

# FACT SHEET

## Personal Protective Equipment (PPE)

Personal protective equipment (PPE) protects workers from chemical, biological, physical, mechanical and radiological hazards by guarding potential routes of exposure, including skin contact, mucous membranes, inhalation or ingestion. Although PPE is considered a last line of defense, use is mandated by the University of Utah for personnel in hazardous environments (e.g., research laboratories, machine shops, or vivaria). Consult with Occupational and Environmental Safety (OEHS) about PPE selection and use to ensure adequate protection.

### Proper Attire

Full-length pants (or equivalent) and solid, closed shoes (no exposed skin between the ankle and toes) are required for hazardous environments. Machine shops and other high-hazard areas may require specific attire, such as steel-toe boots. Tie back long hair and avoid loose-fitting clothing. Remove dangling jewelry, watches, bracelets and rings. Natural fibers with low flammability are recommended. Flame-resistant clothing is required with live electrical components, welding, plasma cutting or open flames (e.g., soldering, brazing).

### Types of PPE

#### Hand and Body Protection

One type of **glove** will not protect against all hazards. For chemical hazards, consult the safety data sheet (SDS) and manufacturer glove selection criteria. For physical hazards, choose gloves with appropriate protection (e.g., insulated, cut resistant). Double gloving is required for certain hazards and recommended for working with biological agents. Dexterity should be considered for operations that necessitate grip and material handling.

A **lab coat** is required in all wet laboratories, and any areas handling chemicals or biological materials. Flame-resistant lab coats are required when handling flammable, pyrophoric, water-reactive or explosivesubstances. Fabric lab coats are preferred when handling corrosives. Barrier lab coats are preferred when handling biohazards. Back-tying disposable gowns are required in vivaria and at BSL2+ or above. Aprons can protect against chemical or physical hazards in shops.

#### Face Protection

**Safety glasses** (for physical hazards) or **goggles** (for splashes/sprays and overhead work) must be ANSI approved. Wavelength-specific **laser safety glasses** are required for working with lasers. Shaded welding helmets are required for welding. **Face shields** protect from splashes, sprays or spatters and must be either rated against impact or worn with safety glasses/goggles. **Surgical masks** provide splash, spray or spatter protection for the nose and mouth.

#### Respiratory Protection

**Respirators** (filtering face piece/disposable, half-face, full-face, PAPR) are a last line of defense against airborne hazards. Users must be fit-tested tested and medically cleared annually and after surgery or weight gain/loss affecting face shape. More information about selection and use of respiratory protection is available from OEHS.

#### Hearing Protection

Earplugs or ear muffs provide protection when working around noisy equipment and must be ANSI approved. These can be used separately or, in some situations, combined for extra protection.

**Other PPE to protect the head (e.g., hard hat, bouffant cap) or feet (e.g., shoe covers, rubber boots) may be required based on the area's risk assessment.**

#### Donning and Doffing PPE

Put PPE on before entering hazardous environments or handling hazardous materials

Remove PPE before re-entering public-access areas to avoid spreading hazardous materials or exposing others

Avoid touching bare skin when removing potentially contaminated PPE

Wash hands after removing gloves and other PPE

Separate items that contact bare skin from those that contact gloved hands

Follow site-specific and standard operating procedures

#### Laundry and Disposal

Disposable PPE (e.g., gloves) contaminated with hazardous substances must be disposed of as hazardous chemical waste. Disposable PPE contaminated with biological materials or recombinant/ synthetic nucleic acid molecules must be disposed of as medical waste.

Reusable PPE (e.g., lab coats) must be contained if contaminated, spot decontaminated (if possible) and cleaned by a licensed cleaner (i.e., not taken home for laundering). Lab coats may be laundered using the University of Utah Hospital Linen Services or an approved laundry program.

Adapted from UCLA EH&S Guidance



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