

CHEMICAL HYGIENE PLAN

The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1910.1450, "Occupational Exposure to Hazardous Chemicals in Laboratories" mandates the development of a Chemical Hygiene Plan which is capable of protecting employees from health hazards associated with hazardous chemicals in the laboratory and capable of keeping exposures below OSHA Permissible Exposure Limits (PELs).

The New Mexico Tech Chemical Hygiene Plan is developed and coordinated by New Mexico Tech's Office of Research Compliance. This Chemical Hygiene Plan is designed to supplement department and laboratory specific safety manuals and procedures that already address chemical safety in laboratories.

As per the OSHA Laboratory Standard, the following are elements of the Chemical Hygiene Plan:

1) Standard Operating Procedures

There are a multitude of research and teaching laboratories at New Mexico Tech and most of these use hazardous chemicals. Many departments have developed comprehensive safety and health manuals. These manuals address specific safety rules, regulations and standard operating procedures for laboratory workers in the department or college.

Research Compliance will assist laboratories in developing general and specific standard operating procedures for chemical use in laboratories. Due to the large variety of research and the number of laboratories involved, it will be the responsibility of each laboratory, department or college to ensure that their practices and procedures are robust enough to protect workers who interact with hazardous chemicals.

It will be up to the Principal Investigator or department head to ensure that written safety procedures are developed for work in their labs and that controls and protective equipment are capable of preventing overexposure. In many cases, standard operating procedures for laboratory safety have already been developed and implemented for years; as such, few changes will be necessary to comply with the OSHA Lab Standard. Existing standard operating procedures may need to be reevaluated to ensure that they address the health and safety requirements for the chemicals in use.

2) Control Measures

The exposure to hazardous chemicals in the laboratory shall be controlled through the use of engineering controls, personal protective equipment, good general laboratory practices, and standard operating procedures specific to an individual laboratory or department.

- Engineering controls: There are a variety of engineering controls that can be used in the laboratory to control exposures to hazardous chemicals. Some of the engineering

- controls that will be used in laboratories at New Mexico Tech may include dilution ventilation, local exhaust ventilation (fume hoods), and proper storage facilities.
- Personal protective equipment: Personal protective equipment (PPE) will be available to laboratory workers for use to reduce exposures to hazardous chemicals in the laboratory. Common PPE such as goggles, gloves, face shields, and aprons are recommended for use with hazardous chemicals. Other PPE such as respirators will be available and recommended for use if necessary. Research Compliance can assist in the proper selection, use, and care of PPE. PPE will be readily available and most equipment is provided at no cost to the employee.
 - General laboratory practices: Research Compliance provides laboratories with information about general laboratory work practices and rules that are recognized as effective control measures to minimize exposure to hazardous chemicals in the laboratory. The information is referenced from Prudent Practices in the Laboratory, Safety in Academic Chemistry Laboratories, and other references. These general procedures include guidelines on use of chemicals, accidents and spills, personal protection, use of fume hoods and other good laboratory practice information.
 - Specific laboratory practices: Individual departments or laboratories must develop additional written safety procedures whenever necessary to protect laboratory workers from specific chemical hazards that are unique to their particular area of research. Particular attention should be given to control measures for operations that involve the use of particularly hazardous substances such as select carcinogens, reproductive toxins, or acutely toxic chemicals. Research Compliance can assist researchers in developing safety procedures for specific hazards.
 - Other: Other control methods that will be used to determine and reduce employee exposures to hazardous chemicals in the laboratory may include exposure monitoring, testing eyewash and emergency shower facilities, developing emergency procedures, proper container selection, and substitution of less toxic chemicals whenever possible.

3) Fume Hoods and Other Protective Equipment

Fume hoods, emergency eyewash stations, and safety showers are inspected annually by Research Compliance and Facilities. Research Compliance will coordinate the inspection and repairs with the Facilities and Campus Services shops to ensure a timely and accurate repair process.

The proper functioning and maintenance of other protective equipment used in the lab is the responsibility of a variety of service groups. Facilities Management, Research Compliance, and other groups provide and service equipment such as fire extinguishers, eyewash/shower facilities, spill response equipment and mechanical ventilation. Periodic inspections and maintenance by these groups ensure proper functioning and adequate performance of the equipment.

4) Information and Training

Federal, state, and local laws along with New Mexico Tech policy require all laboratory workers to receive Laboratory Safety and Chemical Waste Disposal training and be informed

of the potential health and safety risks that may be present in their workplace. Documentation must be maintained to demonstrate that such training was provided and received. In order to assist laboratory personnel comply with this requirement, laboratory safety training must be obtained either through Research Compliance (classroom or web- based sessions) or documented as having been received from an alternative source. Laboratory personnel who attend Research Compliance training classes will have documentation entered and maintained for them in a training database. Laboratory personnel who have not attended the New Mexico Tech Laboratory Safety Training program must submit documentation of training received from alternative sources for verification by Research Compliance.

