PERSONAL
PROTECTIVE
EQUIPMENT
PROGRAM

1999

TABLE OF CONTENTS

I. POLICY STATEMENT

A. Purpose

The Personal Protective Equipment (PPE) Program has been developed to provide the University community with the necessary information to identify work situations that require the use of PPE, the proper selection and use of PPE, and documentation of this information. This information is important to help ensure the safety and health of all employees at the University of Maryland.

B. Scope

University employees who currently utilize PPE or have the potential to encounter hazards to the eyes, face, head, feet, hands, or who conduct work involving electrical or fall hazards, as identified during the Hazard Assessment of the workplace, will be required to participate in this PPE Program. PPE will be selected and used to protect employees from the hazards and potential hazards that are likely to be encountered. Respiratory and hearing protection are covered under separate programs.

PPE includes all clothing and work accessories designed to protect employees from workplace hazards. PPE should not be used as a substitute for engineering, work practices, and/or administrative controls to protect employees from workplace hazards. PPE should be used in conjunction with permanent protective measures, such as engineered guards, substitutions of less hazardous chemicals, and prudent work practices.

C. Applicable Regulation

OSHA Regulation 29 CFR Part 1910 Subpart I - Personal Protective Equipment.

D. Department of Environmental Safety (DES)

DES shall prepare a PPE manual and annually review and revise the manual to meet current OSHA regulations. DES will also annually distribute a memo to all Deans, Directors, Department Heads, and Compliance Officers as a reminder of all environmental health and safety policies and programs.

GLOSSARY OF TERMS

ANSI: American National Standard Institute, a nonprofit, voluntary membership organization that coordinates the U.S. Voluntary Consensus Standard System. Their standards have been adopted throughout government and industry for various types of personal protective equipment.

Competent Person: A person who, because of training and experience, is capable of identifying hazardous or dangerous conditions.

Hazard Assessment: Investigating the work environment for potential dangers which could result in injury or illness.

Personal Protective Equipment (PPE): Devices worn by the employees to protect against hazards in the environment. Examples include safety glasses, face shields, respirators, gloves, hard hats, steel-toe shoes, and hearing protection.

Permissible Exposure Limit (PEL): The PEL for a substance is the 8-hour time-weighted average or ceiling concentration above which workers may not be exposed.

Qualified Person: A person designated by the employer who is knowledgeable about and familiar with all relevant manufactures' specifications and recommendations; is capable of identifying existing or potential hazards in specific surroundings or working conditions which may be hazardous or dangerous to employees; and has been trained for the specific task assigned. When work is to be supervised by a qualified person, the qualified person shall have the necessary authority to carry out the assigned work responsibilities.

III. RESPONSIBILITY

A. Deans, Directors, and Department Heads

Designate and empower individuals who must participate in and who will be responsible for the preparation and implementation of the PPE Program.

Provide administrative and financial support for this program within individual departments.

Ensure the PPE Program is implemented and maintained within the department.

B. Supervisors

Implement all aspects of this program, including documentation of the hazard assessment and training. The supervisor has been designated this responsibility, as he/she is involved with employees on a daily basis.

Conduct hazard assessments and ensure that employees are informed, trained, and provided with appropriate PPE to be protected from potential hazards associated with job tasks.

Be familiar with the applicable government regulations, safety standards, and prudent safety practices to protect themselves and their fellow employees.

C. Employees

Comply with the guideline and any further safety recommendations provided by supervisors and/or DES regarding PPE.

Conduct assigned tasks in a safe manner and wear all assigned PPE.

Report any unsafe or unhealthy work conditions and job related injuries or illnesses to the supervisor immediately.

D. Department of Environmental Safety (DES)

Provide technical information and assist departments in implementing an effective PPE program in their workplace.

Provide training for PPE instruction, as needed.

Review and revise the PPE program, as needed for compliance with applicable regulations.

IV. HAZARD ASSESSMENT

A hazard assessment is a formalization of what is done whenever personal protective equipment is selected based on the hazards of the job. When conducting a hazard assessment, a task is investigated and the hazards and the potential hazards associated with the task are determined. This allows selection of personal protective equipment that will protect the employee from the identified hazards.

A hazard assessment may be conducted of a single employee, of a single task, or a group of employees if all the employees perform an identical task. For example, if all employees in a group are exposed to ultraviolet radiation during one type of welding, the hazard assessment could include all of the welders conducting that task. Likewise, painters using similar types of materials or laboratory employees using similar types of chemicals could be grouped under the same assessment.

