**CHAPTER 15**

Personal Protective Equipment Policy

POLICY

The Flight Department strives to provide a safe work environment through the use of methods and practices which isolate personnel from hazards and potential hazards. Where such isolation is impossible, impracticable, or inadequate, appropriate **Personal Protective Equipment** (PPE) must be used. This Policy applies to any hazards present which may produce injury or impairment of any part of the body through absorption or physical contact.

This Policy complies with the OSHA Personal Protective Equipment standards defined in 29 CFR 1910, Subpart I. Inhalation hazards are addressed separately in the Respiratory Protection Program. Noise hazards are addressed in the Hearing Conservation Program. (Note: Some states have adopted their own PPE plans, which may be more stringent than the Federal standards.)

GENERAL

Each Department facility must be assessed to identify hazards requiring the use of PPE. A written certification of workplace hazard assessment is required as defined in 1910.132. Supervisors must select, and require the use of, PPE that is suitable for protection from the identified hazards. Affected personnel, and their immediate supervisors, must be fitted for and instructed in the proper use and care of selected PPE. All personal protective equipment specifically required by this Policy shall be provided by the Department at no cost to the employee, unless the PPE is lost or intentionally damaged.

RESPONSIBILITY

The [*Position Title*] is responsible for the completion and updating of the facility Hazard Assessments annually, or as required.

The [P*osition Title*] are responsible for the maintenance of required training records.

The facility [*Position Title*] is responsible for ensuring that all affected maintenance personnel are properly trained in and adhere to the proper use and care of PPE.

All Department personnel who wear PPE are required to maintain the equipment in a sanitary and usable condition. The use of damaged or defective PPE is prohibited.

HAZAARD ASSESSMENT

The Hazard Assessment, contained in Appendix I has been performed to survey the need for PPE in Department workplaces. This document identifies procedures, situations, and conditions under which the indicated PPE must be used. Supervisors and affected employees must be vigilant for other circumstances that arise which may require the use of PPE. The information below is intended as a guide in this determination.

EYE AND FACE PROTECTION

The following positions and tasks/areas have been identified where a reasonable probability of eye injury can be prevented by eye protection:

|  |  |
| --- | --- |
| POSITION | TASKS/AREAS |
| Maintenance Technician | All shop and hangar areas when:   * Portable or fixed tools are in use for sawing, cutting, pressing, drilling, polishing, grinding, sanding, abrading, or soldering. * Compressed air is used for cleaning. * Paint spraying. * Servicing battery electrolyte. * Welding. * Hazardous chemicals are in use. |

Additionally, appropriate eye or face protection must be used when employees are exposed to any of the following:

* Flying particles (side protection is required).
* Liquid chemicals.
* Acids or caustic liquids.
* Harmful light radiation.
* Molten metal.
* Chemical gases or vapors.

Note: Additional information pertaining to chemical handling and PPE may be found in the MSDS sheets.

All eye and face protection used, whether owned by the employee or provided by the Department, must meet or exceed the requirements of ANSI Z87.1 - 1989, and have markings indicating so. Eye and face protection must also be marked to indicate the manufacturer. These requirements do not apply to non-protective eyewear worn in non-hazardous situations. Where an exposure to intense optical radiation exists, filter lenses must meet the requirements for shade designations in 1910.133(a)(5). Tinted and shaded lenses are not filter lenses unless they are marked or identified as such. Affected personnel who wear prescription corrective lenses must be provided with protective eyewear which either;

1. Incorporates the prescription.
2. May be worn over prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

Except for situations in which there are significant risks of ocular injury, individuals may be allowed to wear contact lenses in Department facilities. When the work environment entails exposures to chemicals, vapors, splashes, radiant or intense heat, molten metals, or a highly particulate atmosphere, contact lens use should be restricted accordingly. Restrictions on contact lens wear do not apply to office areas. Questions concerning the wearing of contact lenses in Department workplaces should be directed to the [*Position Title*] or the Company Medical Officer.

The three most appropriate types of eye and face protectors applicable to hazards incurred during Department operations are:

Spectacles: Protective devices intended to shield the wearer’s eyes from impact hazards and hot sparks. Must be used in conjunction with side protectors. Spectacles are primary protectors and may be used alone or in conjunction with other protectors.