It is the responsibility of Principal Investigators and laboratory supervisors to ensure personnel working in laboratories under their supervision have been provided with proper training, have received information about the hazards in the laboratory they may encounter, and have been informed about ways the employees can protect themselves.

New Mexico Tech will provide employees with information and training to ensure that they are apprised of the hazards of chemicals present in their work area. Research Compliance regularly provides a variety of training programs for laboratory workers such as Laboratory Safety, EPA – Chemical Waste Disposal, Radiation Safety, Biological Safety, Spill Response, and other training programs, including providing laboratory workers with information on how to obtain additional safety information.

Individual laboratories maintain notebooks or electronic access to Safety Data Sheets (SDSs) for chemicals used in the lab. Employees are encouraged to consult the SDSs before working with new chemicals, or to call or write to Research Compliance for additional information. Research Compliance also maintains a webpage with links to a variety of internal and external websites for SDS and other chemical safety related information.

Research Compliance will provide information to laboratories, including the Chemical Hygiene Plan, the Laboratory Safety Manual, SDSs, OSHA Permissible Exposure Limits, and specific topical information from employee requests. Research Compliance personnel are available on a daily basis to answer questions and provide information to employees about chemical safety in laboratories.

Other sources of information and training may come from informal group or individual discussions with a supervisor, posted notices, fliers, web documents, and other written materials. Properly labeled containers, such as those using Right-To-Know labels, will give immediate warning information to workers about specific chemical hazards. Many departments have safety committees and safety manuals that provide information on laboratory safety. Employees are encouraged to contact Research Compliance for more information about safety in laboratories.

5) Prior Approval for High Hazard Work

Research Compliance can assist in identifying circumstances when there should be prior approval before implementation of a particular laboratory operation. Due to the large variety

of research being conducted in laboratories at the University, it is impossible to apply one prior approval process that can apply to all laboratories. Instead, high hazard types of activities should be identified by the Principal Investigator or person responsible for the work, and any type of approval process should be addressed in the laboratory's or department's standard operating procedures.

New Mexico Tech will assist in providing information to researchers about work with select carcinogens, reproductive toxins, and acute toxins. General guidelines and recommendations for the safe handling, use and control of high hazard materials can be provided through SDSs, and reference sources such as “Prudent Practices in the Laboratory”, “Safety in Academic Chemistry Laboratories”, and other resources.

6) Personnel Responsible for the Chemical Hygiene Plan

Research Compliance will provide technical information and program support to assist laboratories comply with the OSHA Laboratory Standard. Research Compliance will maintain the campus Chemical Hygiene Plan (CHP) and the institutional Chemical Hygiene Officer responsibilities will reside within Research Compliance. However, it will be the responsibility of the Principal Investigator or individual supervisor, department or college to be in compliance with the components of the CHP.

Each college, center, department, or laboratory may adopt or modify this CHP or write their own chemical hygiene plan as long as the requirements of the OSHA Laboratory Standard are met. It is assumed if a college, center, department, or laboratory has not developed their own chemical hygiene plan, then that unit or laboratory has adopted the New Mexico Tech University Chemical Hygiene Plan.

7) Provisions for Additional Employee Protection for Work with High Hazard Chemicals and/or Particularly Hazardous Substances

The Chemical Hygiene Plan includes provisions for additional employee protection for work with particularly hazardous substances. Research involving the use of particularly hazardous substances, such as select carcinogens, reproductive toxins, or acute toxins may require prior review to ensure adequate controls are in place which will protect the worker. Research Compliance will assist with the review and make recommendations for additional employee protection.

Additional employee protection may require the use of additional provisions such as:

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

The provision for additional controls may require the expertise and recommendations of various groups including Research Compliance, Facilities Engineering, technical committees, and outside consulting companies. These groups have all been previously involved with

review and implementation of controls for high hazard research. All additional provisions for work with particularly hazardous substances must be incorporated into the lab's standard operation procedures for those materials.

