

# North Carolina Department of Agriculture and Consumer Services

## **Personal Protective Equipment Policy and Program Procedures**

### **Compliance Guide for OSHA Standards 1910.132, .133, .135, .136, and .138**

#### **1. Introduction**

#### **2. Responsibilities**

1. Supervisors
2. Employees
3. Office of Health and Safety

#### **3. Program Components**

1. Hazard Assessment and Equipment Selection
2. Protective Devices
  1. Eye and Face Protection
  2. Head Protection
  3. Foot Protection
  4. Hand Protection
3. Selection and Use of PPE in Laboratories
4. Cleaning and Maintenance
5. Training
6. Recordkeeping

#### **References**

#### **Appendix A General Guidelines for Choosing Personal Protective Equipment**

#### **Appendix B Hazard Assessment Certification Form**

### **Personal Protective Equipment Program**

#### **1.0 Introduction**

The objective of the **Personal Protective Equipment (PPE) Program** is to protect employees from the risk of injury by creating a barrier against workplace hazards. Personal protective equipment is not a substitute for good engineering, administrative controls or good work practices, but should be used in conjunction with these controls to ensure the safety and health of employees. Personal protective equipment will be provided, used, and maintained when it has been determined that its use is required and that such use will lessen the likelihood of occupational injury and/or illness.

This program addresses eye, face, head, foot, and hand protection. Separate programs exist for respiratory and hearing protection since the need for participation in these programs is established through industrial hygiene monitoring. Standards and procedures set forth in this policy shall be

considered minimum requirements. Divisions may set more stringent standards for specific laboratories, sites or procedures with approval of the Department Safety Director.

The North Carolina Department of Agriculture and Consumer Services Personal Protective Equipment Program includes:

- Responsibilities of supervisors, employees, and the Department Safety Director
- Hazard assessment and PPE selection
- Employee training
- Recordkeeping requirements

## **2.0 Responsibilities**

### **2.1 Division Directors**

- Shall be responsible and held accountable for overall division implementation.

### **2.2 Supervisors**

Supervisors have the primary responsibility for implementation of the PPE Program in their work area. This involves:

- Providing appropriate PPE and making it available to employees.
- Ensuring employees are trained on the proper use, care, and cleaning of PPE.
- Maintaining records on PPE assignments and training.
- Supervising staff to ensure that the PPE Program elements are followed and that employees properly use and care for PPE.
- Seeking assistance from the Department Safety Director to evaluate hazards.
- Notifying the Department Safety Director when new hazards are introduced or when processes are added or changed.
- Ensuring defective or damaged equipment is immediately replaced.

### **2.3 Employees**

The PPE user is responsible for following the requirements of the PPE Program. This involves:

- Wearing PPE as required.
- Attending required training sessions.
- Caring for, cleaning, and maintaining PPE as required.
- Informing the supervisor of the need to repair or replace PPE.

## **2.4 North Carolina Department of Agriculture and Consumer Services Safety Director**

The North Carolina Department of Agriculture and Consumer Services Safety Director is responsible for the development, and will assist management in administration of the PPE Program. This involves:

- Assisting management in conducting workplace hazard assessments to determine the presence of hazards which necessitate the use of PPE.
- Conducting periodic workplace assessments as required by supervisors and/or as determined by the Safety Director.
- Maintaining records on hazard assessments.
- Providing training and technical assistance to supervisors on the proper use, care, and cleaning of approved PPE.
- Providing guidance to the supervisor for the selection and purchase of approved PPE.
- Periodically reevaluating the suitability of previously selected PPE.
- Reviewing, updating, and evaluating the overall effectiveness of the PPE Program.

## **3.0 Program Components**

### **3.1 Hazard Assessment and Equipment Selection**

OSHA requires employers to conduct inspections of all workplaces to determine the need for personal protective equipment (PPE) and to help in selecting the proper PPE for each tasks performed. For each work site, a certificate must be completed which lists the findings of the inspection and the specific protective equipment needed. These duties will be distributed between the Safety Director and supervisors.