Goggles: Protective devices intended to fit the face immediately surrounding the eyes in order to shield the eyes from impact, chemical splashing, high temps, and hot sparks. Goggles are primary protectors and may be used alone or in conjunction with other protectors.

Face shields: Protective devices intended to shield the wearer’s face, including the eyes, from impact, chemical splashes, hot sparks, and high temperatures. Face shields are secondary protectors only and may be used only in conjunction with primary protectors.

Note: Eyeglasses with the slide-on side shields are not authorized. Side shields must be fixed.

FOOT PROTECTION

It has been determined that foot protection [*is/ is not*] necessary in Department workplaces. It is the responsibility of the [*Position Title*] to reassess the workplace hazard situation as necessary, by identifying and evaluating new equipment and processes, reviewing accident records, and reevaluating the level of protection required to protect employees from the hazards.

HEAD PROTECTION

It has been determined that head protection [*is/is not*] necessary in Department workplaces as there is no overhead work performed. It is the responsibility of the [*Position Title*] to reassess the workplace hazard situation as necessary, by identifying and evaluating new equipment and processes, reviewing accident records, and reevaluating the level of protection required to protect employees from the hazards.

HAND PROTECTION

The following positions and tasks/areas have been identified where a reasonable probability of hand injury can be prevented by hand protection:

|  |  |
| --- | --- |
| POSITION | TASKS/AREAS |
| Maintenance Technician | All shop and hangar areas:   * Leather gloves must be worn when:   + Performing sheet metal work with non-powered tools.   + Welding.   Note: Gloves are NOT to be worn while operating a drill press or lathe.   * Chemical protective gloves must be worn when:   + Using solvents or degreasers.   + Servicing battery electrolyte.   + Handling lubricants or petroleum based products. |
|  |  |

Additionally, appropriate hand protection must be worn by personnel whose hands are exposed to hazards such as:

* Skin absorption of harmful substances.
* Severe cuts or lacerations.
* Severe abrasions.
* Punctures.
* Chemical burns.
* Thermal burns.
* Extreme cold.

Hand protection must be selected based on an evaluation of:

* The hazards identified.
* The duration of use.
* The type of task being performed.

Appropriate types of protective hand wear applicable to potential hazards incurred during Department operations are:

Chemically Resistant Gloves: Hand protection intended to prevent dermal contact with hazardous chemicals. Note that no single glove material is an absolute barrier against all chemicals. The performance criteria of the glove should be assessed relative to the chemical hazard anticipated.

Cut or Abrasion Resistant Gloves: Hand protection intended to prevent severe cuts, lacerations, or abrasions. Not to be used while operating drill press or lathe.

Heat or Cold Resistant Gloves: Hand protection intended to prevent thermal burns or frostbite.

Refer to Chapter 7 – Bloodborne Pathogens Exposure Control Plan, when an employee may be occupationally exposed to blood and potentially infectious material.

Appendix I - Hazard Assessment

CERTIFICATION OF HAZARD ASSSESSMENT

Date:

Completed by:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Job Area | Foot Protection | Eye Protection | Hearing Protection | Hand Protection | Head Protection | Resp. Protection |
| Maint. | Required or  Not Required |  |  |  |  |  |
| Pilot/Flight Attendant |  |  |  |  |  |  |
| Ops/Admin. |  |  |  |  |  |  |

TYPE OF HAZARD: BATTERY ACID

**Example:** Battery Acid, Electrolyte

**Health Hazards:**

Eyes - immediately damaging

Skin - rapidly damages skin and tissue

Inhalation - damaging to upper respiratory tract and lungs

Ingestion - damaging to digestive tract

**Body Parts Most Likely to be Affected:**

Respiratory system, eyes, skin, teeth

**How to Know You Are Exposed:**

Skin irritation, nose, mouth or eye irritation, visible cloud of fumes after chemical reaction

**Physical Hazards:**

Fumes are hazardous. Very dangerous if involved with fire. Incompatible with caustics and some metals.

**How to Protect Yourself:**

Safety glasses with side shields or chemical goggles along with face shield when handling. Protective clothing and acid gloves must be worn when handling concentrated acid. Special acid respirator should be worn if fumes are irritating. Do not add water to concentrated sulfuric acid; add acid to water. Use proper battery jump procedures to prevent battery explosions.

