UNIVERSITY OF ROCHESTER
ENVIRONMENTAL HEALTH & SAFETY

Policy No.: OS003	**Approved by: Mike Liberty**
Title: Job Hazard Assessment Program	**Date: 2/6/2020**
Revision No.: 1	Page **1** of **23**
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I. PURPOSE

This policy provides as minimum guidelines for implementing the requirements of Subpart I of 29 CFR 1910 of the Occupational Safety and Health Administration (OSHA) regulations.

Personal protective equipment (PPE) such as protective clothing, respiratory devices (respirators), shields, and barriers shall be used to protect against chemical, radiological, biological, or mechanical hazards and irritants capable of causing injury or impairment through absorption, inhalation, or physical contact. Personal protective equipment must be provided, used, and maintained in a sanitary and reliable condition.

When conducting a hazard assessment, consideration shall be given to, among other things, impact, penetration, compression (roll-over), chemical, heat, harmful dust, light, (optical) radiation, bio hazards, ionizing radiation.

Controlling exposures to occupational hazards is the fundamental method of protecting workers. Traditionally, a hierarchy of controls has been used as a means of determining how to implement feasible and effective controls.

- Elimination of the hazard or substitution of the material for a less hazardous one
- Engineering controls to remove a hazard or place a barrier between it and the worker
- Administrative controls to reduce risk by changing behaviors or the way in which a task is done.

Using Personal protective equipment to lower risk by the employee wearing protective items such as safety shoes, safety glasses, hard hat, hearing protection, respirator, etc.
One uses this hierarchy by starting at the top (most effective controls) and working their way to the bottom (least effective controls) following the hierarchy normally leads to the implementation of inherently safer systems, ones where the risk of illness or injury has been substantially reduced.

II. PERSONNEL AFFECTED

Unless a department has its own policy that is equivalent or more stringent in hazard assessment, this policy applies to University employees throughout the University of Rochester River Campus, Medical Center, Laser Labs, and related facilities and operations.

III. DEFINITIONS

Hazard Assessment **-** The hazard assessment is a process of identifying the hazards associated with a defined task and prescribing personal protective equipment along with other relevant protection measures which must be employed to reduce the risk from the hazards. The supervisor shall assess each work assignment to determine if hazards are present or likely to be present and require the use of personal protective equipment.

Certification of Hazard Assessment **-** The certification of hazard assessment is a written document detailing the hazard assessment for particular tasks. The supervisor is responsible for ensuring that hazard assessments are performed and the certification(s) written, signed, dated, and readily available or posted in each location. This certification of hazard assessment should be reviewed at least annually and updated any time a new task that presents a hazard is introduced into the work area. A certification of hazard form is located on the EH&S website at www.safety.rochester.edu/pdf/hazardassessment.pdf.

Performing and Certifying Hazard Assessment(s) **-** Appendix A suggests a format for the written Hazard Assessment Certification. Supervision may choose to use that format or devise their own format as is best suited to their needs.

Other examples of hazard assessments and protective equipment determination are included in the appendix section of this document.

Supervisor **-** Any person responsible for directing the activities of employees, students, contractors or visitors, including, but not limited to trade supervisor/working leaders, principal investigators (PIs), lab managers, nurse managers.

IV. RESPONSIBILITIES

A. Deans, Directors, Department Chairs, Nurse Managers:

1. Provide administrative and financial support for to complete this process within individual departments.
2. Ensure University of Rochester supervisors complete a job hazard assessment for the tasks that are performed by their employees.

B. Supervisors:

Ensure a hazard assessment is completed. The supervisor may delegate this process to another to be completed, but cannot reassign or disclaim the responsibility. After evaluating the work environment and determining that hazards are present, or likely to be present, the supervisor shall do the following:

