

LABORATORY PERSONAL PROTECTIVE EQUIPMENT (PPE) ASSESSMENT TOOL

Principal Investigator/Supervisor Name:	Department:	
Building(s):	Rooms:	
Lab Contact Name:	Phone:	
Signature of Responsible Person:	Date:	
Completed by:	Signature:	Date

This form must be completed by the PI, Lab Supervisor, or their designee to conduct a laboratory hazard assessment specific to activities in their laboratories. The laboratory hazard assessment identifies hazards to employees and specifies personal protective equipment (PPE) to protect employees during work activities.

This assessment consists of two sections.

Section 1: Laboratory PPE Assessment & Section 2: Conduct PPE Training

PIs/Lab supervisors are responsible for enforcing PPE requirements. EH&S is available to assist you with completing this form or with reviewing it after you have completed it. EH&S may be consulted by [email](#) or by calling extension 2-2818.

Section 1: Laboratory PPE Hazard Assessment

In this section, the PI or Lab Supervisor will:

- Conduct a hazard assessment of the laboratory using the PPE Assessment Tool. The Tool will assist to identify activities when PPE is needed to protect lab staff from exposure to hazards.
- Certify the hazard assessment for the laboratory by signing the above table.

The following checklist provides an overview of lab activities with associated potential hazards and generic recommendations for PPE. Describe the specific PPE your lab uses for each hazardous activity performed in your lab.

CHEMICAL HAZARDS			
Minimum PPE: Lab coat, long pants or equivalent, safety glasses, closed-toed shoes, disposable 4-mil nitrile gloves or appropriate chemical resistant gloves⁴. Operations may need to be performed inside a fume hood.			
(X) If applies	Activity (Modify to fit your needs)	Potential Hazard	Check PPE Selected
	Working with highly diluted (<1%) organic solvents, corrosives or flammable organic compounds.	Irritant.	<input type="checkbox"/> Safety glasses or goggles where splashing may occur.
	Working with any amount of undiluted corrosives (acids, bases).	Skin or eye damage	<input type="checkbox"/> Safety goggles w/ face shield where splashing may occur. <input type="checkbox"/> Chemical resistant gloves.
	Working with smaller volumes (<1L) of organic solvents or flammable organic compounds.	Potential respiratory, skin, or eye damage; potential poisoning through skin contact.	<input type="checkbox"/> Use safety glasses or goggles. Use face shield where splashing may occur. <input type="checkbox"/> Chemical resistant gloves.
	Working with larger volumes ($\geq 1L$) of organic solvents or flammable compounds, work which creates a splash hazard. ¹	Potential respiratory, skin, or eye damage; potential poisoning through skin contact. Fire.	<input type="checkbox"/> Safety goggles w/ face shield. <input type="checkbox"/> Use 15-mil thick non-disposable chemical-resistant gloves ⁴ (nitrile). <input type="checkbox"/> Flame-resistant lab coat, if flammable.
	Working with small quantity of toxic or hazardous chemicals (solid, liquid, or gas). ^{1,2}	Potential respiratory, skin, or eye damage; potential poisoning through skin contact.	<input type="checkbox"/> Safety glasses/ goggles <input type="checkbox"/> Light chemical-resistant gloves ⁴ <input type="checkbox"/> Refer to lab SOP/protocols.
	Working with an apparatus with contents under pressure or vacuum _____ (mm of Hg, psi, or torr).	Eye or skin damage.	<input type="checkbox"/> Goggles w/face shield. Use blast shield for high risk activities. <input type="checkbox"/> Chemical-resistant gloves ⁴ / apron if chemicals are involved. <input type="checkbox"/> Refer to SOP

CHEMICAL HAZARDS

Minimum PPE: Lab coat, long pants or equivalent, safety glasses, closed-toed shoes, disposable 4-mil nitrile gloves or appropriate chemical resistant gloves⁴. Operations may need to be performed inside a fume hood.