**What to do in an Emergency:**

In case of eye/skin contact, flush with water 15 minutes and seek medical attention.

In case of inhalation, remove to fresh air and seek medical attention.

In case of ingestion, dilute with milk or water and seek medical attention. Do not induce vomiting.

In case of spill/leak, if trained, use Acid Spill Clean-up Kit.

Any large or outdoor spill is an emergency.

TYPE OF HAZARD: BLEACH

**Example:** Sodium Hypochlorite, Household Bleach

**Health Hazards:**

Eyes/skin - irritation or corrosion

Inhalation - irritates mucous membranes and respiratory system

Ingestion - irritates and burns

**Body Parts Most Likely to be Affected:**

Eyes, skin, respiratory system

**How to Know You Are Exposed:**

Skin irritation, nose, mouth, or eye irritation

**Physical Hazards:**

Incompatible with acids, alcohols, and ammonia. Examples: phosphoric and sulfuric acid, drain cleaner, general cleaner, household ammonia.

**How to Protect Yourself:**

Read and follow label instructions. Wear safety glasses with side shields and rubber gloves. If handled in concentrated form, the above must be worn along with face shield or chemical goggles and protective clothing. Special chlorine respirator should be worn if fumes are irritating.

**What to do in an Emergency:**

In case of eye/skin contact, flush with water 15 minutes and seek medical attention.

In case of inhalation, remove from contaminated area and seek medical attention.

In case of ingestion, seek medical attention.

In case of small spill, flood area with large quantities of water.

Ventilate area.

Any large or outdoor spill is an emergency.

TYPE OF HAZARD: BROKEN GLASS

**Example:** Broken Glass Containers

**Health Hazards:**

Cuts and puncture wounds

**Body Parts Most Likely to be Affected:**

Feet, hands, arms

**Physical Hazards:**

Sharp edges can cause serious cuts. Broken glass on floor can cause fall and foot injuries.

**How to Protect Yourself:**

Wear gloves when handling broken glass or cleaning up. Clean up broken glass as soon as possible.

**What to do in an Emergency:**

Use direct pressure on cut to stop bleeding.

Seek medical attention.

TYPE OF HAZARD: CARBON DIOXIDE

**Example:** CO2 Portable Fire Extinguishers

**Warning:** You cannot detect dangerous levels of CO2 by smell.

**Health Hazards:**

Eyes - contact with carbon dioxide gas stream can cause corneal burns or frostbite of the eye.

Skin - carbon dioxide gas or liquid stream can cause frostbite. CO2 can form an acid when in contact with moisture.

**Body Parts Most Likely to be Affected:**

Skin, lungs, nervous system

**How to Know You Are Exposed:**

Skin exposure to stream of gas is noticeable. Respiratory exposure results in increase of rate and depth of respiration.

**Physical Hazards:**

Carbon dioxide can form an acid when in contact with moisture.

**How to Protect Yourself:**

Wear gloves, safety glasses, face shield and necessary protective clothing. Leave immediately any enclosed area if you begin having breathing problems.

**What to do in an Emergency:**

In case of eye/skin contact, flush with water and seek medical assistance as necessary.

In case of inhalation, remove to fresh air and seek medical attention. If you have a breathing problem, evacuate the area.

TYPE OF HAZARD: ACIDS

**Example:** Liquid Drain Cleaners

**Health Hazards:**

Eyes/skin - irritation, burns, corrosion

Inhalation - can damage nasal and respiratory tracts

Ingestion - can damage mouth, teeth, and digestive tract

**Body Parts Most Likely to be Affected:**

Respiratory system, eyes, skin, teeth

**How to Know You Are Exposed:**

Skin irritation, nose, mouth or eye irritation, visible cloud of fumes after chemical reaction

**Physical Hazards:**

Corrosive and reactive. Will corrode skin and many common materials. Will react dangerously with caustic or alkali materials such as general purpose cleaners and bleach.

**How to Protect Yourself:**

Read and follow label instructions. Wear safety glasses with side shields, rubber gloves, chemical goggles or face shield. If handled in full strength form, protective clothing is required. Special respirators can be used to protect against fumes.