1. Designate and authorize individuals who will be responsible for the preparation and implementation of this program.
2. Ensure the guidelines set forth in this program are implemented and maintained within the department.
3. Select the types of PPE that the affected employee will use for the hazards identified in the hazard assessment, and the PPE is provided to the employee.
4. Assure the adequacy of the PPE; proper fit protection, maintenance, and sanitation.
5. Communicate selection decisions to each affected employee.
6. Ensure affected employees know how to use their PPE correctly.
7. Ensure affected employees use the required controls and/or PPE when performing tasks identified in the hazard assessment that require their use.
8. Prevent the use of PPE that is inappropriate, defective or damaged. Defective or damaged PPE must be replaced.
9. Never assign a task for which PPE is required but not available.
10. Ensure adequate initial and refresher training is provided to each employee who is required to use PPE. Each employee shall be trained to know at least the following:
    a. When PPE is necessary
    b. What PPE is necessary
    c. How to properly don, doff, adjust, and wear PPE
    d. The limitations of the PPE
    e. The proper care, maintenance, useful life, and disposal of the PPE
11. When the supervisor has reason to believe that an affected employee who has already been trained does not have the understanding and skill required that supervisor shall ensure the employee is retrained. Circumstances that render previous training obsolete or inadequate and therefore require new training or retraining include, but are not limited to:
    a. Changes in the workplace.
    b. Changes in the types of PPE to be used.

c. Observation of inadequacies in the affected employee's knowledge or use of assigned PPE.

12. Verify that each affected employee has received and understands the required training through a written certification that must contain:

a. the name of each employee trained

b. the date(s) of training

c. the subject of certification

C. Faculty, Staff, Students, Visitors and Volunteers

1. Each individual is responsible for wearing his/her required PPE as identified by the supervisor, as a result of conducting a hazard assessment.

2. Each individual is responsible for maintaining and storing his/her PPE in a clean and sanitary condition.

3. Each individual must ensure that his/her PPE is in good operating condition before wearing it.

4. Each individual needs to communicate to his/her supervisor any unforeseen hazards requiring additional PPE.

5. Each individual needs to report to his/her supervisor any defective PPE or need for replacement.

D. EH&S

If requested, EH&S will assist supervisors in evaluating the hazards involved in the job, determining the appropriate PPE necessary, or completing the Hazard Assessment Form (Appendix I of this document). For assistance, contact EH&S at 275-3241.

V. PROCEDURES

A. WALK-THROUGH SURVEY

Supervisors will conduct a walk-through survey of the areas. The purpose of the survey is to identify sources of hazards to workers. Some basic hazard categories include, but are not limited to:

- Impact
- Harmful dust
- Confined Space
- Light radiation
- Infectious agents
- Material handling
- Chemical
- Energized equipment
- Bloodborne Pathogens
- Radioactive materials
- Gases
- Struck against
- Struck by
- DNA/RNA
- Cold
- Heat
- Compression (pressure on a part of the body)
- Penetration (needle sticks, glass, metal, other sharps)

B. SOURCES:

During a walk-through, at a minimum look for:

- Sources of motion that could result in workers hitting or being hit by objects
- Sources of high or low temperatures that could result in burns
- Types of chemical exposures
- Sources of harmful dust
- Sources of light radiation such as welding, transillumination, or germicidal lamps
- Sources of falling objects or potential of dropping objects
- Sources of sharp objects that might pierce the feet or cut the hands
- Sources of rolling or pinching objects that could crush the feet
- Electrical hazards
- Biological hazards
- Atmospheric conditions (dusts, gases, fumes, vapors, illumination, etc.)
- Pressurized equipment (boilers, pots, tanks, piping, hosing, etc.)
- Containers (storage areas and means of storage)
- Hazardous supplies and materials (flammables, explosives, gases, acids, caustics, toxic chemicals, etc.)
- Buildings and structures (condition and layout of floors, doors, stairs, etc.)
- Electrical conductors and apparatus (wires, switches, etc.)

- Water depth (hazards for water samplers)
- Machinery (grinders, drilling machines, cutters, etc.)
- Materials handling equipment (hoists, lifts, etc.)
- Hand tools (tools including portable power tools)
- Ground conditions (in outside areas)
- Elevated work areas (risks of falls)
- Engines, motors, pumps
- Low or inadequate clearance

C. PPE

PPE must be selected which will protect employees from the specific hazards that they are likely to encounter during their work.

- Conduct and document PPE assessment for each work task or assignment
- Select PPE
- Communicate selection decisions to employee
- Provide PPE (obtain, purchase, rent, etc.)
- Train each affected employee
- Test employee understanding
- Document training and employee testing
- Retrain as necessary
- Ensure the requirements are met

Specific protection guidelines apply to using protective equipment, however PPE should always be the final option when protecting workers against known hazards. Elimination of the hazard is always the most favorable option and should be considered before any other, followed by managing or removing the hazard by engineering controls. Next is protection of the employee administratively, through such means as safe work practices (procedures), rotation of employees to minimize exposure and so on. Finally, if the others are proven to be impractical, PPE appropriate for the task and situation should be utilized.