(X) If applies	Activity (Modify to fit your needs)	Potential Hazard	Check PPE Selected
	Working with air or water reactive chemicals.	May give off toxic gases, heat, and energy. Potential inhalation, skin and eye damage. Fire.	<input type="checkbox"/> Work in inert atmosphere or inside glove box, where possible. <input type="checkbox"/> Goggles w/ face shield. <input type="checkbox"/> Chemical-resistant gloves ⁴ . <input type="checkbox"/> Flame retardant lab coat. <input type="checkbox"/> Blast shield. <input type="checkbox"/> Refer to SOP.
	Working with pyrophoric materials.	Fire. Potential inhalation, skin and eye damage. Severe burns.	<input type="checkbox"/> Work in inert atmosphere or inside glove box. <input type="checkbox"/> Goggles w/ face shield. <input type="checkbox"/> Flame retardant lab coat and gloves with inner chemical-resistant gloves. <input type="checkbox"/> Wear non-synthetic clothing. <input type="checkbox"/> Refer to SOP.
	Working with potentially explosive chemicals.	Detonation, flying debris, skin and eye damage. Fire.	<input type="checkbox"/> Safety goggles w/ face shield and blast shield. <input type="checkbox"/> Chemical resistant gloves. <input type="checkbox"/> Flame retardant lab coat. <input type="checkbox"/> Refer to SOP.
	Working with high temperature equipment or objects.	Burns, fire.	<input type="checkbox"/> Safety glasses. <input type="checkbox"/> Thermal insulated gloves.
	Working with cryogenic material.	Burns, frostbite, eye damage.	<input type="checkbox"/> Safety glasses w/ face shield. <input type="checkbox"/> Thermal insulated gloves.
	Minor chemical spill cleanup.	Potential skin, eye, respiratory damage.	<input type="checkbox"/> Safety glasses or goggles. <input type="checkbox"/> Chemical-resistant gloves ⁴ . <input type="checkbox"/> Chemical-resistant apron. <input type="checkbox"/> Refer to SOP for additional PPE requirements. <input type="checkbox"/> Contact EH&S for consultation.

CHEMICAL HAZARDS

Minimum PPE: Lab coat, long pants or equivalent, safety glasses, closed-toed shoes, disposable 4-mil nitrile gloves or appropriate chemical resistant gloves⁴. Operations may need to be performed inside a fume hood.

(X) If applies	Activity (Modify to fit your needs)	Potential Hazard	Check PPE Selected
	Large chemical spill	Skin or eye damage, respiratory damage	<input type="checkbox"/> Call Safety & Security at ext. 777. <input type="checkbox"/> Report all injuries and fires. <input type="checkbox"/> Call EH&S for assistance.

RADIOLOGICAL HAZARDS

Minimum PPE: Lab coat, long pants or equivalent, safety glasses, closed-toed shoes, disposable 4-mil nitrile gloves or appropriate chemical resistant gloves⁴. Operations may need to be performed inside a fume hood.

(√) If applies	Activity	Potential Hazard	Applicable PPE ⁴
	Working with solid radioactive material or solid radioactive waste.	Cell damage, potential spread of radioactive contamination.	<input type="checkbox"/> Safety glasses <input type="checkbox"/> Impermeable ⁴ gloves <input type="checkbox"/> Lab coat <input type="checkbox"/> Enclosed shoes <input type="checkbox"/> Long pants. No shorts. <i>Note: This PPE not needed when using sealed radiation sources.</i>
	Working with liquid radioactive material (in corrosives, flammables, aqueous liquids – including liquid radioactive waste) or radioactive powders.	Cell damage or spread of contamination, plus hazards for the specific chemical.	<input type="checkbox"/> Safety glasses (or goggles for splash hazard) <input type="checkbox"/> Impermeable gloves <input type="checkbox"/> Lab coat <input type="checkbox"/> Enclosed shoes <input type="checkbox"/> Long pants. No shorts. <i>Note: Select glove type for the applicable chemical hazards.</i>
	Working with ultraviolet radiation.	Conjunctivitis, corneal damage, skin burns.	<input type="checkbox"/> UV face shield and/or goggles <input type="checkbox"/> Lab coat. <input type="checkbox"/> Nitrile gloves if hand exposure is possible.
	Working with infrared-emitting equipment (e.g., glass blowing).	Cataracts, burns to cornea.	<input type="checkbox"/> Appropriate polycarbonate infrared filter glasses <input type="checkbox"/> Lab coat.