**What to do in an Emergency:**

In case of eye/skin contact, flush with water 15 minutes and seek medical attention.

In case of inhalation, remove to fresh air and seek medical attention.

In case of ingestion, dilute with water and seek medical attention. Do not induce vomiting.

In case of spill/leak, if trained, use Acid Spill Clean-up Kit.

Any large or outdoor spill is an emergency.

TYPE OF HAZARD: BACK INJURIES FROM LIFTING

**Example:** Back Injuries from Improper Lifting or Overexertion

**Health Hazards:**

Muscle strains and damage to the back can occur.

**Body Parts Most Likely to be Affected:**

Back, shoulders, arms

**How to Protect Yourself:**

Follow safe lifting procedures:

* Keep your back straight.
* Lift with legs, not your back.
* Do not twist while lifting or carrying.
* Get help when necessary.
* Design heavy lifting out of job, when possible.

**What to do in an Emergency:**

Seek medical attention.

TYPE OF HAZARD: CAUSTICS & ALKALINES

**Example:** Most Heavy Duty Cleaners, Solid Drain Cleaners, Lye

**Health Hazards:**

Eyes/skin - irritation, corrosion, and burns

Inhalation - irritation and burns

Ingestion - burns and damage to digestive tract

**Body Parts Most Likely to be Affected:**

Skin, respiratory system, eyes

**How to Know You Are Exposed:**

Nose, mouth or eye irritation. Irritation from skin contact may not be immediate upon exposure, but materials are frequently slick when on the skin.

**Physical Hazards:**

Corrosive and reactive. Will corrode skin and many common materials. Will react dangerously with caustic or acid materials such as general purpose cleaners.

**How to Protect Yourself:**

Read and follow label instructions. Do not mix cleaners. If used in concentrated form, gloves, safety glasses with side shields, and protective clothing must be worn.

**What to do in an Emergency:**

In case of eye/skin contact, flush with water 15 minutes and seek medical attention.

In case of inhalation, remove to fresh air and seek medical attention.

In case of ingestion, dilute with water and seek medical attention.

In case of small spill/leak, dilute with large amounts of water.

Any large or outdoor spill is an emergency.

TYPE OF HAZARD: AVIATION JET FUEL

**Example:** Jet A

**Health Hazards:**

Eyes - irritation

Skin - repeated contact may cause irritation and rash

Inhalation - vapor or mist can be irritating and cause headache, dizziness, nausea and loss of coordination

Ingestion - chemical pneumonitis if aspirated into lungs

**Body Parts Most Likely to be Affected:**

Skin

**Physical Hazards:**

Combustible liquid, gives off flammable vapor when heated. May cause slip hazards.

**How to Protect Yourself:**

Has a mild characteristic odor. Avoid skin contact. Treat as a flammable liquid. Follow proper vehicle refueling procedures.

**What to do in an Emergency:**

Treat as a flammable liquid.

In case of eye contact - flush with water for 15 minutes, seek medical attention.

In case of skin contact - wash with soap and water.

In case of inhalation - remove to fresh air, seek medical attention.

Large or outdoor spill is an emergency.

TYPE OF HAZARD: ELECTRICAL SHOCK

**Example:** Electrically operated tools, electrical cabinets, damaged electrical cords.

**Warning:** Risk of electrical shock in wet areas is much greater than normal risk. All electrical equipment above 50 volts can cause dangerous shocks and death.

**Health Hazards:**

Injury or death

**Body Parts Most Likely to be Affected:**

Entire body

**How to Know You Are Exposed:**

Work with electrical hand tools, electrical maintenance or installation work, work around exposed wiring or energized parts.

**Physical Hazards:**

Voltages above 50 volts are considered dangerous for shocks. High voltage can cause severe burns and damage.

**How to Protect Yourself:**

Unless “qualified,” do not open electrical cabinets with exposed electrical parts. Inspect all electrical cords before use. Report electrical wire problems. Always use Ground Fault Circuit Interrupter (GFCI) outlets or equipment in wet areas and confined spaces. Always inspect portable equipment and extension cords before use.

**What to do in an Emergency:**

If a fellow employee is being shocked, be careful not to become a victim yourself. Cut off electricity and/or use a non-conductive item, such as a wooden broom, to disengage the victim from the circuit. Call for help and administer CPR if victim has stopped breathing.

