastewater; regulatory violations. Priority must always be the safety and health, and appropriate medical treatment to those impacted by an incident. Notification to SRS can be made by calling 505-277-2753 during working hours, or 505-951-0194 in off-working hours. After initial notification, an incident reporting form must be completed by the person reporting the incident, and submitted to SRS. An incident reporting form can be downloaded from the SRS website.

Lab workers, including students must be provided the necessary training and understand the required spill response procedures before working with a hazardous chemical. It is the responsibility of the lab supervisor and/or chemical hygiene officer to provide training, provide spill control clean-up materials and personal protective equipment appropriate for the chemicals being handled readily available and accessible. The Chemical Hygiene Officer Handbook, with training guidelines are attached.

MINOR SPILLS

A minor chemical spill is one that does not present an imminent danger to people, property, or the environment and the workplace staff is capable of handling safely without the assistance of safety and emergency personnel (no additional personal protective equipment or personnel are required beyond normal operations with the hazardous materials). Properly trained, lab workers may clean up smaller spills, following spill control, mitigation, clean up and reporting procedures given in the Chemical Spill Response Program in Safety and Risk Service Manual, or other approved lab or chemical specific spill cleanup procedure developed for that specific lab, area or process. Spill kits with instructions, absorbents, reactants and appropriate personal protective equipment (PPE) are to be maintained by the lab for the clean-up of minor spills.
Major Spills
A major spill is a large spill or an acutely toxic spill. A major spill presents an imminent danger to people, property, or the environment, and is not easily controlled by the worker. Lab workers should only clean up major hazardous chemical spills after they have received appropriate training, and when appropriate spill cleanup materials and PPE are readily available and are properly utilized. Otherwise, in the event of a major spill for which personnel are not trained and prepared, and particularly if any person has been significantly exposed, contaminated or injured to such an extent that medical or other outside assistance is required, follow the E.A.R. steps:

**Evacuate** affected area and close doors;

**Alert** Campus Police by calling 911; and

**Remain** close to the phone, if requested to do so, until contacted by emergency responders

All personnel potentially adversely affected in any way during an incident or accident should report for medical evaluation. Refer UNM employees exposed to hazardous chemical spills to Employee Occupational Health Services at 272-8043. Students are to be referred Student Health Services 277-7810.

If any chemical spill occurs outside a building, with potential for adversely impacting storm water quality, contact Safety and Risk Services at 277-2753. If this attempt fails, call Campus Police and request that the appropriate Safety and Risk Services staff be contacted. Manage all debris and waste resulting from the cleanup of a spill as though it contains the hazardous chemical, and in accordance with SRS hazardous waste program.
EMERGENCY RESPONSE EQUIPMENT AND KITS

Emergency Showers and Eye Wash Stations

Laboratories in which hazardous materials are used must be equipped with plumbed eyewash and safety showers. Safety showers must be located such that they are accessible, require no more than ten (10) seconds to reach from the location of the hazard and are within 55 feet of the potential hazard. Eyewash units must be located such that they are accessible, require no more than ten (10) seconds to reach and are within 55 feet of the potential hazard (10 feet where strong corrosives are the hazard). **NOTE: Remember the injured worker may have to locate the unit while blinded by a contaminant.**

Eyewash and showers must be kept accessible. Material shall not be stored or placed in such a manner that would block access to an eyewash or shower. It is recommended that eyewash stations and safety showers be activated at least weekly. It is required that eyewash stations and safety showers be activated, inspected and maintained at least monthly.

Lab instructors/supervisors must train all persons that might be exposed to potentially injurious materials in the location and proper operation of eyewash, eye/face wash and safety shower units. Contact Safety and Risk Services for training materials or other assistance with this training.

HAZARDOUS WASTE MANAGEMENT

All hazardous waste shall be managed and disposed of according to SRS Hazardous Waste Program. To request hazardous waste pickup from SRS, click here <https://srs.unm.edu/hazardous-materials/>.

Contact Safety and Risk Services at 277-2753 for assistance.

