

PPE Hazard Assessment Guide

Introduction:

The purpose of this form is to help managers, supervisors, and employees assess work activities and hazards for the purpose of selecting the appropriate personal protective equipment (PPE). PPE must be provided and used when other forms of controlling a hazard are not feasible or do not provide sufficient protection against occupational injury or illness.

To satisfy the requirements of the Occupational Safety and Health Administration (OSHA) Standard, 29 CFR 1910.132 Subpart I- Personal Protective Equipment, this assessment must be completed to ensure the appropriate selection and use of PPE to protect against physical, chemical, and biological hazards. Be sure to keep current copies of all documented hazard assessments.

This form is intended for use by all UMBC departments, areas, and work groups, including both Research and Non-Research and Administrative/Support departments.

Overview of Hazard Categories:

- *Physical hazards* are substances, equipment, and activities that can cause personal bodily harm or lead to property or equipment damage. These include, but are not limited to, hazards relating to impact or force (falling objects, explosions); mechanical (pressing, drilling, tearing, ripping, etc.), compressed air, compressed gas cylinders, extreme heat or cold, noise; vibration; electricity; light; welding; cutting; grinding; and brazing.
 - Minimum PPE Required: Safety Glasses, Long Sleeves with Tight Fitting Cuffs (no loose clothing), Long pants or equivalent leg coverings. Gloves are required whenever there is a hazard of injury to the hands (such as pinching or crushing). Safety/steel toe footwear is required when there is a risk of objects being dropped on the feet. Hard hats are required whenever there is a risk of objects striking or falling onto the head.
- *Hazardous Chemicals (chemical hazards)* are chemicals for which there is statistically significant evidence based on at least one Chemical study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems, and agents which damage the lungs, skin, eyes, or mucous membranes.
 - Minimum PPE Required: Safety glasses, (safety goggles if there is a potential for splashing), chemical resistant gloves that are appropriate for the chemical (refer to the chemical's Safety Data Sheet), Long pants, long sleeve shirt, or coverall (no loose clothing).

- *Biohazardous Material* (biological hazards) is defined as any biological material capable of causing harm to humans, animals or plants, including both biohazardous agents, non-replicating materials such as toxins, and may also be used to refer to material that harbors a biohazardous agent. Examples of biohazardous material include but are not limited to: bacteria, rickettsia, fungi, viruses, prions, parasites, recombinant nucleic acid, human or animal cells and blood products, toxins, animals inoculated with a potentially infected material, animal bedding and waste material, and other biohazardous agents as defined by state and federal regulations.
 - Minimum PPE Required for Non-Research Personnel
 - Blood or other potentially infectious materials - Gloves (single use/nitrile). Goggles or a face shield are required if possibility of splashing/spraying on eyes or face. If possibility of contamination of clothing, protective garments such as a gown or apron are required.
 - Minimum PPE Required for Research Personnel
 - PPE must be selected based on the lab's biosafety level (BSL). Refer to your lab's research protocol or contact your Principal Investigator or ESH with questions about your Lab's PPE requirements.

Guide to Conducting the Assessment:

The Hazard Assessment can be conducted for a particular area, a job category/title/classification, or an employee by using the below form to select and fill in the appropriate box. The person conducting the evaluation must include their name, the area being assessed, and the date. Completed evaluations must be reviewed with and accessible by all impacted employees.

All employees must be trained and understand the proper usage of the PPE that is selected as a result of the assessment. At the end of this form is a training acknowledgement form. All impacted employees must read and sign the acknowledgement stating that they understand the requirements and have been sufficiently trained on using the PPE assigned.

When conducting the assessment, involve the employees that will be impacted. Discuss the task(s) to be completed and observe the environment where the work will be performed, as well as the equipment, tools, or materials being used. Complete the hazard assessment using the checklists on pages 4 and 5.

Additional PPE Selection Guidance

PPE should be selected based primarily on the hazards identified during the assessment. Departments should also take the comfort and proper fit of PPE into consideration when selecting appropriate items for each employee. PPE that fits well and is comfortable to wear will encourage employee use of PPE. Most protective devices are available in multiple sizes and care should be taken to select the proper size for each employee.

- 1. PPE Inspection, Maintenance, and Decontamination.** All PPE should be inspected prior to, during and after use. Clean, care for, and store PPE in accordance with manufacturer's instructions. Discard PPE that is not working properly or is heavily soiled, or if it is not designed to be reused (such as disposable gloves).

- 2. Footwear.** Special footwear can provide protection against physical and chemical hazards. They are designed to cover the entire foot from the toes to the ankle. Wear shoes that will protect against the hazards you are likely to encounter. When there are physical or chemical hazards, avoid sandals, flip flops, flats, athletic shoes and canvas/breathable fabric tops. Always follow any specific footwear requirements set by your department's uniform, dress code, or footwear policies.

- 3. Hearing Protection.** Ear plugs or muffs provide protection against hazardous noise levels. When there is a concern or potential for hazardous noise levels, contact ESH for a noise exposure assessment.

- 4. Airborne/Inhalation Hazard, Engineering Controls, and Respiratory Protection.** When materials have a potential for becoming airborne, use a chemical fume hood, local exhaust (snorkel) or other engineering control whenever possible. Activities that generate airborne contaminants or odors that are not conducted using local exhaust or some other engineering control (such as at the workbench) should be evaluated to determine if the activity presents an inhalation hazard.
 - If respiratory protection is identified as a necessary control during the hazard assessment, users must be enrolled in the UMBC Respiratory Protection Program. ESH will assist with assessing the need for respiratory protection and assist with facilitating employee enrollment in the Program. Contact ESH for more information at esh@umbc.edu or 5-2918.

- 6. Chemical-Resistant Gloves.** Chemical-resistant gloves must be selected based on the specific chemical(s) used and the glove manufacturer's permeation and compatibility charts.

PPE Hazard Assessment Form – For the assessor: complete the hazard assessment using the form below. Form continues on page 5.

Date of Assessment:		Department:	
Assessor:		Job Title or Work Group:	
Describe Task or Activity:			
EYE/FACE HAZARDS			
<i>Check the box for each hazard:</i>		<i>Description of hazard(s):</i>	<i>Controls in place:</i>
Chemical/Biological	Yes <input type="checkbox"/>		<input type="checkbox"/> Fume hood/bio cabinet
Extreme Heat/Cold	Yes <input type="checkbox"/>		<input type="checkbox"/> Enclosure/guarding
Dust or Flying Debris	Yes <input type="checkbox"/>		<input type="checkbox"/> Shielding
Impact or Explosion	Yes <input type="checkbox"/>		<input type="checkbox"/> Safe work practices
UV Light (ex. welding)	Yes <input type="checkbox"/>		<input type="checkbox"/> Dust collection system
Radiation (ex. lasers)	Yes <input type="checkbox"/>		<input type="checkbox"/> Distance
			<input type="checkbox"/> Other:
			<input type="checkbox"/> Safety glasses
			<input type="checkbox"/> Goggles- chem or cutting
			<input type="checkbox"/> Face shield (type)
			<input type="checkbox"/> Welding helmet
			<input type="checkbox"/> Laser eyewear
			<input type="checkbox"/> Arc-flash hood
			<input type="checkbox"/> Other:
HEAD HAZARDS			
<i>Check the box for each hazard:</i>		<i>Description of hazard(s):</i>	<i>Controls in place:</i>
Impact/low clearance	Yes <input type="checkbox"/>		<input type="checkbox"/> Canopy
Electrical Shock	Yes <input type="checkbox"/>		<input type="checkbox"/> De-energization
Entanglement	Yes <input type="checkbox"/>		<input type="checkbox"/> Hair secured
			<input type="checkbox"/> Hard hat – class
			<input type="checkbox"/> Safety helmets
			<input type="checkbox"/> Other:
FOOT/LEG HAZARDS			
<i>Check the box for each hazard:</i>		<i>Description of hazard(s):</i>	<i>Controls in place:</i>
Chemical/Biological	Yes <input type="checkbox"/>		<input type="checkbox"/> Substitution
Extreme Heat/Cold	Yes <input type="checkbox"/>		<input type="checkbox"/> Mechanical device used
Impact/Compression	Yes <input type="checkbox"/>		<input type="checkbox"/> Housekeeping
Puncture	Yes <input type="checkbox"/>		<input type="checkbox"/> Isolation/grounding
Explosive/Flammable	Yes <input type="checkbox"/>		<input type="checkbox"/> Safe work practices
Slippery/Wet Surfaces	Yes <input type="checkbox"/>		<input type="checkbox"/> Appropriate clothing
Electrical	Yes <input type="checkbox"/>		<input type="checkbox"/> Other:
			<input type="checkbox"/> Work boots
			<input type="checkbox"/> Steel-toed shoes/boots
			<input type="checkbox"/> Slip-resistant shoes
			<input type="checkbox"/> Puncture-resistant shoes
			<input type="checkbox"/> Non-conductive
			<input type="checkbox"/> Metatarsal protection
			<input type="checkbox"/> Shin guards
			<input type="checkbox"/> Other:
HAND/ARM HAZARDS			
<i>Check the box for each hazard:</i>		<i>Description of hazard(s):</i>	<i>Controls in place:</i>
Chemical/Biological	Yes <input type="checkbox"/>		<input type="checkbox"/> Substitution (product)
Extreme Heat/Cold	Yes <input type="checkbox"/>		<input type="checkbox"/> De-energization
Cuts or Abrasion	Yes <input type="checkbox"/>		<input type="checkbox"/> Elimination/isolation
Puncture or Pinch	Yes <input type="checkbox"/>		<input type="checkbox"/> Mechanical devices
Electrical Shock	Yes <input type="checkbox"/>		<input type="checkbox"/> Guarding/distance
Radiation	Yes <input type="checkbox"/>		<input type="checkbox"/> Reduce time exposed
Vibration/Grip	Yes <input type="checkbox"/>		<input type="checkbox"/> Other:
Bloodborne Pathogens	Yes <input type="checkbox"/>		<input type="checkbox"/> Other:
			<input type="checkbox"/> Chemical-resistant gloves
			<input type="checkbox"/> Thermal-protective gloves
			<input type="checkbox"/> Cut-resistant gloves
			<input type="checkbox"/> Leather gloves
			<input type="checkbox"/> Voltage-rated–Class:
			<input type="checkbox"/> Latex/nylon/nitrile gloves
			<input type="checkbox"/> Anti-vibration gloves
			<input type="checkbox"/> Other:

BODY/TORSO HAZARDS				
<i>Check the box for each hazard:</i>		<i>Description of hazard(s):</i>	<i>Controls in place:</i>	<i>Identify required PPE.</i>
Chemical/Biological	Yes <input type="checkbox"/>		<input type="checkbox"/> Reduce time exposed	<input type="checkbox"/> Lab coat or coveralls
Extreme Heat/Cold	Yes <input type="checkbox"/>		<input type="checkbox"/> Guards/barriers	<input type="checkbox"/> Apron (type):
Radiation	Yes <input type="checkbox"/>		<input type="checkbox"/> Substitution (product)	<input type="checkbox"/> Flame-resistant clothing
Particulates/liquids	Yes <input type="checkbox"/>		<input type="checkbox"/> De-energization	<input type="checkbox"/> Aluminized clothing
Cut/Abrasion/Puncture	Yes <input type="checkbox"/>		<input type="checkbox"/> Mechanical devices	<input type="checkbox"/> Vest (high visibility)
Electrical Arc or Blast	Yes <input type="checkbox"/>		<input type="checkbox"/> Distance	<input type="checkbox"/> Tyvek suit
Low visibility	Yes <input type="checkbox"/>		<input type="checkbox"/> Other:	<input type="checkbox"/> Arc-flash suit- calorie rating
				<input type="checkbox"/> Other:

NOISE HAZARDS				
<i>Check the box for each hazard:</i>		<i>Description of hazard(s):</i>	<i>Controls in place:</i>	<i>Identify required PPE.</i>

Excessive Noise	Yes <input type="checkbox"/>		<input type="checkbox"/> Noise reduction (design)	<input type="checkbox"/> Ear plugs
Ultrasonics	Yes <input type="checkbox"/>		<input type="checkbox"/> Reduced exposure	<input type="checkbox"/> Ear muffs Ear plug/ear muff (combination)

RESPIRATORY HAZARDS				
<i>Check the box for each hazard:</i>		<i>Description of hazard(s):</i>	<i>Controls in place:</i>	<i>Identify required PPE.</i>
Chemicals/Pesticides	Yes <input type="checkbox"/>		<input type="checkbox"/> Fume hood	<input type="checkbox"/> Air-line or SCBA
Particulates	Yes <input type="checkbox"/>		<input type="checkbox"/> Biological safety cabinet	<input type="checkbox"/> PAPR
Nanoscale Particulates	Yes <input type="checkbox"/>		<input type="checkbox"/> Local exhaust ventilation	<input type="checkbox"/> Full-face
Confined Space Work	Yes <input type="checkbox"/>		<input type="checkbox"/> Increase air flow/outside	<input type="checkbox"/> Half-face
Welding/Cutting Fumes	Yes <input type="checkbox"/>		<input type="checkbox"/> Filtration	<input type="checkbox"/> N-95/100
Biologicals	Yes <input type="checkbox"/>		<input type="checkbox"/> Other	<input type="checkbox"/> Dust Mask

PPE Training Acknowledgement

PPE training must be conducted by the appropriate manager, supervisor, principal investigator, or designee.

Training will identify and discuss potentially hazardous tasks performed in the shop, and selection and use of shop specific PPE to protect the shop worker or researcher. ***The training content, instructor and attendees must be documented.***

Training Steps:

1. The Supervisor or designated person will review the completed PPE Hazard Assessment with the employee(s) and discuss the PPE in relation to the job, task, or activity being assessed.
2. Discuss the following items:
 1. How to obtain PPE
 2. What types of PPE are used
 3. Where and how the PPE is stored, cared for, and maintained
 4. How to put on, appropriately wear, and take off PPE, including adjusting for proper fit
 5. How to properly use the PPE
 6. General PPE safety practices, including PPE inspection and reporting improperly functioning PPE
3. Ensure each employee sign the training acknowledgement on page 7.
4. Provide refresher training anytime the hazard assessment is updated or if new PPE is introduced.

PPE Training Acknowledgement Form

Trainer Name:	Department/Area/Office:
Location:	Date:
Job/Task/Activity:	

Employees: By signing this form, I agree that I have reviewed and understand the PPE requirements for the job/task/activity described above.

Employee Name	Signature	Date