The Department Safety Director, in conjunction with supervisors, will conduct a walk-through survey of each work area to identify actual or potential sources of hazards, including: impact, penetration, compression, chemical, heat, dust, electrical, material handling, and light radiation. Each survey will be documented using the Hazard Assessment Certification Form (appendix B), which identifies the workplace surveyed, the signature of the person conducting the survey, findings of potential hazards, and date of the survey.

Once the hazards of a workplace have been identified, the Safety Director will determine the suitability of the PPE presently available and as necessary, select new or additional equipment which ensures a level of protection greater than the minimum required to protect the employees from the hazards. Care will be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards will be provided or recommended for purchase.

## **3.2 Protective Devices**

All personal protective clothing and equipment will be of safe design and construction for the work to be performed and shall be maintained in a sanitary and reliable condition. Only those items of protective clothing and equipment that meet NIOSH or ANSI (American National Standards Institute) standards will be procured or accepted for use, if such standards exist for the device. All applicable PPE must conform to the updated ANSI standards which have been incorporated into the OSHA PPE regulations, as follows:

- a. Eye and Face Protection ANSI Z87.1-1989
- b. Head Protection ANSI Z89.1-1986
- c. Foot Protection ANSI Z41.1-1991
- d. Hand Protection. There are no ANSI standards for gloves, however, selection must be based on the performance characteristics of the glove in relation to the tasks to be performed.

Careful consideration will be given to comfort and fit of PPE in order to ensure that it will be used. Protective devices are generally available in a variety of sizes. Care should be taken to ensure that the right size is selected. Cost of all PPE shall be borne by the North Carolina Department of Agriculture and Consumer Services.

### **3.2.1 Eye and Face Protection**

Prevention of eye injuries requires that all persons who may be in eye hazard areas wear protective eyewear. This includes employees, visitors, researchers, contractors, or others passing through an identified eye hazard area. To provide protection for these personnel, Supervisors of such areas shall procure a sufficient quantity of goggles and/or plastic eye protectors which afford the maximum amount of protection possible. If these personnel wear personal glasses, they shall be provided with suitable eye protector to wear over them or ANSI approved prescription eyewear.

Suitable protectors shall be used when employees are exposed to hazards from flying particles, molten metal, acids or caustic liquids, chemical liquids, gases, or vapors, bioaerosols, or potentially injurious light radiation.

- Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment.
- Side protectors shall be used when there is a hazard from flying objects.
- Goggles and face shields shall be used when there is a hazard from chemical splash.

- Face shields shall only be worn over primary eye protection (safety glasses or goggles).
- For employees who wear prescription lenses, eye protectors shall either incorporate the prescription in the design or fit properly over the prescription lenses.
- Protectors shall be marked to identify the manufacturer.
- Equipment fitted with appropriate filter lenses shall be used to protect against light radiation. Tinted and shaded lenses are not filter lenses unless they are marked or identified as such.

### **Prescription Safety Eyewear**

OSHA regulations require that each affected employee who wears prescription lenses while engaged in operations that involve eye hazards shall wear eye protection that incorporates the prescription in its design, or shall wear eye protection that can be worn over the prescription lenses (goggles, face shields) without disturbing the proper position of the prescription lenses or the protective lenses. Personnel requiring prescription safety glasses may contact the Department Safety Director to have their request for prescription safety glasses processed.

### **Emergency Eyewash Facilities**

Emergency eyewash facilities meeting the requirements of ANSI Z358.1 will be provided in all areas where the eyes of any employee may be exposed to corrosive materials. All such emergency facilities will be located where they are easily accessible in an emergency.

### **3.2.2 Head Protection**

Head protection will be furnished to, and used by, all employees and contractors engaged in construction and other miscellaneous work. Head protection is also required to be worn by engineers, inspectors, and visitors at construction sites when hazards from falling or fixed objects, or electrical shock are present. Bump caps/skull guards will be issued and worn for protection against scalp lacerations from contact with sharp objects. However, they will not be worn as substitutes for safety caps/hats because they do not afford protection from high impact forces or penetration by falling objects.

