

UCSF PERSONAL PROTECTIVE EQUIPMENT POLICY

I. INTRODUCTION

In 2009, at UCLA, a young researcher who was working with pyrophoric material had an accident that caused her death from severe burns. She was not wearing a lab coat at the time. The subsequent OSHA investigation found fault with many procedures in the laboratory, one of the primary being the Principal Investigator's failure to enforce an appropriate personal protective equipment (PPE) policy in his laboratory. UCLA was cited and fined by Cal-OSHA and the Principal Investigator was indicted by the Los Angeles County City Attorney. More details on this incident and others may be found in this video, [Experimenting With Danger](#). This tragic incident illustrates the importance of PPE in laboratory research as mandated by California Code of Regulations, Title 8 Section 3380 described below.

II. STATEMENT

The University of California is committed to providing a healthy and safe working environment for all members of the campus community. It is University policy to comply with all applicable health, safety and environmental protection laws, regulations and requirements, including Title 8 of the California Code of Regulations Section 3380 Personal Protective Devices which states the following:

1. The employer shall assure that the employee is instructed and uses protective equipment in accordance with the manufacturer's instructions.
2. The employer shall assure that all personal protective equipment complies with the applicable Title 8 standards for the equipment. The employer shall assure this equipment is maintained in a safe, sanitary condition.
3. Protectors shall be of such design, fit and durability as to provide adequate protection against the hazards for which they are designed.
4. Hazard assessment and equipment selection.
 - A. The employer shall assess the workplace to determine if hazards are present, or are likely to be present which necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present, the employer shall:
 - 1) Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment;
 - 2) Communicate selection decisions to each affected employee; and,
 - 3) Select PPE that properly fits each affected employee.

- B. The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.
- C. Defective and damaged equipment. Defective or damaged personal protective equipment shall not be used.
- D. Training. The employer shall provide training to each employee who is required by this section to use PPE. Each such employee shall be trained to know at least the following:
 - 1) When PPE is necessary;
 - 2) What PPE is necessary;
 - 3) How to properly don, doff, adjust, and wear PPE;
 - 4) The limitations of the PPE and,
 - 5) The proper care, maintenance, useful life and disposal of the PPE.
- E. Each affected employee shall demonstrate an understanding of the training and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.
- F. When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required, the employer shall retrain each such employee.
 - 1) Changes in the workplace render previous training obsolete; or
 - 2) Changes in the types of PPE to be used render previous training obsolete; or
 - 3) Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

Pursuant to this regulation, and in an effort to prevent workplace injuries and illnesses, UCSF has established this policy regarding Personal Protective Equipment (PPE) requirements for all campus research laboratory faculty, staff and students.

III. RESPONSIBILITIES

Preventing workplace injuries and illnesses is the responsibility of every member of the campus community. Specific responsibilities are assigned to higher level members of the research and teaching community in order to implement and ensure compliance with this Policy by their staff.

The **Chancellor** has overall responsibility for compliance with health and safety requirements at all facilities and programs under campus control.

The **Executive Vice Chancellor** is responsible for the implementation of this Policy in all applicable research and teaching laboratories within his or her jurisdiction.

Department Chairpersons are responsible for communicating, promoting and enforcing the Policy in their respective research and teaching areas.

Various safety committees are responsible for providing expert advice to the Chancellor on issues related to chemical, radioactive, biological and environmental safety, and review technical, environmental and safety-related aspects of laboratory research and the use of hazardous materials.

Principal Investigators are primarily responsible for complying with this Policy and for ensuring their laboratory is a safe work place. As part of this responsibility, Principal Investigators must:

1. Ensure their personnel including staff, students, and post-docs receive appropriate safety training specific to the tasks being performed in the laboratory including the appropriate use of PPE as outlined in this policy.
2. Ensure personnel working in their laboratory follow the policy.
3. Use appropriate corrective action and/or disciplinary action in accordance with the UCSF personnel policies for staff members and union contracts when individuals repeatedly violate the policy

Principal Investigators are responsible for ensuring a laboratory hazard assessment is conducted by him-/herself or an appropriately qualified designee and the appropriate selection of personal protective equipment is made.

Principal Investigators and laboratory management staff are responsible for submission of applicable Use Authorizations (biological, controlled substances and radioactive) and its timely renewal. Modification requests must be submitted prior to making changes in the lab.

All staff members working in laboratory areas are responsible for following laboratory safety requirements and for wearing PPE as outlined in this Policy and in laboratory-specific safety training.

The **UCSF Environment, Health & Safety (EH&S)** is responsible for promoting a safe working environment and assisting departments, principal investigators, and supervisory personnel in complying with this Policy.

EH&S is responsible for inspection of laboratories and enforcement of this Policy and lab's Use Authorization. In cases where laboratory activities pose an immediate danger to life or health, the EH&S Director has the responsibility and authority to order the temporary cessation of the activity until the hazardous condition is abated.

IV. SAFETY REQUIREMENTS

The following requirements pertain to all research and teaching laboratory environments utilizing hazardous chemical, hazardous biological or unsealed radiological materials (see section V, below). The requirements do not apply to research and teaching laboratories that involve solely mechanical, computer, laser, machine ionizing radiation, other non-ionizing radiation, or electrical operations; these hazards will be addressed under separate policies, as appropriate. EH&S, in cooperation with safety committees, has the final authority for determining whether any specific material is classified as hazardous.