RESOURCES

**Regulatory Guidance**
- OSHA 29 CFR 1910.1450, Occupational Exposure to Hazardous Chemicals in Laboratories
- OSHA 29 CFR 1910.132, Personal Protective Equipment
- OSHA 29 CFR 1910.133, Eye and Face Protection
• **OSHA 29 CFR 1910.134, Respiratory Protection**
• **OSHA 29 CFR 1910.138, Hand Protection**

**Chemical Laboratory Safety**
• American Chemical Society, *Safety in Academic Chemistry Laboratories, 7th Ed., vol. 1*, (Student) ([www.acs.org](http://www.acs.org))
• American Chemical Society, *Safety in Academic Chemistry Laboratories, 7th Ed., vol. 2*, (Teacher) ([www.acs.org](http://www.acs.org))

**Occupational Exposure Limits**
• **OSHA 29 CFR 1910.1000, Air Contaminants** Subpart Z contains a list of OSHA PELs for hazardous chemicals
• American Conference of Governmental Industrial Hygienists, *ACGIH® Threshold Limit Values and Biological Exposure Indices*, ([http://www.acgih.org/](http://www.acgih.org/))

**Properties of Hazardous Chemicals**
• **NIOSH Pocket Guide to Chemical Hazards** ([http://www.cdc.gov/niosh/npg/](http://www.cdc.gov/niosh/npg/)) Industrial hygiene information on several hundred chemicals/classes including information on OSHA PELs, exposure routes, exposure symptoms, target organs, and first aid. Also contains personal protective equipment recommendations including respiratory protection. Available free online as either an online resource or downloadable format.
• **The Merck Index, 14th Edition** An encyclopedia of chemicals, drugs, and biologicals. Contains information on chemical and physical properties, hazards and therapeutic category, if applicable.
• **Sax's Dangerous Properties of Industrial Materials, 12th Edition** Hazard reference source for 28,000 substances encountered in industry. Contains data on toxicology, flammability, reactivity, explosive potential, and regulatory information.
• **Bretherick's Handbook of Reactive Chemical Hazards, 7th Edition** Considered to be the best source of information on reactivity risks such as fire, explosion, toxic material releases or high energy events of chemicals alone and in combination. Contains more
than 5,000 entries on single elements or compounds, and 5,000 entries on interactions between two more compounds.
ATTACHMENTS

1. UNM Job Hazard Analysis Form

2. SOP – Hazardous Material Specific Template

3. NFPA 45 Table 10.1.1. Maximum quantities of flammables and combustibles in sprinklered laboratories

4. Laboratory Self-Audit Checklist

5. Incident Reporting Form-UNM

6. Professional Visitor Safety and Health Awareness Acknowledgement Form

7. Chemical Safety Officer’s Handbook
JOB HAZARD ANALYSIS
(JHA)
FORM
**UNM Job Hazard Analysis (JHA)**

Job Analyzed: ____________________________________________________________ Date: ________________

Dept.: _______________________________ Building: _______________________ Lab No.:_____________________

<table>
<thead>
<tr>
<th>JOB TASK / STEP DESCRIPTION</th>
<th>HAZARD DESCRIPTION</th>
<th>HAZARD CONTROLS</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

Developed by (print): _______________________________________________________ Date: _________________

Reviewed by:

Process Owner: ________________________________________ Date: _______________ Approved: Yes:☐ No:☐

Dept Head: ___________________________________________ Date: _______________ Approved: Yes:☐ No:☐

UNM SRS: ____________________________________________ Date: _______________ Approved: Yes:☐ No:☐

Note: Add columns and pages as needed to accommodate Job tasks, hazards, and controls.
# Brief Experimental Summary: Provide a general description of the process and/or experimental procedure.

List the chemicals that fall under this SOP, include CAS#, and GHS symbols and categories:

<table>
<thead>
<tr>
<th>Chemical (CAS#)</th>
<th>GHS categories</th>
<th>GHS symbols – choose the appropriate symbols for each chemical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Choose an item.</td>
<td>Click here to enter text.</td>
</tr>
</tbody>
</table>

- Health Hazard
- Flame
- Exclamation Mark
- Gas Cylinder
- Corrosion
- Exploding Bomb
- Flame Over Circle
- Environment
- Skull and Crossbones

# Procedure Description: Include all steps for the procedure from the preparation to waste disposal, along with decontamination/clean-up steps. For each step's description, include any step-specific hazard, personal protective equipment, engineering controls, designated work areas, and specific working alone restrictions in the left hand columns. Note the location and use of any emergency response equipment specific to process (e.g., Calgonate gel, Class D fire extinguisher, inert absorbent material).