### **3.2.3 Foot Protection**

Safety shoes shall be worn in the shops, warehouses, maintenance, and other areas and job tasks as determined by management and the Safety Director. All safety footwear shall comply with ANSI 41-1991, "American National Standard for Personal Protection - Protective Footwear."

Safety shoes or boots with impact protection are required to be worn in work areas where carrying or handling materials such as packages, objects, parts or heavy tools, which could be dropped; and for other activities where objects might fall onto the feet. Safety shoes or boots with compression protection are required for work activities involving forklifts, pallet jacks or other activities in which materials or equipment could potentially roll over an employee's feet. Safety shoes or boots with puncture protection are required where sharp objects such as nails, wire, tacks, screws, large staples, scrap metal etc., could be stepped on by employees, causing a foot injury.

### **3.2.4 Hand Protection**

Suitable gloves shall be worn when hazards from chemicals, cuts, lacerations, abrasions, punctures, burns, biologicals, and harmful temperature extremes are present. Glove selection shall be based on hazards present, performance characteristics of the gloves, condition and duration of use. One type of glove will not work in all situations.

The first consideration in the selection of gloves for use against chemicals is to determine, if possible, the exact nature of the substances to be encountered. Read instructions and warnings on chemical container labels and MSDSs before working with any chemical. Recommended glove types are often listed in the section for personal protective equipment.

All glove materials are eventually permeated by chemicals. However, they can be used safely for limited time periods if specific use and other characteristics (i.e., thickness and permeation rate and time) are known. The Office of Health and Safety can assist in determining the specific type of glove material that should be worn for a particular chemical.

## **3.3 Selection and Use of PPE in Laboratories**

PPE may be required to reduce the risk of exposure of an employee by contact, inhalation or ingestion of an infectious agent, toxic substance, or radioactive material. For biological agents, OHS, in conjunction with the Lab Supervisor will determine the Biosafety Level for the lab and the appropriate type of PPE required to be worn while working in the lab. At the present time, the only radioactive materials used by North Carolina Department of Agriculture and Consumer Services personnel are sealed detectors used in gas chromatography.

### **3.3.1 Laboratory Coats and Gowns**

The lab coat can be used to protect street clothing against biological or chemical spills as well as to provide some additional body protection. The specific hazard(s) and the degree of protection required must be known before selecting coats for lab personnel.

### **3.3.2 Foot Protection**

Safety shoes should be worn in any area where there is a significant risk of dropping heavy objects on the foot. For general biological lab and chemical lab use, comfortable shoes such as tennis shoes are used extensively. Sandals and other types of open-toed shoes are not permitted in labs using biohazards or chemicals, due to the potential exposure to infectious agents or toxic materials as well as physical injuries associated with the work.

### **3.3.3 Face shields and Eye Protection**

Face shields and goggles should be worn whenever procedures are conducted with a high potential for creating aerosols or flying particles. These include grinding operations and situations where chemicals that are toxic or caustic may be splashed onto the face. This may also include necropsy of infected animals and harvesting of tissues or fluids from infected animals. Supervision shall determine PPE requirements commensurate with the potential risk of employee exposure to human infectious agents.

## **3.4 Cleaning and Maintenance**

It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. PPE should be inspected, cleaned, and maintained at regular intervals so that the PPE provides the requisite protection. Personal protective equipment shall not be shared between employees until it has been properly cleaned and sanitized. PPE will be distributed for individual use whenever possible.

It is also important to ensure that used PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

## **3.5 Training**

Any worker required to wear PPE shall receive training in the proper use and care of PPE. Periodic retraining shall be offered by the Department Safety Director to both employees and supervisors, as needed. The training shall include, but not necessarily be limited to, the following subjects:

- What PPE is necessary.
- When PPE is necessary to be worn.
- How to properly don, doff, adjust, and wear PPE.
- The limitations of the PPE.
- The proper care, maintenance, useful life and disposal of the PPE.