1. Full length pants, or equivalent, and close-toed shoes must be worn at all times by all individuals that are occupying the laboratory area. The area of skin between the shoe and ankle should not be exposed.
2. Protective gloves must be worn while utilizing any hazardous chemical, biological or unsealed radiological material. These gloves must be appropriate for the material being used. The Material Safety Data Sheet ([MSDS](#)) for the material should be referenced when determining the effectiveness of the type of glove to be used. Additionally, the [EH&S website](#) offers guidance on glove selection based on material handling as well as links to other resources. This requirement does not apply when working with non-hazardous materials and an open flame or other heat source that might cause injury by melting plastic gloves.
3. Phenol/Chloroform usage: Special gloves are highly recommended when working with phenol/chloroform (ChemTek, SilverShield). Refer to EH&S "[Chloroform-Safe Gloves](#)" safety update and [UCSF Glove Selection Guides](#) for further information.
4. Laboratory coats, or equivalent, are required to be worn while working on, or adjacent to, all bench top and fume hood procedures utilizing hazardous chemicals, biological or unsealed radiological materials. These laboratory coats must be appropriately sized for the individual and be buttoned to their full length. Laboratory coat sleeves must be of a sufficient length to prevent skin exposure while wearing gloves.
5. Flame resistant laboratory coats and gloves (Kevlar, Nomex) must be worn when working with pyrophoric materials or flammable chemicals with very low flash points (e.g., diethyl ether -45 degrees C). Cotton or non-synthetic lab coats may be sufficient for routine handling (pouring, mixing) of flammable chemicals. Cotton and cotton/polyester blends are more resistant to fire but less resistant to acids.
6. Laboratory coats should not be worn outside of a laboratory unless the individual is traveling directly to an adjacent laboratory work area. Protective gloves must not be worn

in any public area outside of the laboratory (i.e., hallways, elevators, offices). Gloves should also be removed prior to handling any equipment that could likely result in cross-contamination (e.g., telephones, computer work stations, etc.).

7. Each department or research unit shall be responsible for providing professional laundry services as needed to maintain the hygiene of laboratory coats. They may not be cleaned by staff members at private residences or public laundry facilities. Any clothing that becomes contaminated with hazardous materials must be decontaminated before it leaves the laboratory.

8. Eye protection or appropriate personal protective equipment and engineering controls must be used while handling any hazardous chemical, biological or unsealed radiological materials. All eye protection equipment must be American National Standards Institute (ANSI) approved and appropriate for the work being done. The sole use of personal prescription lenses does not meet ANSI standards.

9. Some operations and procedures may warrant further PPE, as indicated by the [MSDS](#), the standard operating procedures for the material being used, facility policies, regulatory requirements, or applicable Use Authorizations.

V. DEFINITIONS OF HAZARDOUS MATERIALS

The following materials are defined as hazardous for the purposes of this Policy:

1. Any unsealed radioactive material.
2. Risk Group 2 or higher biological materials and toxins.
3. Chemicals listed as Regulated Carcinogens. (See the [Cal/OSHA 8 CCR Subchapter 7. General Industry Safety Orders Group 16. Control of Hazardous Substances Article 110. Regulated Carcinogens](#))
4. Chemicals listed as Known and Reasonably Anticipated Human Carcinogens (See [National Toxicology Program 12th Report on Carcinogens](#))
5. Chemicals listed as Reproductive Toxins. (See list of reproductive toxins and carcinogens identified under [California Proposition 65](#))
6. Toxic and (air and water) reactive highly hazardous chemicals (See [OSHA 29 CFR Standard Number 1926.64 App A](#))
7. [Department of Homeland Security Appendix A Chemicals of Interest](#)
8. Environmental Protection Agency Emergency Planning and Community Right-to-Know Act (EPCRA) Section 302(c) [40 CFR part 355 Appendix A and B](#)
9. California Code of Regulations, [Title 22 Section 66261.126 Appendix X](#)
10. Flammable and corrosive chemicals.

11. Known significant skin or eye irritants.

This list is to be used as a guideline and allows for some laboratories to be classified as non-hazardous materials laboratories. It does not supersede Cal-OSHA regulations or accepted safe work practices for specific materials. PPE and other safety measures, as appropriate, must be used to protect workers from any and all known hazards that are present in all work-related activities at UCSF. Refer to the California Code of Regulations for additional guidance in developing protective measures for laboratory use of hazardous materials.

VI. REFERENCES

1. [University of California Policy on Management of Health, Safety and the Environment \(10-28-2005\)](#);
2. [University of California, San Francisco Administrative Policies 550-11, 13 & 15 on Environment, Health and Safety management \(1-2-2001\), compliance \(3-6-2001\) and training \(1-2-2001\)](#);
3. [California Code of Regulations – Subchapter 7. General Industry Safety Orders – Group 16. Control of Hazardous Substances – Article 109. Hazardous Substances and Processes - §5194. Hazard Communication.](#)
4. [California Code of Regulations – Subchapter 7. General Industry Safety Orders – Group 16. Control of Hazardous Substances – Article 109. Hazardous Substances and Processes - §5191. Occupational Exposure to Hazardous Chemicals in Laboratories.](#)
5. [California Code of Regulations – Subchapter 7. General Industry Safety Orders - Group 2. Safe Practices and Personal Protection - Article 10. Personal Safety Devices and Safeguards - Sections 3380 to 3385.](#)