TYPE OF HAZARD: AIRCRAFT TUG/FORKLIFT TRAFFIC

**Example:** Forklift Operations in Hangar

**Health Hazards:**

Exhaust from propane forklifts can be toxic. Exhaust can be deadly in an unventilated room or confined space.

**Body Parts Most Likely to be Affected:**

Respiratory system

**Physical Hazards:**

Forklift drivers often have obstructed vision. Forklifts may leak hydraulic fluid and cause slip hazards. Forklifts can slide on wet floors.

**How to Protect Yourself:**

Never walk between an operating forklift and a close fixed object. Never walk behind a forklift placing or picking up a load. Be on the lookout for hydraulic fluid leaks. Forklift horns must be sounded at blind spots or corners.

**What to do in an Emergency:**

Seek medical attention.

TYPE OF HAZARD: GASOLINE

**Example:** Automobile Fuel - Lead Free

**Health Hazards:**

Eyes - irritation or damage

Skin - may cause irritation, dermatitis or blistering

Inhalation - overexposure can cause bronchopneumonia or pulmonary edema

May contain Benzene, which is potentially an occupational carcinogen

**Body Parts Most Likely to be Affected:**

Skin and respiratory system

**How to Know You Are Exposed:**

Vapors in air are recognizable due to characteristic odor.

**Physical Hazards:**

Flammable liquid, flammable vapors are heavier than air

**How to Protect Yourself:**

Avoid vapors. Keep ignition sources away from vapors. Follow proper procedures when fueling. Avoid skin contact. Use approved storage containers.

**What to do in an Emergency:**

Danger - vapors are flammable.

In case of skin contact - remove contaminated clothing, wash affected area with soap and water.

In case of eye contact - flush with water for 15 minutes, seek medical attention.

In case of ingestion - do not induce vomiting, seek medical attention.

In case of inhalation - remove to fresh air, seek medical attention.

In case of spill or leak - danger, flammable vapors. Eliminate sources of ignition, if safe to do so. Call for emergency services. If safe to do so, stop flow of liquid from entering drains or sewers.

TYPE OF HAZARD: HYDRAULIC FLUID

**Example:** Aircraft Hydraulic System Fluid

**Health Hazards:**

Eyes/skin - irritation

Inhalation/ingestion - irritation

**Body Parts Most Likely to be Affected:**

Back, arm or hand injuries due to fall

**How to Know You Are Exposed:**

Hydraulic fluid is normally noticeable as a red liquid if spilled or leaked on skin or floor.

**Physical Hazards:**

Combustible liquid. Can be ignited when heated or sprayed as a fine mist. Incompatible with oxidizers such as pure oxygen. Slippery conditions result from leaks and spills.

**How to Protect Yourself:**

Clean up leaks immediately. Keep absorbent on spills which are chronic problems. Use gloves or wash from skin as soon as possible after contact. Use absorbent to control spills.

**What to do in an Emergency:**

Treat as a combustible liquid.

In case of eye contact - flush with water for 15 minutes and seek medical attention.

In case of skin contact - wash with soap and water.

In case of inhalation - remove to fresh air and seek medical attention.

In case of ingestion - seek medical attention.

Outdoor spills can be an emergency.

TYPE OF HAZARD: LUBRICANTS/PETROLEUM OIL

**Example:** Motor Oil, Petroleum Lubricants

**Health Hazards:**

Eyes/skin - irritation

Inhalation - possible damage to nasal passage

Ingestion - stomach irritation

**Body Parts Most Likely to be Affected:**

Back, arm or hand injuries due to fall

**How to Know You Are Exposed:**

Lubricants and oils are normally noticeable on floor or skin when sprayed.

**Physical Hazards:**

May be combustible. Incompatible with oxidizers such as pure oxygen. Slippery conditions result from leaks and spills.

**How to Protect Yourself:**

Read and follow label instructions and warnings. Clean up spills and leaks immediately. Keep absorbent on spills which are chronic problems. Use gloves or wash from skin as soon as possible after contact. Use absorbent to control spills.

**What to do in an Emergency:**

Treat as a combustible liquid.

In case of eye contact - flush with water for 15 minutes and seek medical attention.

In case of skin contact - wash with soap and water.