**Working Alone:** Working alone is not recommended. Notify your coworkers prior to conducting this work and ensure that at a minimum of 1 person is nearby and aware that the work is occurring.

**Scale:** Work on as small a scale as possible. Do not exceed volumes/masses of...
**Procedure Steps**

- Click here to enter text.
- Click here to enter text.
- Click here to enter text.

**Work Location / Safety Equipment**

- Click here to enter text.
- Click here to enter text.
- Click here to enter text.

**Precautions**

- Click here to enter text.

---

**#3 Personal Protective Equipment (PPE):** *List the personal protective equipment used during this process.*

**Note:** PPE is to be worn by those conducting the work and any adjacent personnel.

**Eye Protection:** ANSI-approved properly fitting safety glasses or goggles. Chemical splash goggles and/or full face shield during activities which pose a splash hazard.

**Body Protection:** An appropriately-sized lab coat must be worn and buttoned. Laboratory coat sleeves must be of sufficient length to prevent direct skin exposure while wearing gloves. Full length pants (or equivalent) and closed toe/heel shoe attire must be worn at all times by all workers who are occupying or entering a laboratory/technical area. The area of skin between the pants and shoe should not be exposed.

Check box for specialty lab coat:  ☐ Nomex/Flame Resistant  ☐ Biological Barrier  ☐ Other  

**Hand Protection:** Wear chemical-resistant gloves; remove gloves and wash hands with soap and water after use. Double gloves may provide additional protection for some chemicals. If prolonged contact or immersion is anticipated, consult with EH&S to identify appropriate protective gloves.

**Additional Protection:**  ☐ Face Shield  ☐ Chemical-Proof Apron  ☐ Respiratory Protection  ☐ Additional Gloves  ☐ Other

---

**#4 Incompatible Conditions and Materials:** *List the incompatible conditions, chemicals, and/or materials that should be avoided, along with the safe storage conditions.*

- Click here to enter text.

**Material:**

- Click here to enter text.
- Click here to enter text.
- Click here to enter text.

**Incompatibility:**

- Click here to enter text.
- Click here to enter text.
- Click here to enter text.

**Storage Conditions:**

- Click here to enter text.
- Click here to enter text.
- Click here to enter text.

---

**#5 Training:** *Training required for all personnel conducting this procedure. Include any specific training requirements.*

- Complete EH&S online “Basic Laboratory Training” course available through the UNM Learning Center ([https://learningcentral.health.unm.edu/learning/user/login.jsp](https://learningcentral.health.unm.edu/learning/user/login.jsp)).
- Review SOP with knowledgeable person.
- Complete training on specialized equipment prior to use (e.g., ultracentrifuge, hydrogenation apparatus).
- Other EH&S training requirements (e.g., Biosafety, Radiation Safety, Hazardous Waste Management).
- Click here to enter text.

---

**#6 Clean-Up, Spill, and Emergency Response Procedures (reference the SDS as needed):** *Provide any specific information.*

**Decontamination/Clean-Up:** Wash bench and/or work area with soap and water after using.

**Specific Spill Clean-Up Procedures:** Choose an item.  

- Do not attempt to clean up any spill or release for which you are not fully trained and equipped. For assistance with spill cleanup, dial 911 and 505-951-0194.
- Help contaminated or injured persons.
- Isolate the area to prevent the spread of contamination (e.g. close doors to affected area, post warning signs, alert others in immediately vicinity to evacuate).
- Prevent spill from reaching drains or from spilling outside of the fume hood if possible to do so without exposing yourself to liquid or vapor.
- Clean the affected area and all exposed equipment with soap and water to remove any contaminants before resuming work.
• Spill clean-up materials should be disposed of as hazardous waste.

**Laboratory Emergency Response Equipment:** All research personnel must know location of nearest fire alarm pull station and emergency shower/eyewash. Do not use fire extinguisher unless you are trained to do so. List locations for nearest fire alarm pull and emergency shower/eyewash.

**Emergency Shutdown Procedures:** Click here to enter text.

**#7 Hazardous Waste(s):** List expected concentrations and amounts of hazardous waste(s) generated during this process. Provide any special/specific waste management. Contact SRS for specific guidance regarding hazardous waste handling and disposal, [https://srs.unm.edu/hazardous-materials/hazardous-waste-collection-request.php](https://srs.unm.edu/hazardous-materials/hazardous-waste-collection-request.php).