PHYSICAL HAZARDS

Minimum PPE: Lab coat, long pants or equivalent, safety glasses, closed-toed shoes, disposable 4-mil nitrile gloves.

(√) If applies	Activity (Modify to fit your needs)	Potential Hazard	Additional Recommended PPE ⁴
	Working with cryogenic liquids.	Major skin, tissue, or eye damage.	<input type="checkbox"/> Goggles and face shield <input type="checkbox"/> Cryogenic or loose fitting heavy leather gloves <input type="checkbox"/> Cryogenic apron
	Removing freezer cryovials from liquid nitrogen	Vials may explode upon rapid warming. Cuts to face/neck and frostbite to hands.	<input type="checkbox"/> Safety glasses or goggles and face shield <input type="checkbox"/> Cryogenic or loose fitting heavy leather gloves
	Working with very cold equipment or dry ice.	Frostbite, hypothermia.	<input type="checkbox"/> Safety glasses <input type="checkbox"/> Cryogenic or heavy leather gloves (possibly warm clothing)
	Working with hot liquids, heating equipment, open flames (autoclave, Bunsen burner, water bath, oil bath).	Burns resulting in skin or eye damage.	<input type="checkbox"/> Safety glasses <input type="checkbox"/> Goggles for hot liquids <input type="checkbox"/> Autoclave gloves (impermeable insulated gloves for liquids, steam)
	Glassware washing.	Lacerations.	<input type="checkbox"/> Safety glasses <input type="checkbox"/> Cut resistant gloves
	Working with loud equipment, noises, sounds, alarms, etc.	Potential ear damage and hearing loss.	<input type="checkbox"/> Earplugs or ear muffs as necessary.
	Working with a centrifuge.	Imbalanced rotor can lead to broken vials, cuts, potential exposure to aerosols.	<input type="checkbox"/> Centrifuge rotor should be opened inside fume hood or biosafety cabinet if potential for broken vials exists. <input type="checkbox"/> Goggles <input type="checkbox"/> Appropriate gloves.
	Working with a sonicator.	Ear damage, exposure to aerosols.	<input type="checkbox"/> Place inside fume hood or biosafety cabinet to capture aerosols. <input type="checkbox"/> Goggles <input type="checkbox"/> Impermeable gloves ⁴ .
	Working with sharps.	Cuts, exposure to aerosols.	<input type="checkbox"/> Use tongs for broken glass and designated sharps container for contaminated wastes <input type="checkbox"/> Cut resistant gloves (Kevlar) with nitrile underneath.
	Working with compressed gases inside environmental chambers	Asphyxiation or toxic gas exposure	NOT ALLOWED. Contact EH&S for guidance. Review SOP and install oxygen sensors inside chamber.

BIOLOGICAL HAZARDS⁶

Minimum PPE: Lab coat, closed-toed shoes, disposable 4-mil nitrile gloves.