After the training, the employees shall demonstrate they understand the components of the PPE Program and how to use PPE properly, or they shall be retrained. Employees transferred to jobs with hazards requiring use of different PPE shall also be retrained.

### **3.6 Recordkeeping**

Written records shall be kept of the names of persons trained, the type of training provided, and the dates when training occurred. Supervisors shall maintain their employees' training records for at least 3 years. The Safety Director shall provide records of training to supervisor when training is conducted by the Safety Director. The Safety Director shall maintain the Hazard Assessment Certification Form for each work site evaluated for at least 3 years.

## **REFERENCES**

American National Standards Institute, American National Standard ANSI Z41-1991, "Personnel Protection - Protective Footwear".

American National Standards Institute, American National Standard ANSI Z98.1-1989, "Practice for Occupational and Educational Eye and Face Protection".

American National Standards Institute, American National Standard ANSI Z89.1-1986, "Safety Requirements for Industrial Head Protection".

OSHA Standard 29 CFR 1910.132, "General Requirements".

OSHA Standard 29 CFR 1910.133, "Eye and Face Protection".

OSHA Standard 29 CFR 1910.135, "Head Protection".

OSHA Standard 29 CFR 1910.136, "Occupational Foot Protection".

OSHA Standard 29 CFR 1910.138, "Hand Protection".

## APPENDIX A

### General Guidelines for Choosing Personal Protective Equipment

#### 1. Description and Use of Eye/Face Protectors

- a. **Safety Glasses.** Protective eyeglasses are made with safety frames, tempered glass or plastic lenses, temples and side shields which provide eye protection from moderate impact and particles encountered in job tasks such as carpentry, woodworking, grinding, scaling, etc. Safety glasses are also available in prescription form for those persons who need corrective lenses.
- b. **Single Lens Goggles.** Vinyl framed goggles of soft pliable body design provide adequate eye protection from many hazards. These goggles are available with clear or tinted lenses, perforated, port vented, or non-vented frames. Single lens goggles provide similar protection to spectacles and may be worn in combination with spectacles or corrective lenses to insure protection along with proper vision.
- c. **Welders/Chippers Goggles.** These goggles are available in rigid and soft frames to accommodate single or two eyepiece lenses.
  1. Welders goggles provide protection from sparking, scaling, or splashing metals and harmful light rays. Lenses are impact resistant and are available in graduated shades of filtration.
  2. Chippers/Grinders goggles provide eye protection from flying particles. The dual protective eye cups house impact resistant clear lenses with individual cover plates.
- d. **Face Shields.** These normally consist of an adjustable headgear and face shield of tinted/transparent acetate or polycarbonate materials, face shield of tinted/transparent acetate or polycarbonate materials, or wire screen. Face shields are available in various sizes, tensile strength, impact/heat resistance and light ray filtering capacity. Face shields will be used in operations when the entire face needs protection and should be worn to protect eyes and face against flying particles, metal sparks, and chemical/biological splash.
- e. **Welding Shields.** These shield assemblies consist of vulcanized fiber or glass fiber body, a ratchet/button type adjustable headgear or cap attachment and a filter and cover plate holder. These shields will be provided to protect workers' eyes and face from infrared or radiant light burns, flying sparks, metal spatter and slag chips encountered during welding, brazing, soldering, resistance welding, bare or shielded electric arc welding and oxyacetylene welding and cutting operations.

#### 2. Head Protection

Head injuries are caused by falling or flying objects, or by bumping the head against a fixed object. Head protectors, in the form of protective hats, must resist penetration and absorb the shock of a blow. The shell of the protective hat is hard enough to resist the blow and the headband and crown straps keep the shell away from the wearer's skull. Protective hats can also protect against electrical shock.