During the hazard assessment of each task, inspect the layout of the workplace and look for the following hazardous sources:

A. High or low temperature that could result in burns, eye injury, ignition of equipment, heat/cold stress, frostbite, lack of coordination, etc.
B. Chemical exposures, including airborne or skin contact, that would have the potential for splash on the skin or eyes, or the potential to breathe vapors or mists.
C. Harmful dust or particulates.
D. Light radiation, e.g., welding, arc lamps, heat treating, lasers, growth lights, etc.
E. Sources of falling objects, potential for dropping objects, or rolling objects that could cause crush or pinch the feet.
F. Sharp objects that may pierce the feet or cut the hands.
G. Observe the layout of the workplace and the location of co-workers for the potential for collision with other personnel or objects.
H. Electrical hazards.
I. Any other identified potential hazard.

Where these hazards could cause injury to employees, personal protective equipment must be selected to substantially eliminate the injury potential. A Certification of Hazard Assessment and a Hazard Assessment Checklist must be completed by the supervisor to identify potential workplace hazards. (These forms are available on the DES web site at: http://www.des.umd.edu).

CERTIFY A HAZARD ASSESSMENT

The Hazard Assessment forms must be signed by the supervisor to certify that this process has been performed as required by the regulation. The forms must be maintained with the departmental records.

V. TRAINING

Prior to conducting work requiring the use of personal protective equipment, employees must be trained to know:

- When PPE is necessary;
- What type is necessary;
- How it is to be worn;
- What its limitations are; and,
- Proper care, maintenance, useful life, and disposal.

Upon completion of the training, the employee must be able to demonstrate the above mentioned information. Any type of training format can be used as long as a hands-on session is incorporated. Video tapes are available from DES to assist with employee PPE training. Documentation of training is required.

Information regarding eye, face, head, foot and hand protection is provided on the DES web site at: http://www.des.umd.edu. Each section can be used as needed and be adapted to individual workplaces after the completion of a Hazard Assessment to select the proper PPE.

Whenever PPE is used, employee comfort should be considered. When PPE does not fit properly, employees will tend not to use it. Follow the manufacturer's recommendation for proper PPE usage.

VI. PPE SELECTION GUIDELINES

GENERAL CONDITIONS

Personal Protective Equipment (PPE) includes all clothing and work accessories designed to protect employees from workplace hazards. Protective equipment should not replace engineering, administrative, or procedural controls for safety. It should be used in conjunction with these controls. Employees must wear protective equipment as required and when instructed by a supervisor.

For each hazard identified, select personal protective equipment that will protect the employee by creating a barrier against workplace hazards. Consider the likelihood of an accident and the seriousness of a potential accident. Personal protective equipment must be selected to protect against any hazard that is likely to occur or has a serious injury impact if it does occur. It is important that employees become familiar with the potential hazards, the type of protective equipment that is available, and the level of protection that is provided by that equipment, i.e., splash protection, impact protection, etc.

The personal protective equipment selected must fit the employee it is intended to protect. Make certain that employees have the correct size of protective equipment. Whenever possible, select adjustable personal protective equipment. Employee input in the selection process is critical. Employees will more likely wear personal protective equipment that fits properly and is comfortable. Damaged or defective protective equipment shall be immediately taken out of service to be repaired or replaced.

For proper selection of the PPE listed below, please refer to the DES web site.

- Head Protection
- Eye and Face Protection
- Ear Protection
- Respiratory Protection
- Foot Protection
- Hand and Arm Protection

Additional information may also be obtained from:

- DES and the manufacturers of PPE;
- MSDS for chemicals; and
- Product descriptions.

The DES web site is located at http://www.des.umd.edu.

WORKPLACE HAZARD ASSESSMENT

Location: _____ Task: _____

Performed by: _____ Date: _____

This form may be used as an aid in performing hazard assessment.
Review listed hazard classifications, identify all hazards, possible hazards and their sources.
Hazard classification listing is not intended to be complete but is provided as a guide in the assessment.

1. **IMPACT HAZARD**

____DOES NOT EXIST

____DOES EXIST

SOURCE OF HAZARD
___Chipping ____Grinding _____ Sawing ____Drilling
___Sanding _____Riveting _____Flying Particles
___Vibration _____Propelled Devices _____ Chiseling
___Falling/Dropped Objects
___Moving equipment with stationary object
___Other _____.

Body Part Affected
____Head ____ Face/Eyes ____Hands
____Foot _____Body

2. **CHEMICAL HAZARD**

____DOES NOT EXIST

____DOES EXIST

SOURCE OF HAZARD
____Splash/Contact ___Irritating Mist
____Thermal ___Other _____…

____Acid/Caustic _____Solvent
____Oil/Fuel

Body Part Affected
____Head ____ Face/Eyes ____Hands
____Foot _____Body

3. **DUST HAZARD**

____DOES NOT EXIST

____DOES EXIST

SOURCE OF HAZARD
____Buffing ____Sandblasting
____Grinding
____Other _____.