**Waste Labeling**
- Affix the hazardous waste management label on all waste containers as soon as the first drop of waste is added to the container.

**Waste Storage**
- Store hazardous waste in closed containers, in clean secondary containment, and segregated by hazard class.
- Double-bag dry waste using transparent bags.
- Waste accumulation area must be under the control of the person generating the waste.

**Waste Disposal**
- Containers must be clean, sealed, and safe to transport.
- Use the SRS on-line Hazardous Material Disposal Request (HMDR) form to request a waste pick up.
- Print the HMDR form and place with the waste.
- Send a copy of the completed HMDR to SRS via email at ChemSafety@srs.unm.edu.

Contact SRS Hazardous Materials at 277-2753 or ChemSafety@srs.unm.edu with any questions.

**#8 First Aid / Emergency Procedures:** Describe immediate First Aid or medical treatment required in case of personnel exposure.

For immediate medical assistance, dial **911**. Report all serious injuries to SRS as soon as possible.

- If inhaled, move into fresh air immediately.
- In the case of eye or skin contact, flush with water for a minimum of 15 minutes. Ensure that eyelids are held open while rinsing eyes.
- If ingested, flush mouth with water (only if the person is conscious).
- In the case of a needlestick/puncture injury, wash the affected area with antiseptic soap and warm water for 15 minutes. For mucous membrane exposure, flush the affected area for 15 minutes using an eyewash station. Contact Employee Occupational Health Service (EOHS) at 277-8043.
- Seek medical attention immediately.

As the Principal Investigator, it is your responsibility to ensure that all individuals conducting this protocol are taught the correct procedures for safe handling of the hazardous materials involved. It is also your responsibility to ensure that your personnel complete Laboratory Safety Training and other applicable safety training courses.

- Prior to conducting any work with, the PI or designee must provide training to his/her laboratory personnel regarding the specific hazards involved in working with this substance, work area decontamination, and emergency procedures.
- The Principal Investigator must 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 year.

_I have reviewed and approve this Standard Operating Procedure._

**PI Signature**

**DATE**

---

SOP: [Title]

PI: Click here to enter text.

Page 48 of 60

Version:
## Chemical Information Summary

*Provide information for all chemicals included in the SOP. See the SDS for detailed toxicity information. Add more lines as needed.*

### Physical & Chemical Properties

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS#</th>
<th>Molecular Formula</th>
<th>Structure</th>
<th>Molecular Weight (g/mol)</th>
<th>Density (g/mL)</th>
<th>Form (physical state)</th>
<th>Melting Point (ºC)</th>
<th>Boiling point (ºC)</th>
<th>Flash point (ºC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Click here to enter text.</td>
<td>Click here to enter text.</td>
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</tbody>
</table>

### Exposure Limits/Toxicity Data

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Color</th>
<th>Odor</th>
<th>Cal/OSHA PEL</th>
<th>Toxicity LD₅₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Click here to enter text.</td>
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</tbody>
</table>
Documentation of Training *(signature of all users is required)*

I have read and understand the content of this SOP:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Name</td>
<td>Signature</td>
<td>Date</td>
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</tbody>
</table>
NFPA 45, Table 10.1.1,
Maximum Storage Quantities
of
Flammable and Combustible Liquids
### Maximum Quantities of Flammable and Combustible Liquids and Liquefied Flammable Gases in Sprinklered Laboratory Units Outside of Inside Liquid Storage Areas

<table>
<thead>
<tr>
<th>Laboratory Unit Fire Hazard Class</th>
<th>Flammable and Combustible Liquid Class</th>
<th>Excluding Quantities in Storage Cabinets* or Safety Cans</th>
<th>Including Quantities in Storage Cabinets** or Safety Cans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Max. Quantity per 100 ft.² of Laboratory Unit</td>
<td>Max. Quantity per Laboratory Unit</td>
</tr>
<tr>
<td>A High fire hazard</td>
<td>I*</td>
<td>38</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>I, II, and IIIA</td>
<td>76</td>
<td>20</td>
</tr>
<tr>
<td>B Moderate fire hazard</td>
<td>I*</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>I, II, and IIIA</td>
<td>38</td>
<td>10</td>
</tr>
<tr>
<td>C Low fire hazard</td>
<td>I*</td>
<td>7.5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>I, II, and IIIA</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>D Minimal fire hazard</td>
<td>I*</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>I, II, and IIIA</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

* This category includes Class I flammable liquids and liquefied flammable gases.