## Eye and Face Protection Selection Chart

Source	Assessment of Hazard	Protection
<b>IMPACT</b> - Chipping, grinding, machining, drilling, chiseling, riveting, sanding, etc.	Flying fragments, objects, large chips, particles, sand, dirt, etc.	Spectacles with side protection, goggles, face shields. For severe exposure, use face shield over primary eye protection.
<b>CHEMICALS</b> - Acid and chemicals handling	Splash	Goggles, eyecup and cover types. For severe exposure, use face shield over primary eye protection.
	Irritating mists	Special-purpose goggles.
<b>DUST</b> - Woodworking, buffing, general dusty conditions.	Nuisance dust	Goggles, eyecup and cover types.
<b>LIGHT and/or RADIATION</b> Welding - electric arc	Optical radiation	Welding helmets or welding shields. Typical shades: 10-14
	Welding - gas	Welding goggles or welding face shield. Typical shades: gas welding 4-8, cutting 3-6, brazing 3-4.
Cutting, torch brazing, torch soldering.	Optical radiation	Spectacles or welding face shield. Typical shades: 1.5-3.
Glare	Poor Vision	Spectacles with shaded or special-purpose lenses, as suitable.

### Protective hats are made in the following types and classes:

- Type 1 - Helmets with a full brim.
- Type 2 - Brimless helmets with a peak extending forward from the crown.
- Class A - General service, limited voltage. Intended for protection against impact hazards. Used in mining, construction, and manufacturing.

- Class B - Utility service, high voltage. Used by electrical workers.
- Class C - Special service, no voltage protection. Designed for lightweight comfort and impact protection. Used in certain construction, manufacturing refineries, and where there is a possibility of bumping the head against a fixed object.

### 3. Foot Protection

There are many types and styles of protective footwear and it's important to realize that a particular job may require additional protection other than listed here. Footwear that meets established safety standards will have an American National Standards Institute (ANSI) label inside each shoe.

- Steel-Reinforced Safety Shoes.** These shoes are designed to protect feet from common machinery hazards such as falling or rolling objects, cuts, and punctures. The entire toe box and insole are reinforced with steel, and the instep is protected by steel, aluminum, or plastic materials. Safety shoes are also designed to insulate against temperature extremes and may be equipped with special soles to guard against slips, chemicals, and/or electrical hazards.
- Safety Boots.** Safety boots offer more protection when splash or spark hazards (chemicals, molten materials) are present:
  - When working with corrosives, caustics, cutting oils, and petroleum products, neoprene or nitrile boots are often required to prevent penetration.
  - Foundry or "Gaiter" style boots feature quick-release fasteners or elasticized insets to allow speedy removal should any hazardous substances get into the boot itself.
  - When working with electricity, special electrical hazard boots are available and are designed with no conductive materials other than the steel toe (which is properly insulated).

### 4. Hand Protection

Skin contact is a potential source of exposure to toxic materials; it is important that the proper steps be taken to prevent such contact. Most accidents involving hands and arms can be classified under four main hazard categories: chemicals, abrasions, cutting, and heat. There are gloves available that can protect workers from any of these individual hazards or any combination thereof.

Gloves should be replaced periodically, depending on frequency of use and permeability to the substance(s) handled. Gloves overly contaminated should be rinsed and then carefully removed after use.

Gloves should also be worn whenever it is necessary to handle rough or sharp-edged objects, and very hot or very cold materials. The type of glove materials to be used in these situations include leather, welder's gloves, aluminum-backed gloves, and other types of insulated glove materials.

Careful attention must be given to protecting your hands when working with tools and machinery. Power tools and machinery must have guards installed or incorporated into their design that prevent the hands from contacting the point of operation, power train, or other moving parts. To protect hands from injury due to contact with moving parts, it is important to:

- Ensure that guards are always in place and used.
- Always lock-out machines or tools and disconnect the power before making repairs.
- Treat a machine without a guard as inoperative; and
- Do not wear gloves around moving machinery, such as drill presses, mills, lathes, and grinders.

