PPE SELECTION - A BASIC GUIDE

This document is to be used as a quick guide in the selection of appropriate personal protective equipment (PPE). PPE selection should be based on risk assessment, which includes evaluation of the hazard and the procedure used, in consultation with the supervisor and safety officer. Where permeation by a chemical could present a health risk, consult the chemical Safety Data Sheet and a PPE materials selection guide.

Applicable PPE	Example	Type/Characteristics	Applications
Light latex, vinyl or nitrile gloves		**Disposable latex** Powdered or un-powdered	Working with biological hazards (human blood, body fluids, tissues, bloodborne pathogens, specimens), BSL1, BSL2, BSL2+, BSL3
		**Disposable nitrile** Puncture, abrasion resistant, protection from splash hazards	Working with biological hazards and chemical splash hazards
		**Disposable vinyl** Economical, durable, similar to latex	Working with biological hazards, BSL1, BSL2, BSL2+, BSL3
Light chemical resistant gloves		**Natural rubber latex** Chemical resistant, liquid-proof	Working with small volumes of corrosive liquids, organic solvents, flammable compounds
Light to heavy chemical resistant gloves		**Nitrile** Chemical resistant, good puncture, cut, and abrasion resistance	Using apparatus under pressure, air or water reactive chemicals
Heavy chemical resistant gloves		**Butyl** High permeation resistance to most chemicals	Working with large volumes of organic solvents; small to large volumes of dangerous solvents, acutely toxic or hazardous materials
		**Viton® II** High permeation resistance to most chemicals	Same as butyl gloves, plus hazardous material spills
		**Silver shield** Extra chemical and mechanical protection	Same as butyl and Viton II gloves, added mechanical protection, hazardous material spills
Insulated gloves		**Terrycloth autoclave** Heat resistant	Working with hot liquids and equipment, open flames, water bath, oil bath
		**Cryogen** Water resistant or water proof, protection against ultra-cold temperatures	Handling cryogenic liquids
Wire mesh gloves		**Wire mesh** Cut resistant	Working with live animals and exposed to potential cuts

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Chemical resistant aprons		**Rubber-coated wash** Chemical splash protection, good abrasion resistance	Working with apparatus under pressure, air or water reactive chemicals, large volumes of corrosive liquids
		**Neoprene w/ sleeves** Chemical resistant, tear resistant	Working with water or air reactive chemicals, large volumes of corrosive liquids, small to large volumes of acutely toxic corrosives
		**Butyl/Silver shield w/ sleeves** Extra chemical and mechanical protection	Working with large volumes of organic solvents; small to large volumes of dangerous solvents, acutely toxic or hazardous materials. Added mechanical protection, hazardous material spills
Lab coats		**Knee length** Protects skin and clothing from dirt, inks, non-hazardous chemicals; preferably high-collared and cuffed	General use; Chemical, Biological, Radiation, and Physical Hazards
		**Flame resistant** Flame resistant (e.g. Nomex or flame-resistant cotton)	Working with water or air reactive chemicals, large volumes of organic solvents, potentially explosive chemicals
Gowns		**Disposable** Protects skin and clothing from dirt, dyes, debris, or non-hazardous chemicals	General use; Chemical, Biological, Radiation, and Physical Hazards. Working with live animals
		**Flame resistant disposable** Flame resistant. Protects skin and clothing from dirt, dyes, debris, or non-hazardous chemicals	Working with water or air reactive chemicals, large volumes of organic solvents, potentially explosive chemicals. Working with live animals
		**Tyvek** High tear resistance, protection from particulates	Working with biohazards with potential for exposure to airborne transmissible disease
Cap		**Bouffant** Protection for hygienic work environments; protection from dirt, dust	Working with biohazards, especially in animal facilities

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Footwear		**Disposable shoe covers** Protection for hygienic work environments; protection from dirt, dust. Adjustable fit, non-skid	Working with biohazards, especially in animal facilities
		**Slip resistant** Slip resistant sole	Working in areas where liquids, slippery conditions are present
		**Slip resistant boot** Slip resistant sole. High permeation resistance to wet conditions	Working in environments where large amounts of water are present (e.g., cage washing)
Safety glasses		**Glasses** Polycarbonate lens, side shields for eye protection. Meets ANSI and OSHA specifications	Working with chemical, biological, or physical hazards
Safety goggles		**General** Tight fitting, protects eyes from impact, spray, paint, chemicals, flying chips, dust particles, polycarbonate lens, indirect ventilation, meets ANSI and OSHA specifications	Working with large volumes of corrosive liquids, small to large volumes of acutely toxic corrosives. Working with large volumes of organic solvents, acutely toxic or hazardous chemicals, apparatus under pressure, air or water reactive chemicals
		**Laser / Radiological** Shaded goggles; optical density based on beam and/or UV parameters	Working with Class 3 or Class 4 lasers; UV radiation
Shields		**Face shield** Chemical and/or UV resistant face shield	Working with mild acids, caustics, aromatic hydrocarbons, methylene chloride; splash hazard; air or water reactive or potentially explosive chemicals; UV radiological hazards
		**Safety shield** Acrylic, weighted shield, three sided, benchtop shield, frosted edges	Working with chemical splash, beta radiation, exposure to Bloodborne pathogens

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Respirators (Note: Except for surgical masks, using a respirator requires prior enrollment in a respiratory protection program, including occupational health evaluation and fit testing)		**Surgical masks** Protects against large droplets and splashes	Working with live animals; working with infectious material in BSL-2+ level lab
		**N-95** Protects against dusts, fumes, mists, microorganisms	Working with live animals or infectious materials with known airborne transmissible disease (e.g. Tuberculosis); dusty environments
		**Half face** Purifies air: protects against variety of particulates, vapors, dust, mists, fumes; depends on filter cartridge used	Working with live animals or infectious materials with known airborne transmissible disease; dusty environments; chemical vapors; particulates
		**Full face** Same as half face, with greater protection factor; eye protection, mucous membranes, and face; depends on filter cartridge used	Working with live animals or infectious materials with known airborne transmissible disease; dusty environments; chemical vapors; particulates
		**PAPR** Air supplying respirator; delivers steady supply of filtered air with loose fitting hoods	Working in BSL3 or dusty environments; chemical vapors, particulates; used when full-face or half–face respirator doesn't fit individual, or presence of facial hair
Earplugs		**Disposable** Polyvinyl Chloride (PVC) or Polyurethane foam, one time use design (no cleaning), one size fits all, light weight, low cost, blocks all sound	Working in areas where sound (dBa) average levels over 85, EHS can assist in assessments
		**Reusable** Silicone, tapered fit, reusable (needs cleaning), corded or uncorded, light weight, more durable than disposable	Working in areas where sound (dBa) average levels over 85, EHS can assist in assessments
		**Hearing Band** Ear plugs connected to a flexible band that can be worn around the neck when not needed	Working in areas where sound (dBa) average levels over 85, EHS can assist in assessments