(√) If applies	Activity (Modify to fit your needs)	Potential Hazard	Additional Recommended PPE ⁴
	Working with human blood, body fluids, cell lines (primary or established), tissues, or blood borne pathogens (BBP). ⁶	Exposure to infectious material.	<input type="checkbox"/> Perform inside a Biosafety cabinet (BSC) <input type="checkbox"/> Latex or nitrile gloves <input type="checkbox"/> Lab coat or gown
	Working with preserved animal and/or human specimens.	Exposure to infectious material or preservatives.	<input type="checkbox"/> Perform in a BSC <input type="checkbox"/> Safety glasses required if outside of a BSC <input type="checkbox"/> Impermeable glove ⁴ for preserved specimens according to preservative used <input type="checkbox"/> Lab coat <input type="checkbox"/> Disposable gown
	Working with radioactive human blood, body fluids, or blood borne pathogens (BBP).	Cell damage, potential spread of radioactive contaminants, or potential BBP exposure to infectious material.	<input type="checkbox"/> Perform in a BSC <input type="checkbox"/> Latex or nitrile gloves <input type="checkbox"/> Lab coat <input type="checkbox"/> Gown
	Working with agents or recombinant DNA classified as Risk Group 1 and requiring Biosafety Level 1 containment	Biological agents that typically pose a minimal potential for infection via injection, skin exposure, ingestion or inhalation.	<input type="checkbox"/> Safety glasses or goggles for protection from splash or other eye hazard <input type="checkbox"/> Latex or nitrile gloves <input type="checkbox"/> Lab coat <input type="checkbox"/> Disposable gown
	Manipulation of recombinant DNA, cell lines, viruses, bacteria, or other organisms classified as Risk Group 2 and requiring Biosafety Level 2 (BSL-2). ⁶	Biological agents that pose a moderate potential for infection via injection, skin exposure, ingestion or inhalation. .	<input type="checkbox"/> Perform in a BSC <input type="checkbox"/> Latex or nitrile gloves <input type="checkbox"/> Lab coat <input type="checkbox"/> Surgical gown
	Working with live animals (Animal Biosafety Level 1, ABL-1).	Animal bites, allergies.	<input type="checkbox"/> Safety glasses or goggles for protection from splash or other eye hazard <input type="checkbox"/> Nitrile or vinyl gloves for broken skin <input type="checkbox"/> Lab coat or gown <input type="checkbox"/> Consider need for wire mesh or Kevlar glove
	Working with live animals (Animal Biosafety Level 2, ABL-2). ⁶	Animal bites, exposure to infectious material, allergies.	<input type="checkbox"/> Safety glasses or goggles for protection from splash or other eye hazard <input type="checkbox"/> Nitrile or vinyl gloves <input type="checkbox"/> Disposable gown <input type="checkbox"/> Shoe covers <input type="checkbox"/> Consider need for wire mesh or Kevlar glove

Additional Guidance

1. When materials have a potential for becoming airborne, use a chemical fume hood or other engineering control whenever possible. *Activities, with a potential to generate airborne contaminants, not conducted inside a chemical fume hood or with another engineering control (such as a local exhaust at the workbench) should be evaluated to determine if the activity presents a respiratory hazard. In this case a respirator may be required and a respiratory protection program must be in place per EH&S.*
2. In addition to engineering controls and PPE, consider personal clothing that provides adequate skin coverage.
3. Manipulations of dust-producing solids should be evaluated for the need to use respiratory protection.
4. Chemical-resistant gloves are to be selected based on the specific chemical(s) used and manufacturer's glove permeation and compatibility charts.
5. All PPE must be inspected prior to use, during, after use. Re-usable equipment must be decontaminated or disposed if not feasible.
6. Use a biosafety cabinet to minimize exposure. Activities that cannot be conducted inside biosafety cabinet should be separately evaluated by the EH&S and the Lab Director.

Section 2: Conduct PPE Training

PPE training consists of **lab specific training** conducted by the lab supervisor. Documentation is required to indicate training has been conducted.

Step 1

The PI or lab supervisor assures that the employees have completed all applicable safety training courses.

Step 2

- a. The PI, lab supervisor, or their designee reviews the **completed Lab PPE Assessment Tool** (this document) with the employee. It describes the tasks in the lab when employees need PPE to protect themselves from exposure to hazards. In this step, the hazard assessment is used as a training tool.

- b. While discussing lab activities and the associated hazards with lab staff, the supervisor will address how their lab obtains PPE, what types of PPE are used in the lab and for which tasks, where and how the PPE is stored and maintained, how to properly use the PPE, and discuss any limitations of the PPE. The supervisor should also discuss general PPE safety practices, including not wearing PPE outside of lab hazard areas (e.g. hallways and eating areas).
- c. Each research staff will sign below acknowledging that they have reviewed the PPE assessment tool.

Step 3

Conduct and document refresher training whenever the hazard assessment is updated.

PPE Hazard Assessment Tool Training Acknowledgement:

I have read, asked questions, and understand the PPE requirements for the activity/materials described herein.

PI SIGNATURE/LAB SUPERVISOR		DATE
TRAINEES NAME		DATE