The following is a guide to the most common types of protective work gloves and the types of hazards they can guard against:

- a. **Disposable Gloves.** Disposable gloves, usually made of light-weight plastic, can help guard against mild irritants.
- b. **Fabric Gloves.** Made of cotton or fabric blends are generally used to improve grip when handling slippery objects. They also help insulate hands from mild heat or cold.
- c. **Leather Gloves.** These gloves are used to guard against injuries from sparks or scraping against rough surfaces. Lineman's leather gloves are used over a lineman's rubber glove (Class 0,1,2 or 3 ASTM D-120-77) to provide protection when working with electrical lines.
- d. **Kevlar and Metal Mesh Gloves.** These gloves are used to protect hands from accidental cuts and scratches. They are used most commonly by persons working with cutting tools or other sharp instruments.
- e. **Zetex and Aluminized Gloves.** Gloves made of aluminized fabric are designed to insulate hands from intense heat. These gloves are most commonly used by persons working with hot materials.
- f. **Chemical Resistance Gloves.** These gloves may be made of rubber, neoprene, polyvinyl alcohol or vinyl, etc. The gloves protect hands from corrosives, oils, and solvents. The following table is provided as a guide to the different types of glove materials and the chemicals they can be used against. When selecting chemical resistance gloves, be sure to consult the manufacturers' recommendations, especially if the gloved hand will be immersed in the chemical.

Many paints, varnishes, and other coatings, cleaning agents, etc., are mixtures of solvents. Many are skin and eye irritants, and some may be readily absorbed through the skin. Selection of the proper glove for protection is important. There are, however, essentially no permeation data available for solvent mixtures as little or no testing has been done. This means that glove selection must be a trial and error process. If a skin rash or dermatitis is observed, these may be possible causes:

- The wrong gloves may have been selected.
- Improper work practices are being followed.
- The employee is deficient in personal hygiene practices.
- Adequate washing facilities are absent.

## Glove Chart

Type	Advantages	Disadvantages	Use Against
Natural rubber (Latex)	Low cost, good physical properties, dexterity	Poor vs. oils, greases, organics. Frequently imported; may be poor quality. Can cause dermatitis and fatal toxic shock	Bases, alcohols, dilute water solutions; fair vs. aldehydes, ketones
Natural rubber blends	Low cost, dexterity better chemical resistance than natural rubber vs. some chemicals	Physical properties frequently inferior to natural rubber	Same as natural rubber
Polyvinyl chloride (PVC)	Low cost, very good physical properties, medium cost, medium chemical resistance	Plasticizers can be stripped; frequently imported may be poor quality	Strong acids and bases, salts, other water solutions, alcohols
Neoprene	Medium cost, medium chemical resistance, medium physical properties	NA	Oxidizing acids, anilines, phenol, glycol ethers
Nitrile	Low cost, excellent physical properties, dexterity	Poor vs. benzene, methylene chloride, trichloroethylene, many ketones	Oils, greases, aliphatic chemicals, xylene, perchloroethylene, trichloroethane; fair vs. toluene
Butyl	Speciality glove, polar organics	Expensive, poor vs. hydrocarbons, chlorinated solvents	Glycol ethers, ketones, esters
Polyvinyl alcohol (PVA)	Specialty glove, resists a very broad range of organics, good physical properties	Very expensive, water sensitive, poor vs. light alcohols	Aliphatics, aromatics, chlorinated solvents, ketones (except acetone), esters, ethers
Fluoro-elastomer (Viton)	Specialty glove, organic solvents	Extremely expensive, poor physical properties, poor vs. some ketones, esters, amines	Aromatics, chlorinated solvents, also aliphatics and alcohols
Norfoil (Silver Shield)	Excellent chemical resistance	Poor fit, easily punctures, poor grip, stiff	Use for Hazmat work

## Glove Type and Chemical Use

\*Limited service VG=Very Good G=Good F=Fair P=Poor (not recommended)