** Quantities of liquefied flammable gases shall be treated as if they were Class I flammable liquids; that is, (1.1 gal) of liquefied flammable gas is to be considered equivalent to (1.1 gal) of Class I flammable liquid.

Note: This table is based on Table 10.1.1 of NFPA 45 – Fire Protection for Laboratories Using Chemicals.
## Laboratory Self-Audit Checklist

**Building Name:**

**Date of Survey:**

**Lab Room No:**

**Dept.:**

**Surveyed by:**

Check the boxes that are acceptable, and provide comments on corrections to be made.

<table>
<thead>
<tr>
<th>OK?</th>
<th>Item</th>
<th>OK?</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Lab Signs</td>
<td>5.</td>
<td>Safety Equipment</td>
</tr>
<tr>
<td>a.</td>
<td>Primary and secondary contacts posted with phone #’s</td>
<td>a.</td>
<td>Fire extinguisher available within 75’</td>
</tr>
<tr>
<td>b.</td>
<td>Warning and restriction (if needed)</td>
<td>1.</td>
<td>Unobstructed, mounted, top is 40&quot; high</td>
</tr>
<tr>
<td>c.</td>
<td>Emergency phone numbers posted in labs</td>
<td>2.</td>
<td>Extinguisher insp., sealed charged</td>
</tr>
<tr>
<td>d.</td>
<td>Emergency action plan/SOPs- available and current</td>
<td>3.</td>
<td>Approved for hazard (A, B, C or D)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b.</td>
<td>Safety shower within 55 ft/10 sec.</td>
</tr>
<tr>
<td>2.</td>
<td>Personal Protective Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>PPE (eyeware, gloves,smock) available in lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Proper eye protection use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Visitor glass available (readily)</td>
<td></td>
<td></td>
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<tr>
<td>d.</td>
<td>Proper gloves (chem,cryogenic, heat, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>No shorts/skirts/open-toes</td>
<td></td>
<td></td>
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<tr>
<td>f.</td>
<td>Rubber apron available (for cone. acid/base use).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.</td>
<td>Unobstructed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.</td>
<td>Activated, Inspected and maintained monthly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c.</td>
<td>Eyewash within 55ft 10 sec.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.</td>
<td>Unobstructed, mounted, 40” at top</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.</td>
<td>Activated, inspected and maintained monthly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d.</td>
<td>First aid kit available and marked</td>
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<tr>
<td></td>
<td></td>
<td>e.</td>
<td>Exit signs and ER lights work (need?)</td>
</tr>
<tr>
<td>a.</td>
<td>Walkways and doors unobstructed</td>
<td>a.</td>
<td>Spill kits available (right size, type)</td>
</tr>
<tr>
<td>b.</td>
<td>Adequate lighting, and switches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Excess trash, boxes, combustibles removed promptly</td>
<td>b.</td>
<td>Spill procedures established</td>
</tr>
<tr>
<td>d.</td>
<td>No eating, drinking, smoking food storage in lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>Sharps containers in-tact, no sharps exposed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.</td>
<td>Cords temp, no daisy chains</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.</td>
<td>Power strips for computer only</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.</td>
<td>No cords through walls, floors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b.</td>
<td>No frayed cords, missing insulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c.</td>
<td>3 prong plugs not altered</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d.</td>
<td>GFCI near sinks, in wet areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e.</td>
<td>Electrical panels unobstructed</td>
</tr>
<tr>
<td>Item</td>
<td>Item</td>
<td></td>
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<tr>
<td>------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>8. Refrigerator/Freezers</strong></td>
<td><strong>11. waste Chemicals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. &quot;No Food or Drink&quot; signs on lab units</td>
<td>a. Waste label complete, on container</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Food/drink not stored in unit</td>
<td>b. Containers closed (secondary need)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Flammables in approved flammable refrig.?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>9. Chemical Storage</strong></td>
<td><strong>12. Unstables/Explosives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Chemicals stored by haz class (flam, etc.)</td>
<td>a. Mark with receipt and open dates?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Incompatible chemicals physically separated.</td>
<td>b. Peroxide formers have required disposal date?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Chemicals properly labeled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>10. Training</strong></td>
<td><strong>13. Ventilation, Hoods</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. HazCom training - documented</td>
<td>a. Exhaust hood and alarm (if approp.) working</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Lab hygiene Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Chem Hygiene Plan available</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. Dept Chem Hygiene Officer designated</td>
<td></td>
<td></td>
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<tr>
<td>c. Annual Bloodborne Pathogen (as appropriate)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>d. Electrical disconnect unobstructed</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>e. Rad, Laser, &amp; other training, if appropriate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>14. Mechanical</strong></td>
<td><strong>15. Chemical Inventory</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Belts, pulley drives, rotating parts guarded</td>
<td>a. Annual inventory up-to-date in ERM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Stop switch easily available</td>
<td>b. SDS readily available for all chemicals (10 min)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Equipment is secured</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>16. Chemical Inventory</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Exposure plan up-to-date</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Rad, Laser, &amp; other training, if appropriate</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Comments:
INCIDENT REPORTING – THIS PAGE COMPLETED BY GROUP WHERE INCIDENT OCCURRED