Personal protective equipment includes protective clothing and other work accessories designed to create a barrier against workplace hazards.

PPE shall comply with appropriate American National Standards Institute (ANSI) standards, when standards exist. Examples of PPE and its intended use to be considered at a minimum are:

1. **Body Protection**
   - **a.** Chemically resistant aprons may be used to provide protection while working with large quantities of corrosive materials.
   - **b.** Disposable suits (coveralls, gowns, etc.) will provide limited protection against splashes from hazardous materials including some chemicals and infectious biologicals.
   - **c.** Some processes require that the forearms be provided with additional protection. Chemically resistant sleeves, long gauntlet gloves, or forearm protectors can be purchased.
   - **d.** Liquid resistant gowns are used in surgical situations to provide protection against materials containing bloodborne pathogens.
   - **e.** Lab coats will only protect against very minimal or nuisance-type splashes of hazardous and non-hazardous materials.
2. **Electrical**
   - **a.** Whenever work is done with power tools or work is done on an electrical circuit, there is a risk of electrical shock. Many tools that pose a threat of electric shock are used every day and the risks are often overlooked, but death or serious injury can result from electric shock. The use of power tools requires proper grounding techniques and/or the use of ground fault circuit interrupters (GFCI).
3. Working on live or energized electrical components requires specialized protective equipment. The supervisor and worker must have the knowledge and ability necessary to evaluate and match the PPE to the level of hazard. Refer to the University's Electrical Safety Program available on the web at https://www.safety.rochester.edu/ih/electrical/electricalcontents.html
4. Eye and Face Protection

   Eye protection should always be worn where there is potential for injury to the eyes or face from small particles, toxic chemicals, flying objects or particles, large objects, thermal or radiation hazards, and lasers. According to the types of and extent of hazards, different PPE should be worn. PPE for the face and eyes includes devices such as safety glasses, goggles, and face shields. These must always remain clean and free of contaminants. Safety glasses or goggles must always be worn in laboratory areas whenever hazards from the aforementioned activities/ objects are present.

5. **Fall Protection**

   a. Work at heights needs to be properly planned in advance of the work activity, appropriately supervised, and carried out in a safe manner. Careful consideration should be given to the selection and use of work equipment.

   b. Work at heights can include, but is not exclusively limited to:
   (1) Working at ground level adjacent to an excavation;
   (2) Working on roofs without adequate fixed protection;
   (3) Working on roofs with unprotected roof sky-lights;
   (4) Working from a ladder;
   (5) Working from a scaffold or scaffold tower.

   c. Fall prevention, such as guardrails or other protective barriers, must be the first consideration. Where this is not possible and fall arrest is needed, a risk assessment must be undertaken and a safe system of work developed. Contact EH&S for assistance with Fall Protection issues or any other risk or PPE assessment.

6. **Foot Protection**

   a. Each affected employee shall wear protective footwear when working in areas where there is danger of slipping, objects falling on or compression injuries such as rolling across the foot, piercing the sole, and where the feet are exposed to electrical or chemical and heat burns from spills and splashes of acids and caustics. Foot protection shall comply with appropriate ANSI standards.

   b. Shoe or boot covers are worn to protect shoes and boots. Such covers are available in chemically resistant material to provide limited protection against hazardous materials. Shoe covers are also used to limit the spread of hazardous materials from one area to another.

   c. Close-toed shoes must always be worn in laboratory or other areas where chemicals are present.

7. **Hand**

   a. Employees are required to use appropriate hand protection when the hands are exposed to hazards from severe cuts, lacerations, abrasions or punctures, chemical or thermal burns, harmful temperature extremes, and skin absorption of harmful substances. Supervisors shall base the selection of hand protection on an evaluation of the performance characteristics relative to potential hazards of the task(s) to be performed, conditions present, and duration of use.

   b. Biologicals: In healthcare facilities, one of the primary risks of exposure to hazardous materials is to bloodborne pathogens. Bloodborne pathogens may be

transmitted through contact with human blood and certain body fluids. In research labs other biological materials, including infectious agents and toxins of biological origin, may be used. Again, glove use to provide skin protection is required.

8. Head Protection

Head injuries are commonly caused by impact from falling or flying objects, and falling or walking into hard objects. PPE devices such as hard hats may protect you from objects falling on your head and, in a limited way, from electrical shock or burns. Hard hats should be worn in areas where there is potential for head injuries.

9. Hearing Protection

Exposure to high levels of noise may result in hearing loss. Hearing protection should be worn when the noise level is high, but must be worn when it is 85 decibels or greater averaged over an 8-hour period of time. Popular types of hearing protection devices include earmuffs and foam earplugs.

10. Respiratory Protection

Respirators are used to prevent exposure to air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. All respirator usage, which includes disposable respirators, air purifying respirators, and air supplied respirators, requires medical evaluation through University Health Services or Occupational Heath, annual fit testing and training prior to use. EH&S Industrial Hygiene Unit may be contacted at 585-275-3241 for assistance.

The use of respiratory protective equipment (respirators) shall be in compliance with the University of Rochester Respiratory Protection Program.

D. Hazard Assessment and Personal Protective Equipment Selection

Refer to the appendices listed at the end of this document for hazard assessment forms, examples of completion and other guidance.

Please include the job hazards (i.e. exposure to TB, blood, noise levels that exceed 85 dBA, hazardous chemicals that require respiratory protection, etc.) and the associated health assessments necessary, for example:

- Required/recommended vaccines (i.e. Hep B, rabies)
- Medical monitoring (for enrollment in the Hearing Conservation or Respiratory Protection Program, PPD skins tests for TB infection, etc.)
- Fit testing for respirators (N95 or any tight fitting respirator)

University employees may be exposed to additional hazards not listed above or in the appendices. Examples of these may be falls, slips/trips, gases and/or liquids under pressure, confined spaces, etc. Hazards such as these may or may not require additional PPE, but can require hazard recognition and possible other controls or procedures. EH&S can be contacted at 585-275-3241 to assist with the hazard assessment.

Newly purchased PPE must conform to the updated American National Standards Institute (ANSI) standards that have been incorporated into the OSHA regulations, as follows:

- Eye and Face Protection – ANSI Z87.1-1989
- Head Protection – ANSI Z89.1-1986
- Foot Protection – ANSI Z41-1991

Hand Protection – There are no ANSI standards for gloves. However, selection must be made based on the performance characteristics of the glove in relation to the tasks to be performed. Manufacturer information should be reviewed to ensure that adequate protection will be provided for the work to be performed.

V. REFERENCES

- 29 CFR 1910.132 - General Requirements
- 29 CFR 1910.133 - Eye and Face Protection
- 29 CFR 1910.134 - Respiratory Protection
- 29 CFR 1910.135 - Head Protection
- 29 CFR 1910.136 - Foot Protection
- 29 CFR 1910.137 - Electrical Protective Equipment
- 29 CFR 1910.138 - Hand Protection
- 29 CFR 1910 - Subpart 1 Appendix B - Compliance Guidelines for Hazard Assessment and Personal Protective Equipment Selection
- 29CFR 1910.1030 Bloodborne Pathogens
- 29CFR 1910.1048 Formaldehyde
- 29 CFR 1910.1450 - Occupational Exposure to Hazardous Chemicals in Laboratories

- **ANSI Standards for PPE**
  - Eye and Face Protection – ANSI Z87.1-1989
  - Head Protection – ANSI Z89.1-1986
  - Foot Protection – ANSI Z41-1991

VI. APPENDICES/FORMS

Following Appendix 1 are examples of certification forms and task analysis guidance for selecting PPE or other controls.

- **A.** Appendix 1: CERTIFICATION OF HAZARD ASSESSMENT FORM
- **B.** Appendix 2: Example of Task Analysis & Minimum Requirements for Eye/Face Protection
- **C.** Appendix 3: Example of Task Analysis & Minimum Requirements for Foot/Leg Protection
- **D.** Appendix 4: Example of Task Analysis & Minimum Requirements for Hand/Arm Protection
- **E.** Appendix 5: Glove Selection Guidance
- **F.** Appendix 6: Example of Task Analysis & Minimum Requirements for Head Protection
- **G.** Appendix 7: Example of Task Analysis & Minimum Requirements for Hearing Protection
- **H.** Appendix 8: Example of Task Analysis & Minimum Requirements for Respiratory Protection
- **I.** Appendix 9: Example Completed Certification Of Hazard Assessment For Chemical Laboratory Employee
- **J.** Appendix 10: Example Completed Certification Of Hazard Assessment For Maintenance Worker
- **K.** Appendix 11: Example Completed Certification of Hazard Assessment for Biological Lab Employee
- **L.** Appendix 12: Example Completed Certification of Hazard Assessment for Patient Care handling