In case of inhalation - remove to fresh air and seek medical attention.

In case of ingestion - drink two glasses of water and seek medical attention.

In case of spill - use absorbent material to contain.

Outdoor spills can be an emergency.

TYPE OF HAZARD: PROPANE

**Example:** Propane, LPG

**Health Hazards:**

Eyes - not significant unless contact with liquid

Skin - liquid contact can cause frostbite

Inhalation - simple asphyxiant

**Body Parts Most Likely to be Affected:**

Hands (freeze burn)

**How to Know You Are Exposed:**

Propane has characteristic odor. Liquid exposure gives sensation of freeze “burn”.

**Physical Hazards:**

Flammable gas. Keep away from oxidizers and sources of ignition. Vapors are heavier than air. Cylinders are very heavy.

**How to Protect Yourself:**

Keep sources of ignition away from any leaks/spills. Get help when changing cylinders.

**What to do in an Emergency:**

In case of eye/skin contact - flush with water.

Incase of inhalation - remove to fresh air.

In case of spill/leak - stay out of flow of gas. Eliminate ignition sources and ventilate. Evacuate area to prevent contact with liquid or vapor cloud. For fire, stop flow of gas, if possible.

Any large leak is an emergency.

TYPE OF HAZARD: SOLVENTS

**Example:** Parts Cleaner, Some Degreasers or “Spot Cleaners”, Spray Parts Cleaner

**Health Hazards:**

Eyes - irritation

Skin contact - dries skin by removing natural oils

Inhalation - headaches, dizziness and nausea. Some solvent vapors are toxic in small amounts. Read label information.

Ingestion - harmful if swallowed.

**Body Parts Most Likely to be Affected:**

Skin, eyes, respiratory system, nervous system

**How to Know You Are Exposed:**

Most have a characteristic odor or skin contact is obvious.

**Physical Hazards:**

Avoid heat, sparks and open flame. Incompatible with alkalis, caustics and oxidizing agents such as cleaners.

**How to Protect Yourself:**

Read and follow label instructions and warnings. Avoid heat, sparks and open flame. Use with good area ventilation. Special respirator must be worn if area of use is not well ventilated.

**What to do in an Emergency:**

In case of eye contact - flush with water for 15 minutes.

In case of skin contact - wash and apply skin lotion.

In case of inhalation - remove to fresh air and seek medical attention.

In case of ingestion - do not induce vomiting and get medical attention.

In case of spill/leak - catch and collect in retaining area or with absorbent.

Spills of toxic or flammable solvents can be an emergency.

Spills outdoors can be an emergency.

TYPE OF HAZARD: WELDING ARCS AND CUTTING TORCH FLAMES

**Example:** Arcs Produced by Welding and Bright Flames Produced by Cutting Torches

**Health Hazards:**

Fumes can be harmful. Some metals such as galvanized metal produce very toxic fumes when heated.

**Body Parts Most Likely to be Affected:**

Respiratory system, eyes, face, hands, arms

**How to Know You Are Exposed:**

Arcs and flames are visible. Fumes are normally noticeable.

**Physical Hazards:**

Heat - burns can result from flame, arc, metal or slag contact.

Light - intense light radiation from electrical arcs and cutting torch flames can cause eye injury. Ultraviolet and infrared radiation can cause burns and eye injury. Eye irritation and injuries may not become evident for several hours after exposure.

**How to Protect Yourself:**

Follow proper welding procedures. Wear proper welding or burning protective clothing and eye protection. If you are in the general area of welding, wear safety glasses. Do not look directly at area or flame without proper welding eye protection.

**What to do in an Emergency:**

Seek medical attention.

TYPE OF HAZARD: WET FLOORS

**Example:** Hangar Floors May Be Wet and Slippery

**Health Hazards:**

None

**Body Parts Most Likely to be Affected:**

Back, arm, and hand injury due to falls.

**Physical Hazards:**

Slips and falls are more likely on wet floors. Vehicles can lose traction on wet floors.

**How to Protect Yourself:**

Wear shoes with slip resistant soles. Slow down if driving a vehicle on a wet floor. Get good footing when lifting. Keep floors clean and dry when possible.

**What to do in an Emergency:**

Seek medical attention.

EXAMPLE FORMAT:

