

PPE Hazard Assessment Guide and Assessment Form

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.
 - Examples of appropriate PPE include: 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.
 - Examples of appropriate PPE include: 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). If there is a possibility of exposure due to splashing or aerosolizing, protective clothing must be worn such as protective gowns or aprons.
 - 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 – Assessor, complete the assessment using the below form.

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 ☐		☐ Fume hood/bio cabinet
Extreme Heat/Cold	Yes ☐		☐ Enclosure/guarding
Dust or Flying Debris	Yes ☐		☐ Shielding
Impact or Explosion	Yes ☐		☐ Safe work practices
UV Light (ex. welding)	Yes ☐		☐ Dust collection system
Radiation (ex. lasers)	Yes ☐		☐ Distance
			☐ Other:
Identify required PPE:			
☐ Safety glasses ☐ Goggles- chem or cutting ☐ Face shield (type) ☐ Welding helmet ☐ Laser eyewear ☐ Arc-flash hood ☐ 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 ☐		☐ Canopy
Electrical Shock	Yes ☐		☐ De-energization
Entanglement	Yes ☐		☐ Hair secured
Identify required PPE:			
☐ Hard hat – class ☐ Safety helmets ☐ 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 ☐		☐ Substitution
Extreme Heat/Cold	Yes ☐		☐ Mechanical device used
Impact/Compression	Yes ☐		☐ Housekeeping
Puncture	Yes ☐		☐ Isolation/grounding
Explosive/Flammable	Yes ☐		☐ Safe work practices
Slippery/Wet Surfaces	Yes ☐		☐ Appropriate clothing
Electrical	Yes ☐		☐ Other:
Identify required PPE:			
☐ Work boots ☐ Steel-toed shoes/boots ☐ Slip-resistant shoes ☐ Puncture-resistant shoes ☐ Non-conductive ☐ Metatarsal protection ☐ Shin guards ☐ 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 ☐		☐ Substitution (product)
Extreme Heat/Cold	Yes ☐		☐ De-energization
Cuts or Abrasion	Yes ☐		☐ Elimination/isolation
Puncture or Pinch	Yes ☐		☐ Mechanical devices
Electrical Shock	Yes ☐		☐ Guarding/distance
Radiation	Yes ☐		☐ Reduce time exposed
Vibration/Grip	Yes ☐		☐ Other:
Bloodborne Pathogens	Yes ☐		☐ Other:
Identify required PPE:			
☐ Chemical-resistant gloves ☐ Thermal-protective gloves ☐ Cut-resistant gloves ☐ Leather gloves ☐ Voltage-rated–Class: ☐ Latex/nylon/nitrile gloves ☐ Anti-vibration gloves ☐ Other:			

BODY/TORSO HAZARDS

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

NOISE HAZARDS

Check the box for each hazard:		Description of hazard(s):	Controls in place:	Identify required PPE.
Excessive Noise	Yes ☐		☐ Noise reduction (design)	☐ Ear plugs
Ultrasonics	Yes ☐		☐ Reduced exposure	☐ Ear muffs
				Ear plug/ear muff (combination)

RESPIRATORY HAZARDS

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