VII. REVISION HISTORY

Date	Revision No.	Description
4/29/2009	New	Establish Job Hazard Assessment Program
2/6/2020	1	Updated links, corrected formatting and grammar

APPENDIX 1

CERTIFICATION OF HAZARD ASSESSMENT FORM

(print additional copies as necessary)

Assessment Date:	Department:	
Building:	Area:	
Job Title:		
Task, Job, Workstation	**Potential Hazards**	**PPE or Controls**

Other controls or notes: _____

_____

_____

CERTIFICATION: I certify this hazard assessment was conducted according to University policy and the signatures below indicate acknowledgement.

_____	_____	_____	_____
Employee Signature:	Date:	Supervisor Signature:	Date:

This form can be found on the EH&S website at https://www.safety.rochester.edu/ih/jha/hazardassessprogram.html and printed out for use or saved and used electronically

APPENDIX 2

Example of Task Analysis & Minimum Requirements for Eye/Face Protection

Appropriate eye and face protection, such as safety glasses, goggles, and face shields, must be used to protect against the hazards associated with flying particles, molten metal, liquid chemicals, acids and caustic liquids, chemical gases and vapors, or potentially injurious light radiation from welding or laser operations.

Task Example	Hazardous Activities	Minimum PPE; one or more of:
Do employees perform tasks, or work near employees who perform tasks, that might produce airborne dust or flying particles?	Sawing, cutting, drilling, sanding, grinding, hammering, chopping, abrasive blasting, punch press operations	Chemical goggles or safety glasses with side shields and full-face shield
Do employees perform tasks, or work near employees who perform tasks, that might produce airborne particles?	Pressurized spraying or high speed pressure cleaning	Safety glasses with side shields or safety glasses with side shields covered by a full face shield
Do employees handle, or work near employees using hazardous liquid chemicals, cryogenic materials or encounter blood splashes?	Pouring, mixing, painting, cleaning, siphoning, dip tank operations, battery charging, dental and health care services	Chemical goggles or safety glasses with side shields covered by a full face shield
Are employees' eyes exposed to other potential physical or chemical irritants?	Installing fiberglass insulation, compressed air or gas operating, etc.	Safety glasses with side shields
Are employees exposed to intense light?	Welding, cutting, etc.	Safety glasses worn under appropriate welding helmet, tinted safety glasses [(1)] with side shield
Are employees exposed to lasers?	Laser operations	Eye protection appropriate for specific laser [(2)]
Are employees using spray containers	Cleaning/lubricating with sprays	Safety glasses, goggles, face shield
Are employees handling chemicals	Splash, acid burns, vapors	Fume hood, local ventilation, face shield for severe exposure

[(1)] The intensity of visible light and radiant energy produced by welding operations varies depending on the task, the electrode size, and the arc current. Workers involved in welding, cutting, and brazing operations must use appropriate welding protection depending on specific welding operations. 1910.133

Welding helmets are secondary protectors intended to shield the eyes and face from optical radiation, heat, and impact. Use welding helmets *in addition* to primary protection such as safety spectacles or goggles to provide adequate protection.

[(2)] Determine the maximum power density, or intensity, lasers produce when workers are exposed to laser beams. Based on this knowledge, select lenses that protect against the maximum intensity. The selection of laser protection should depend upon the lasers in use and the operating conditions. Workers with exposure to laser beams must be furnished suitable laser protection. [1910.133 Those working with lasers and exposed to danger from impact must utilize laser eye protection that meets the specifications of ANSI Z87.

APPENDIX 3

Example of Task Analysis & Minimum Requirements for Foot/Leg Protection

Task Example	Hazardous Activities	Minimum PPE; one or more of:
Can tools, sharp objects, heavy equipment or other heavy objects roll, fall onto, or strike employee's feet?	Construction, plumbing, building maintenance, trenching, utility work, grass cutting, etc.	Metatarsal guards, toe guards, combination foot/toe guard, safety shoes as appropriate for the task
Do your employees handle or work near employees who handle hazardous chemical liquids, molten metal or cryogenic material?	Welding, work, casting, chemical store rooms, Liquid oxygen/nitrogen fill areas	Leggings, metatarsal guard combination foot/shin guard, safety shoes as appropriate for the task
Do your employees work with or near exposed electrical wiring components?	Building maintenance, utility work, construction, wiring work on or near communications, computers, or other high tech equipment	Safety shoes with soles made safe for the type of electrical work being performed
Do your employees work in laboratories with chemicals, biohazards?	Spillage, slips, trips, dropping material on feet	No open-toed shoes, no soft cloth shoe, shoes with good support and footing