Chemical	Neoprene	Natural Latex or Rubber	Butyl	Nitrile Latex
*Acetaldehyde	VG	G	VG	G
Acetic acid	VG	VG	VG	VG
*Acetone	G	VG	VG	P
Ammonium hydroxide	VG	VG	VG	VG
*Amyl acetate	F	P	F	P
Aniline	G	F	F	P
*Benzaldehyde	F	F	G	G
*Benzene	F	F	F	P
Butyl acetate	G	F	F	P
Butyl alcohol	VG	VG	VG	VG
Carbon disulfide	F	F	F	F
*Carbon tetrachloride	F	P	P	G
Castor Oil	F	P	F	VG
*Chlorobenzene	F	P	F	P
*Chloroform	G	P	P	E
Chloronaphthalene	F	P	F	F
Chromic Acid (50%)	F	P	F	F
Citric acid (10%)	VG	VG	VG	VG
Cyclohexanol	G	F	G	VG
*Dibutyl phthalate	G	P	G	G
Diesel fuel	G	P	P	VG
Diisobutyl ketone	P	F	G	P
Dimethylformamide	F	F	G	G
Diethyl phthalate	G	P	F	VG
Dioxane	VG	G	G	G
Epoxy resins, dry	VG	VG	VG	VG
*Ethyl acetate	G	F	G	F
Ethyl alcohol	VG	VG	VG	VG
Ethyl ether	VG	G	VG	G
*Ethylene dichloride	F	P	F	P
Ethylene glycol	VG	VG	VG	VG
Formaldehyde	VG	VG	VG	VG

<b>Chemical</b>	<b>Neoprene</b>	<b>Natural Latex or Rubber</b>	<b>Butyl</b>	<b>Nitrile Latex</b>
Formic acid	VG	VG	VG	VG
Freon 11	G	P	F	G
Freon 12	G	P	F	G
Freon 21	G	P	F	G
Freon 22	G	P	F	G
*Furfural	G	G	G	G
Gasoline, leaded	G	P	F	VG
Gasoline, unleaded	G	P	F	VG
Glycerine	VG	VG	VG	VG
Hexane	F	P	P	G
Hydrochloric acid	VG	G	G	G
Hydrofluoric acid (48%)	VG	G	G	G
Hydrogen peroxide (30%)	G	G	G	G
Hydroquinone	G	G	G	F
Isooctane	F	P	P	VG
Isopropyl alcohol	VG	VG	VG	VG
Kerosene	VG	F	F	VG
Ketones	G	VG	VG	P
Lacquer thinners	G	F	F	P
Lactic acid (85%)	VG	VG	VG	VG
Lauric acid (36%)	VG	F	VG	VG
Lineoleic acid	VG	P	F	G
Linseed oil	VG	P	F	VG
Maleic acid	VG	VG	VG	VG
Methyl alcohol	VG	VG	VG	VG
Methylamine	F	F	G	G
Methyl bromide	G	F	G	F
*Methyl chloride	P	P	P	P
*Methyl ethyl ketone	G	G	VG	P
*Methyl isobutyl ketone	F	F	VG	P
Methyl methacrylate	G	G	VG	F
Monoethanolamine	VG	G	VG	VG
Morpholine	VG	VG	VG	G

Chemical	Neoprene	Natural Latex or Rubber	Butyl	Nitrile
Naphthalene	G	F	F	G
Naphthas, aromatic	G	P	P	G
*Nitric acid	G	F	F	F
Nitromethane (95.5%)	F	P	F	F
Nitropropane (95.5%)	F	P	F	F
Octyl alcohol	VG	VG	VG	VG
Oleic acid	VG	F	G	VG
Oxalic acid	VG	VG	VG	VG
Palmitic acid	VG	VG	VG	VG
Perchloric acid (60%)	VG	F	G	G
Perchloroethylene	F	P	P	G
Petroleum distillates (naphtha)	G	P	P	VG
Phenol	VG	F	G	F
Phosphoric acid	VG	G	VG	VG
Potassium hydroxide	VG	VG	VG	VG
Propyl acetate	G	F	G	F
Propyl alcohol	VG	VG	VG	VG
Propyl alcohol (iso)	VG	VG	VG	VG
Sodium hydroxide	VG	VG	VG	VG
Styrene	P	P	P	F
Stryene (100%)	P	P	P	F
Sulfuric acid	G	G	G	G
Tannic acid (65%)	VG	VG	VG	VG
Tetrahydrofuran	P	F	F	F
*Toluene	F	P	P	F
Toluene diisocyanate	F	G	G	F
*Trichloroethylene	F	F	P	G
Triethanolamine	VG	G	G	VG
Tung Oil	VG	P	F	VG
Turpentine	G	F	F	VG
*Xylene	P	P	P	F

**\*Limited service VG=Very Good G=Good F=Fair P=Poor (not recommended)**

**Appendix B**

**North Carolina Department of Agriculture and Consumer Services  
Hazard Assessment Certification Form**

Date:

Location:

Assessment Conducted By:

Specific Tasks Performed at this Location:

**Hazard Assessment and Selection of Personal Protective Equipment**

**I. Overhead Hazards -**

- Hazards to consider include:
- Suspended loads that could fall
- Overhead beams or loads that could be hit against
- Energized wires or equipment that could be hit against
- Employees who work at elevated site who could drop objects on others below
- Sharp objects or corners at head level

Hazards Identified:

**Head Protection**

Hard hat: (Circle One)

Yes

No

If yes, type:

**Type A** (impact and penetration resistance, plus low-voltage electrical insulation)

**Type B** (impact and penetration resistance plus high-voltage electrical insulation)

**Type C** (impact and penetration resistance)

## II. Eye and Face Hazards -

Hazards to consider include:

- Chemical splashes
- Dust
- Smoke and fumes
- Welding operations
- Lasers/optical radiation
- Bioaerosols
- Projectiles

Hazards Identified:

### Eye Protection

Safety glasses or goggles (Circle One)      Yes                      No

Face shield                                      Yes                      No

## III. Hand Hazards -

Hazards to consider include:

- Chemicals
- Sharp edges, splinters, etc.
- Temperature extremes

- Biological agents
- Exposed electrical wires
- Sharp tools, machine parts, etc.
- Material handling

Hazards Identified:

**Hand Protection**

Gloves (Circle One)

Yes

No

- Chemical resistant
- Temperature resistant
- Abrasion resistant
- Other (Explain)\_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**IV. Foot Hazards -**

Hazards to consider include:

- Heavy materials handled by employees
- Sharp edges or points (puncture risk)
- Exposed electrical wires
- Unusually slippery conditions
- Wet conditions
- Construction/demolition

Hazards Identified:

**Foot Protection**

Safety Shoes (Circle One)

Yes

No

Types:

- Toe protection
- Metatarsal protection
- Puncture resistant
- Electrical insulation
- Other (Explain) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**V. Other Identified Safety and/or Health Hazards:**

Hazard	Recommended Protection
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

I certify that the above inspection was performed to the best of my knowledge and ability, based on the hazards present on \_\_\_\_\_(date).

\_\_\_\_\_  
(Print Name)

\_\_\_\_\_  
(Written Signature)

## M e m o r a n d u m

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To: Division Directors

From: Chip Riedeberg  
Safety Director

Date: November 20, 1997

Subject: Policy and Procedures for Personal Protective Equipment (PPE)

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The attached is a **2nd draft** copy of a new safety policy and procedure which will enable our Department to comply with OSHA Standards 1910.132, 1910.133, 1910.134, 1910.135, 1910.136 and 1910.138. It documents, formalizes and expands previous information I have sent to you involving **PPE**.

Please review this policy with your staff and send any comments back to me by December 12. If I do not hear from you by then, I will assume you approve the policy. If more review time is needed, please let me know. Thank you.

CR:jm

Attachment

pc: Division Safety Representatives  
Mike Chapman, OSP

## MEMORANDUM

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To: Dr. John Atwell  
Harvey Clayton

From: Chip Riedeberg  
Safety Director

Date: December 9, 1997

Subject: Policy and Procedures for Personal Protective Equipment (PPE)

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Thank you for your comments. Please review pages 1, 7 and 13 as they reflect incorporation of some or all of your suggestions.

CR:jm  
Attachment