Body Part Affected
____Head __ Face/Eyes __Hands
____Foot _____Body

4. **PENETRATION HAZARD**

____DOES NOT EXIST

____DOES EXIST

SOURCE OF HAZARD

____Sharp Objects _____Metal Shavings
____Propelled Devices ____Grinding
____Other _____.

Body Part Affected
____Head ____ Face/Eyes ____Hands
____Foot _____Body

5. **COMPRESSION HAZARD**

____DOES NOT EXIST

____DOES EXIST

SOURCE OF HAZARD

____Heavy Pipes ___Gas Cylinders
____Hydraulic Presses ____Drums
____Tow Motors ____Other _____.

Body Part Affected
____Head ____ Face/Eyes ____Hands
____Foot _____Body

6. **ELECTRICAL HAZARD**

____DOES NOT EXIST

____DOES EXIST

SOURCE OF HAZARD

__Energized Switch Gear/Equipment
__Energized Lines
__Other _____.

Body Part Affected
____Head ____ Face/Eyes ____Hands
____Foot _____Body

7. **THERMAL HAZARD**

____DOES NOT EXIST

____DOES EXIST

SOURCE OF HAZARD

____Welding _____Brazing ____Furnace Operation
____Flame____Steam __Chemical ___Extreme Weather

Body Part Affected
____Head ____ Face/Eyes ____Hands
____Foot _____Body

8. **LIGHT/NON-IONIZING RADIATION HAZARD**

____DOES NOT EXIST

____DOES EXIST

SOURCE OF HAZARD
__Heat Treating___Brazing
__Welding ____Oxygen Cutting
___Laser
___High Intensity Lighting

Body Part Affected
____Head ____ Face/Eyes ____Hands
____Foot _____Body

UNIVERSITY OF MARYLAND
PERSONAL PROTECTIVE EQUIPMENT GUIDELINE
CERTIFICATION OF HAZARD ASSESSMENT FORM

Job Title: _____ Date: _____
Department: _____ Supervisor: _____
Location: _____ Analysis by: _____
Employee Name(s): _____ Signature: _____

Tasks	Potential Hazard	PPE Recommended

NOTES:

UNIVERSITY OF MARYLAND
PERSONAL PROTECTIVE EQUIPMENT GUIDELINE
CERTIFICATION OF HAZARD ASSESSMENT

EXAMPLE

Job Title: **Maintenance Employee** Date:
Department: Supervisor:
Location: Analysis by:
Employee Name(s): Signature:

Tasks	Potential Hazard	PPE Recommended
Automobile/Heavy Equipment Mechanic Work	Flying particles, petroleum solvents and wastes.	Safety glasses, chemical resistant gloves
Locksmith Work	Flying particles	Safety glasses, face shield when using high speed tools
Wood Working Work (Shop)	Noise, flying particles, lifting/carrying, rough surfaced materials	Hearing protection, safety glasses, face shield for high speed tools, puncture/cut resistant gloves, safety shoes
Metal Working Work (Shop)	Noise, flying particles, lifting/carrying, rough surfaced materials, metal working chemicals	Hearing protection, safety glasses, face shield for high speed tools, puncture/cut resistant gloves, safety shoes
Painting (Shop)	Vapors, mists, solvents and chemicals, flammable	Organic vapor respirator w/paint pre-filter, chemical resistant gloves
Carpentry Work (Shop)	Solvents, glues, punctures	Chemical resistant gloves

UNIVERSITY OF MARYLAND
PERSONAL PROTECTIVE EQUIPMENT GUIDELINE
CERTIFICATION OF HAZARD ASSESSMENT FORM
EXAMPLE

Job Title: **Laboratory Worker** Date:
Department: **All** Supervisor:
Location: **Research Buildings** Analysis by:
Employee Name(s): **All** Signature:

Tasks	Potential Hazard	PPE Recommended
Working with small volumes of corrosive liquids < 1 liter	Skin and eye damage	Safety glasses, goggles splash hazard Light chemical resistant gloves Lab coat, closed shoe, pants
Working with large volumes of corrosive liquids >1 liter, acutely toxic corrosives or work which may create a splash hazard	Large surface area skin and eye damaged, poisoning , or great potential for eye and skin damage.	Safety glasses and face shield Appropriate heavy resistant gloves Above clothes and chemical resistant apron
Working with small volume of organic solvents <1 liter	Skin and damage Slight poisoning potential through skin absorption	Safety glasses, goggles splash hazard Light chemical resistant gloves Lab coat, closed shoe, pants
Working with large volumes of organic solvents >1 liter, very dangerous organic solvents or work which may create a splash hazard	Major skin and eye damage Potential poisoning through skin absorption	Safety glasses and face shield Appropriate heavy resistant gloves Above clothes and chemical resistant apron

NOTES: Please see the glove selection chart for proper selection of all gloves based on the specific hazard**.**