APPENDIX 4

Example of Task Analysis & Minimum Requirements for Hand/Arm Protection

Task Example	Hazardous Activities	Minimum PPE; one or more of:
Do hands come in contact with tools or materials that might scrape, bruise, or cut?	Grinding, sanding, sawing, hammering, material handling, meat cutting, glazier	Metal mesh, leather, canvas, Kevlar material, cloth
Are chemicals, blood or other body fluids handled that may contact skin?	Pouring, mixing, painting, leaning, siphoning, dip tank operations, health care and dental services	See glove chart, chemical and liquid resistant gloves may be double gloved or under other protective gloves (e.g., leather or canvas)
Do work procedures require hands and arms near extreme heat or cold?	Welding, pouring molten metal, baking, cooking, drying, handling cryogenic material	Leather, aluminized, aramid fiber, cryogenic rated gloves
Are hands or arms placed near exposed electrical wiring or components?	Building maintenance, utility work, construction, wiring, work on or near communications or computers	Electrically rated insulating rubber gloves see manufacturer's instruction and specifications

APPENDIX 5

GLOVE SELECTION GUIDANCE (1)

Resistance to Chemicals of Common Glove Material

(E = Excellent, G = Good, F = Fair, P = Poor)

Chemical	Natural Rubber	Neoprene	Nitrile	Vinyl	Chemical	Natural Rubber	Neoprene	Nitrile	Vinyl
Acetaldehyde	G	G	E	G	Formic Acid	G	E	E	E
Acetic Acid	E	E	E	E	Glycerol	G	G	E	E
Acetone	G	G	G	F	Hexamine	P	E	-	E
Acrylonitrile	P	G	-	F	Hydrobromic Acid (40%)	G	E	-	E
Ammonium Hydroxide	G	E	E	E	Hydrochloric Acid	G	G	G	E
Aniline	F	G	E	G	Hydrofluoric Acid (30%)	G	G	G	E
Benzaldehyde	F	F	E	G	Hydrogen Peroxide	G	G	G	E
Benzene	P	F	G	F	Iodine	G	G	-	G
Benzyl Chloride	F	P	G	P	Methylamine	G	G	E	E
Bromine	G	G	-	G	Methyl Cellosolve	F	E	-	P
Butane	P	E	-	P	Methyl Chloride	P	E	-	P
Calcium Hypochloride	P	G	G	G	Methyl Ethyl Ketone	F	G	G	P
Carbon Disulfide	P	P	G	F	Methylene Chloride	F	F	G	F
Carbon Tetrachloride	P	F	G	F	Monoethanolamine	F	E	-	E
Chlorine	G	G	-	G	Morpholine	F	E	-	E
Chloroacetone	F	E	-	P	Naphthalene	G	G	E	G
Chloroform	P	F	G	P	Nitric Acid (conc)	P	P	P	G
Chromic Acid	P	F	F	E	Perchloric Acid	F	G	F	E
Cyclohexane	F	E	-	P	Phenol	G	E	-	E
Dibenzylether	F	G	-	P	Phosphoric Acid	G	E	-	E
Dibutylphthalate	F	G	-	P	Potassium Hydroxide (sat)	G	G	G	E
Diethanolamine	F	E	-	E	Propylene Dichloride	P	F	-	P
Diethyl Ether	F	G	E	P	Sodium Hydroxide	G	G	G	E
Dimethyl Sulfoxide	-	-	-	-	Sodium Hypochlorite	G	P	F	G
Ethyl Acetate	F	G	G	F	Sulfuric Acid	G	G	F	G
Ethylene Dichloride	P	F	G	P	Toluene	P	F	G	F
Ethylene Glycol	G	G	E	E	Trichloroethylene	P	F	G	F
Ethylene Trichloride	P	P	-	P	Tricresyl Phosphate	P	F	-	F
Fluorine	G	G	-	G	Triethanolamine	F	E	E	E
Formaldehyde	G	E	E	E	Trinitrotoluene	P	E	-	P

Aromatic and halogenated hydrocarbons will attack all types of natural and synthetic glove materials. Should swelling occur, the user should change to fresh gloves and allow swollen gloves to dry and return to normal.