All incidents must be reported immediately to your supervisor, your Dept. Head, and SRS. Incidents including, but not limited to work related injuries, illnesses, property damage; spills or releases of hazardous substances, hazardous wastes, wastewater, and untreated storm water releases to the environment or sewer. **Priority must always be the safety and health and appropriate medical treatment to those impacted by the incident.**

Others Present During Incident/Contact Information:
Name (Print): ___________________________ Phone No.: ___________________________
Name (Print): ___________________________ Phone No.: ___________________________

Location (city, address/area, building, room, (be specific)): ____________________________________________________________

Severity of Incident (check all that apply): Fatality: □ Imminent Danger: □ Serious: □ Non-Serious: □
Other: □ ____________________________________________________________

Type of Incident (check all that apply): Injury: □ Illness: □ Property Damage: □ Other: □
Spill/Release: □ Untreated Stormwater: □ Hazardous Waste: □ Haz Substance: □ Wastewater: □
Date of Incident: ____________ Time of Incident: ____________ (am/pm) Organization: __________________________

Description of Incident (add page(s) as needed. What happened, how much, etc.): __________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________

Immediate Action Taken (attach page(s) as needed): ____________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________

Contact Information:
UNM Safety and Risk Service Office/24-7 Duty Officer Page.......................... Phone: 505-277-2753 / 505-951-0194
UNM Dept. Head (Name): ________________________________ Phone: ________________________________
Your Supervisor: ________________________________ Phone: ________________________________
UNM Occupational Medicine Clinic: ________________________________ Phone: 505-272-8043

______________________________ ________________________
Signature of Reporting Person/CSO Name (Print) Date
INCIDENT REPORTING – THIS PAGE COMPLETED BY SRS

SRS Investigative Results and Conclusions for reducing future risk:

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

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Program Change Recommendations:

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

For Spills: SRS cleared area for normal occupancy? Yes: □ No: □

Method used to clear area for normal occupancy (if relevant):

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

Date Cleared: ____________________ Time Cleared: ____________________

Cleared by (Print Name): ____________________________________________ Phone No.: ____________________

______________________________ Phone No.: ____________________

SRS Evaluator Date

Copy to: CSO:□ Dept. Head:□ SRS Director:□ EOHS:□
UNM
PROFESSIONAL VISITOR’S
HEALTH and SAFETY
ACKNOWLEDGEMENT FORM
Professional Visitor
Health and Safety Acknowledgement Form

Date: _______________________________

Location(s) visited (building, room number[s]): ________________________________________________________

Professional Visitor’s Name (Print): _________________________________________________________________

Name of UNM Sponsor (Print): ________________

I have been made aware of the location of and have been provided access to:

1. This laboratory’s Chemical Hygiene Plan;
2. Safety Data Sheets for hazardous chemicals I will be working with;
3. The standard operating procedures relevant to the work I will be performing;
4. Personal protective equipment needed to work safely in the laboratory, performing the work I am doing (in conformance with the Chemical Hygiene Plan and standard operating procedures); and
5. Emergency contact information in case of a laboratory emergency.

Signature of Professional Visitor: _________________________________________________________________