- It is the responsibility of Principal Investigators and laboratory supervisors to ensure that personnel working in laboratories under their control are familiar with the contents and location of the Chemical Hygiene Plan, including any lab specific standard operating procedures and any department or college level laboratory safety manuals, policies, and procedures. (Section 1.1 of the NMT Laboratory Safety Manual)
- It is the responsibility of the Principal Investigator and individual supervisors (and individuals working under their supervision) to be in compliance with the components of the University's Chemical Hygiene Plan, the University Employee Handbook, and any other department or University specific policies. (Section 1.4 of the NMT Laboratory Safety Manual)
- It is the responsibility of laboratory personnel to immediately report malfunctioning protective equipment, such as fume hoods, or mechanical problems to their Building Coordinator as soon as any malfunctions are discovered. (Section 1.5 of the NMT Laboratory Safety Manual)
- It is the responsibility of the Principal Investigator or laboratory supervisor to ensure biological safety cabinets within laboratories under their supervision are certified annually. (Section 2.2.1 of the NMT Laboratory Safety Manual)
- Principal Investigators, laboratory supervisors, departments and colleges are free to set policies that establish minimum PPE requirements for personnel working in and entering their laboratories. Be sure to check with your Department Chair to see if there are any department or college specific requirements for PPE. (Section 3.1 of the NMT Laboratory Safety Manual)
- It is the responsibility of the Principal Investigator or laboratory supervisor to ensure laboratory staff have received the appropriate training on the selection and use of proper PPE, that proper PPE is available and in good condition, and laboratory personnel use proper PPE when working in laboratories under their supervision. (Section 3.2 of the NMT Laboratory Safety Manual)
- Research Compliance strongly encourages Principal Investigators and laboratory supervisors to make use of eye protection a mandatory requirement for all laboratory personnel, including visitors, working in or entering laboratories under their control. (Section 3.3 of the NMT Laboratory Safety Manual)
- Research Compliance strongly recommends that Principal Investigators and laboratory supervisors discourage the wearing of shorts and skirts in laboratories using hazardous materials (chemical, biological, and radiological) by laboratory personnel, including visitors, working in or entering laboratories under their supervision. (Section 3.5 of the NMT Laboratory Safety Manual)
- Research Compliance strongly encourages Principal Investigators and laboratory supervisors to require the use of closed toed shoes for all laboratory personnel, including visitors, working in or entering laboratories and laboratory support areas under their supervision. (Section 3.8 of the NMT Laboratory Safety Manual)
- It is the responsibility of the Principal Investigator and laboratory supervisor to ensure

- that personnel working in laboratories under their supervision are informed and follow laboratory specific, departmental, and campus wide policies and procedures related to laboratory safety – such as the guidelines and requirements covered in this Laboratory Safety Manual. (Section 4.1 of the NMT Laboratory Safety Manual)
- It is the responsibility of the Principal Investigator and laboratory supervisor to ensure written SOPs incorporating health and safety considerations are developed for work involving the use of hazardous chemicals in laboratories under their supervision and that PPE and engineering controls are adequate enough to prevent overexposure. In addition, Principal Investigators and laboratory supervisors must ensure that personnel working in laboratories under their supervision have been trained on those SOPs. (Section 4.1 of the NMT Laboratory Safety Manual)
 - It is the responsibility of Principal Investigators and laboratory supervisors to ensure laboratories under their supervision are maintained in a clean and orderly manner and personnel working in the lab practice good housekeeping. (Section 4.4 of the NMT Laboratory Safety Manual)
 - It is the responsibility of Principal Investigators and laboratory supervisors to ensure procedures for working alone are developed and followed by personnel working in laboratories under their supervision. (Section 4.7 of the NMT Laboratory Safety Manual)
 - It is the responsibility of Principal Investigators and laboratory supervisors to ensure procedures for unattended operations are developed and followed by personnel working in laboratories under their supervision. (Section 4.9 of the NMT Laboratory Safety Manual)
 - It is the responsibility of the Department Chairperson, Principal Investigators, and laboratory supervisors to restrict access of visitors and children to areas under their supervision when potential health and physical hazards exist. (Section 4.10.1 and 4.10.3 of the NMT Laboratory Safety Manual)
 - It is the responsibility of the Principal Investigator and individual supervisors to ensure research areas under their supervision utilize Hazard Assessment Signage (HAS) on the laboratory door exterior to communicate the hazards within the lab, as well as to identify emergency contacts for the lab space. (Section 4.18 of the NMT Laboratory Safety Manual)
 - It is the responsibility of laboratory personnel to activate (flush) emergency showers and eyewash units on a regular basis. (Section 5.15.1 of the NMT Laboratory Safety Manual)
 - It is the responsibility of the Principal Investigator and laboratory supervisor to ensure all injuries are reported to University officials through the use of the New Mexico Tech University [Laboratory Incident/Near Miss Report](#) within 24 hours of the event. (Section 5.16 of the NMT Laboratory Safety Manual)
 - It is the responsibility of Principal Investigators and laboratory supervisors to ensure personnel working in laboratories under their supervision have been provided with the proper training, have received information about the hazards in the laboratory they may encounter, and have been informed about ways they can protect themselves. (Section 6 and 6.1 of the NMT Laboratory Safety Manual)
 - It is the responsibility of the Principal Investigator and laboratory supervisor to ensure that staff and students under their supervision are provided with adequate training and

information specific to the hazards found within their laboratories. (Section 7.3 of the NMT Laboratory Safety Manual)

- It is the responsibility of Principal Investigators and laboratory supervisors to ensure that staff and students working in laboratories under their supervision have obtained required health and safety training and have access to SDSs (and other sources of information) for all hazardous chemicals used in laboratories under their supervision. (Section 7.3.1 of the NMT Laboratory Safety Manual)
- While Research Compliance can provide assistance in identifying circumstances when there should be prior approval before implementation of a particular laboratory operation, the ultimate responsibility of establishing prior approval procedures lies with the Principal Investigator or laboratory supervisor. (Section 10.5 of the NMT Laboratory Safety Manual)
- It is the responsibility of the Principal Investigator and laboratory supervisor to ensure that personnel working in laboratories under their supervision are familiar with and follow hazardous chemical waste container requirements and have attended New Mexico Tech's Chemical Waste Disposal training. (Section 11.1 of the NMT Laboratory Safety Manual)
- It is the responsibility of the Principal Investigator or laboratory supervisor to ensure any employee working under their supervision who ships or prepares shipments of hazardous materials has received the proper training and certification. (Section 12 of the NMT Laboratory Safety Manual)
- It is the responsibility of the Principal Investigator or laboratory supervisor with class 3b or 4 LASERS in laboratories under their supervision to ensure that the class 3b or 4 LASERS have been registered with New Mexico Tech and employees using these LASERS have received the appropriate training. (Section 14 of the NMT Laboratory Safety Manual)
- It is the responsibility of the Principal Investigator and laboratory supervisor to ensure that staff and students in laboratories under their supervision are provided with adequate training and information specific to the physical hazards found within their laboratories. (Section 16 of the NMT Laboratory Safety Manual)

8) Medical Examinations and Consultations

Medical consultations and medical examinations will be made available to laboratory workers who work with hazardous chemicals as required. All work related medical examinations and consultations will be performed by or under the direct supervision of a licensed physician and will be provided at no cost to the employee through the following service providers:

- If you work in Socorro NM:
 - Bhasker Medical Clinic
200 Neel Ave
Socorro, NM 87801
575-835-2940
 - Presbyterian Medical Group

Hwy 60
Socorro, NM 87801
575-838-4690

- Socorro General Hospital
Hwy 60
Socorro, NM 87801
575-835-1140
- If you work in Albuquerque, NM:
 - Concentra
5700 Harper NE
Albuquerque, NM 87109
505-823-9166
 - Rehabilitation & Occupational Medicine Services
3811 Commons Ave NE
Albuquerque, NM 87109
505-823-8450
 - Presbyterian Occupational Medicine Clinic
5901 Harper NE
Albuquerque, NM 87109
505-823-8450
- If you work in Playas, NM:
 - Hidalgo Medical Services
530 DeMoss St
Lordsburg, NM 88045
575-542-8384
 - Gila Regional Medical Center
1313 E. 32nd St
Silver City, NM 88061
575-538-4000

The opportunity to receive medical attention, including any follow up examinations, will be provided to employees who work with hazardous chemicals under the following circumstances:

- Whenever an employee develops signs or symptoms associated with a hazardous chemical to which the employee may have been exposed in the laboratory.
- Where airborne exposure monitoring reveals an exposure level routinely above the action level (or in the absence of an action level, the Permissible Exposure Limit) for an OSHA regulated substance for which there are exposure monitoring and medical surveillance requirements. Action level means the airborne concentration of a specific chemical, identified by OSHA, and calculated as an 8-hour time weighted average (TWA).
- Whenever an event such as a spill, leak, explosion or other occurrence takes place and results in the likelihood of a hazardous exposure. Upon such an event, the affected

employee shall be provided an opportunity for a medical consultation. The consultation shall be for the purpose of determining the need for a medical examination.

All records of medical consultations, examinations, tests, or written opinions shall be maintained at NMT's Human Resource Office in accordance with 29 CFR 1910.1020 - Access to employee exposure and medical records. Human Resources is located at Leroy Place, Socorro NM 87801, inside Brown Hall Room 118. For more information, contact Research Compliance at 575-517-0646 or research.compliance@nmt.edu.

This Chemical Hygiene Plan is reviewed annually. Last Date Reviewed: 6/25/2024