No data on the resistance to Dimethyl sulfoxide of natural rubber, neoprene, nitrile rubber, or vinyl materials are available; the manufacturer of the substance recommends the use of butyl rubber gloves.

Taken from *Prudent Practices for Handling Hazardous Chemicals in laboratories, 1981.*

(1) This chart taken from *The University of Kentucky Personal Protective Equipment Program and Hazard Assessment*

APPENDIX 6

Example of Task Analysis & Minimum Requirements for Head Protection

Task Example	Hazardous Activities	Minimum PPE; one or more of:
Are employees working with any type of equipment or materials overhead of other employees?	Work stations or traffic routes located under catwalks or conveyors belts	Hard hat, danger signs
Are employees handling or manipulating objects above head level without safety guards installed to protect from falling objects?	Construction, confined space operations, building maintenance, wiring, work on or near communications equipment, computers or other high tech equipment	Hard hat
Do employees work in areas with a probability of falling objects?	Construction sites, tree trimming, trenches/excavations	Hard hat

APPENDIX 7

Example of Task Analysis & Minimum Requirements for Hearing Protection

Task Example	Hazardous Activities	Minimum PPE; one or more of:
Are your employees exposed to excessive loud noise from machines, tools, processes, etc.?	Machining, grinding, sanding, work near conveyors, pneumatic equipment, generator, ventilation fans, motors, punch and brake presses, etc.	Ear muffs or ear plugs

APPENDIX 8

Example of Task Analysis & Minimum Requirements for Respirator Protection

Task Example	Hazardous Activities	Minimum PPE; one or more of:
Are your employees exposed to airborne biological diseases, dust, mist or vapors above regulatory specified permissible limits?	Machining, grinding, sanding, painting, working with solvents, hazardous chemicals, asbestos, lead, work with or near patients with TB	Contact EH&S for a work place evaluation and respirator program guidelines

APPENDIX 9:

EXAMPLE CERTIFICATION OF HAZARD ASSESSMENT for Chemical Laboratory Employee

Assessment Date:	Department:	
Building:	Area:	
Job Title: Chemical Laboratory Employee		
Task, Job, Workstation	**Potential Hazards**	**PPE or Controls**
Working with low hazard chemicals w/low splash probability (<7500 ml)	Skin and eye irritation	Safety glasses, chemical resistant gloves, lab coat, closed shoe of good structure, long pants. Be aware of the nearest eyewash
Larger quantities of corrosive liquids w/reasonable probability of splash (>1 liter)	Skin and eye damage	Chemical splash goggles or faceshield, neoprene gloves, lab coat, closed shoes, chemical resistant apron
Large volumes of organic solvents (>1 liter)	Significant skin/eye damage; absorption through	Chemical splash goggles or faceshield, heavy resistant gloves, lab coat, closed shoes, chemical resistant apron
Work with of blood/body fluids, other infectious materials	Infection with infectious disease Potential for spread of disease	Safety glasses, goggle, or face shield, nitrile gloves, lab coat, closed shoe, long pants, shoe covers
Work with large volumes of blood/body fluids, other infectious materials	Increased possibility of being infected w/infectious materials	Safety glasses, goggles or face shield, Nitrile gloves, Coverall closed shoe, pants, shoe cove
Working with cryogenic liquids Freezers, dry ice	Major skin, eye and tissue damage, frostbite	Safety glasses and goggles or faceshields for splash hazards, insulated gloves, closed shoe
Working with ultraviolet radiation	Conjunctivitis, corneal eye damage,	UV safety glasses & goggles or UV face shield, nitrile gloves, lab coat, closed shoe, long pants, shoe cover
Working in lab with potential for falling tools or equipment	Head Injury	Hard hat, impact resistant toed shoes
Washing glassware	Skin lacerations from broken glass	Safety glasses, rubber gloves, lab coat
Working with compressed gases	Accidental tip over, stuck against	Gas cylinders must be secured to stationary objects in a safe location away from danger or impact
Mixing, dispensing volatile chemicals	Inhalation of toxic vapors	Perform in fume hood

Other controls or notes: _____

CERTIFICATION: I certify this hazard assessment was conducted according to University policy and the signatures below indicate acknowledgement.