UNIVERSITY OF MARYLAND
PERSONAL PROTECTIVE EQUIPMENT GUIDELINE
CERTIFICATION OF HAZARD ASSESSMENT FORM
EXAMPLE

Job Title: **Tree Trimmer** Date:
Department: **Groundskeeping** Supervisor:
Location: Analysis by:
Employee Name(s): Signature:

Tasks	Potential Hazard	PPE Recommended
Operating hand saw, chainsaw and wood chipper	Impact	Impact approved safety glasses or goggles and faceshield
Trimming activities in, under, or around trees	Falling or rolling objects Splinters, cuts and abrasions	Hard hat and safety boot Leather palm gloves

NOTES:

University of Maryland
Personal Protective Equipment Training Record

I_____ certify that the following affected employees
(print full name)
have received and understood personal protective equipment (PPE) training, which included the following: when PPE is necessary; what PPE is necessary; how to properly don, doff, adjust, and wear PPE; the limitations of the PPE; and the proper care, maintenance, useful life and disposal of the PPE.
Each of the affected employees has demonstrated an understanding of the above and an ability to use the PPE properly. This training is in compliance with 29 CFR 1910.132 (f).

Name	U_ID	Equipment Type	Date of Training

(signature)_____ (date)_____

Note to signer: maintain this certification with your permanent departmental records.

Eye and Face Protection Selection Chart

Type of Work	Hazard	Minimum Eye Protection	Extended Exposure Protection
Impact - Chipping, drilling, riveting, hammering, woodworking, sanding, sawing, and grinding.	Flying fragments, objets, large chips, particles, sand, dirt, etc.	• Direct ventilation goggles • Spectacles with side shields	• Face shield with clear lens worn with goggles or spectacles.
Chemicals – Acid and chemical handling, use of cleaning products, paint use and clean-up products, pesticide and herbicide use.	Splash	• Indirect ventilation goggles	• Face shield with goggles
HEAT – FURNACE OPERATIONS, CASTING, AND WELDING.	Hot sparks, glare, and heat	• Indirect ventilation goggles • Reflective faceshield worn with spectacles	• Welding helmet (Shade 4 to 8)
DUST – WOODWORKING, BUFFING, GENERAL DUSTY CONDITIONS.	NUISANCE DUST	• Direct ventilation goggles	Goggles or spectacles with side protection
LABORATORY TASKS	Chemical splash, glass breakage	Indirect ventilation goggles	Face shield worn with goggles or spectacles
Clinical or medical jobs	Potentially infectious material splash	Spectacles with solid side shields Disposable or reusable face shield	Goggles with indirect ventilation Double-crown face shield
Tasks in ultraviolet (UV) Light	Exposure to direct or reflected UV radiation in the 200 to 400 nm range	For UV protection up to 380 nm • Spectacles or goggles with polycarbonate lens For UV protection up to 405 nm: • Spectacles or goggles with treated polycarbonate lens and UV inhibiting spectacle frames or goggle bodies	• UV resistant face shield worn with spectacles or goggles
Laser work	Reflected or direct beam impact	• Laser-specific spectacles of goggles	
Welding (electric arc)	Infrared radiation and sparks	• Welding helmet or shield (Shade 10 to 14)	
Welding (gas)	Infrared radiation and sparks	• Welding goggles or hand shield (filter Shade 4 to 5) Full face protection in applications requiring a lens shade greater than Shade 5	
Cutting, brazing, and soldering.	Infrared radiation and sparks	• Filter lens spectacles or hand shield: Cutting (Shade 3 to 6) Brazing (Shade 3 to 4) Soldering (Shade 1.5 to 3)	

Safety Gloves and Mittens Selection Chart

Hazard Group	Typical Operations	Recommended Gloves/Mittens	Comments
Heat and molten metal splash	Welding	Standard duty chrome leather	May be reinforced in specific areas
	Furnace Operations	Treated wool/cotton	
Sharp edged materials and objects	Handling swarf and metal sheets	Standard duty chrome leather PVC-coated Terry cord (loop pile)	May be reinforced in specific areas
	Handling blades		
Abrasion (a) heavy duty	Handling dressed bricks, steel stocks, heavy duty packaging	Standard duty leather Terry cord (loop pile)	May be reinforced in specific areas
(b) light duty	Handling of packaged goods	Light duty leather Pigskin Impregnated fabric (PVC)	
Chemicals (general)	Chemical handling	PVC coated fabric Rubber	Protection may be limited to short term contact depending on chemical type of rubber, etc.
(a) acids alkalis,etc.	Paint spraying Chemicals	PVC coated fabric Rubber	
(b) solvents (c) fats, oils, organic acids	Catering, cleaning operations	PVC coated fabric Rubber Various	