Employee Signature: _____ Date: _____ Supervisor Signature: _____ Date: _____

APPENDIX 10:

EXAMPLE CERTIFICATION OF HAZARD ASSESSMENT For Maintenance Worker

Assessment Date:	Department:	
Building:	Area:	
Job Title: Maintenance Worker		
Task, Job, Workstation	**Potential Hazards**	**PPE or Controls**
Arc welding, cutting	Electric shock, melted metal, sparks, UV light, sharp objects	Fire blankets, insulated, puncture resistant gloves, construction grade work shoes, welding helmet with appropriate eye shade for work
Metal grinding or chipping	Metal sparks and chips, falling, dropping, sharp objects	Heat and cut resistant gloves, long sleeves, construction grade work shoes, safety glasses
Confined Space work	Hazardous atmosphere, restricted entry/egress	Determine appropriate PPE in accord with the confined space permit
Painting in enclosed area	Vapors, mists, solvents, chemicals, flammables	Organic vapor respirator, chemical resistant glove. Keep away from heat or spark
Operating saws, drills, other power tools	Eye hazards from flying chips, cuts from blades and bits	Safety glasses with side shields, guards in place, hearing protection where needed
Plumbing work	Hot surfaces, rough surfaced materials	Heat resistant gloves, cut resistant gloves, rubber gloves, safety glasses
General maintenance work	Rough surface materials, lifting/carrying	Cut resistant gloves, construction grade work shoes, safety glasses

Other controls or notes: _____

_____

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CERTIFICATION: I certify this hazard assessment was conducted according to University policy and the signatures below indicate acknowledgement.

_____ _____ _____ _____

Employee Signature: Date: Supervisor Signature: Date:

APPENDIX 11:

EXAMPLE CERTIFICATION OF HAZARD ASSESSMENT for Biological Lab Employee

Assessment Date:	Department:	
Building:	Area:	
Job Title: Biological Lab Employee		
Task, Job, Workstation	**Potential Hazards**	**PPE or Controls**
Working with human blood, body fluids, tissues, or blood borne pathogens (BBP).	Exposure to infectious material	Safety goggles with face shield or facemask plus goggles, latex or nitrile gloves, lab coat or gown. Personnel must be have eyewash present.
Working with live animals	Animal bites, exposure to infectious material, allergies	Safety glasses or goggles for protection from splash or other eye hazard, latex, nitrile or vinyl gloves, lab coat or gown. Consider need for wire mesh glove
Working with animal specimens (preserved and unpreserved).	Exposure to infectious material or preservatives.	Safety glasses or goggles, protective gloves such as latex or nitrile for unpreserved specimens (select protective glove for preserved specimens according to preservative used), lab coat or gown. Wire mesh gloves for cutting, performing necropsies

Other controls or notes: _____

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_____

CERTIFICATION: I certify this hazard assessment was conducted according to University policy and the signatures below indicate acknowledgement.

_____ _____ _____ _____

Employee Signature: Date: Supervisor Signature: Date:

APPENDIX 12:

EXAMPLE CERTIFICATION OF HAZARD ASSESSMENT for Nurse

Assessment Date:	Department:	
Building:	Area:	
Job Title: Nurse		
Task, Job, Workstation	**Potential Hazards**	**PPE or Controls**
Patient movement or transfer	Musculoskeletal injuries; back sprains, strains	Safe patient handling equipment and procedures
Movement on wet or damp floor	Slips, falls; drop objects on feet	Rubber soled shoes, attention to wet floor signs, walk on dry section
Washing, mixing of chemicals	Spills, dropped objects, splashes, eye irritation, Skin irritation	Protective eyewear of faceshields, tight fitting goggles when aerosolized chemicals. Gloves appropriate for chemical and task
Administer drugs, draw blood	Bloodborne pathogen exposure	Standard nitrile exam gloves
Provide patient injections	Needle stick injury	Activate safety immediately after use. Immediately dispose of used or unwanted syringes/needles in sharps containers
Administering chemo therapy drugs	Exposure to hazardous chemicals	Approved hospital chemo glove
Other patient contact	Infectious disease	Gowns or aprons, gloves, respirator as needed as determined by Infection Prevention

Other controls or notes: _____

_____

_____

CERTIFICATION: I certify this hazard assessment was conducted according to University policy and the signatures below indicate acknowledgement.

_____	_____	_____	_____
Employee Signature:	Date:	Supervisor Signature:	Date: