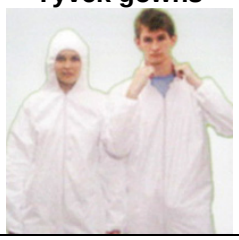
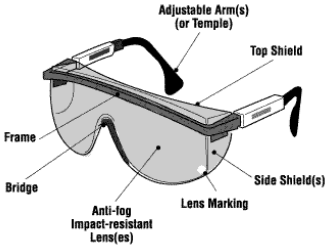
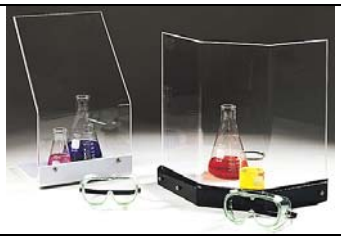
501 Westwood Plaza, 4th Floor • Los Angeles, CA 90095
Phone: 310-825-5689 • Fax: 310-825-7076 • www.ehs.ucla.edu

This document is to be used as a supplement to the Laboratory Hazard Assessment Tool in the selection of appropriate PPE. PPE application should be based on risk assessment, which includes evaluation of the hazard and the procedure used, in consultation with the supervisor and safety officer.

Applicable PPE	Specific type (example)	Characteristics	Applications
Light latex, vinyl or nitrile gloves	**Disposable latex gloves** 	Powdered or un-powdered	Working with biological hazards (known or potentially known infectious materials including work with animals)
	Disposable nitrile gloves 	Puncture, abrasion resistant, protection from splash hazards	Working with biological hazards and chemical splash hazards
	Disposable vinyl gloves 	Economical, durable, similar to latex	Working with biological hazards
Light chemical resistant gloves	**Natural rubber latex** 	Chemical resistant, liquid-proof	Working with small volumes of corrosive liquids, organic solvents, flammable organic compounds
Light to heavy chemical resistant gloves	**Nitrile gloves** 	Chemical resistant, good puncture, cut, and abrasion resistance	Apparatus under pressure, air or water reactive chemicals
Heavy chemical resistant gloves	**Butyl gloves** 	High permeation resistance to most chemicals	Large volumes of organic solvents, small to large volumes of dangerous solvents, acutely toxic or hazardous materials
	Viton® II gloves 	High permeation resistance to most chemicals	Same as butyl gloves, plus hazardous material spills

Applicable PPE	Specific type (example)	Characteristics	Applications
Heavy chemical resistant gloves (cont.)	**Butyl/Silver Shield gloves and apron** 	Extra chemical and mechanical protection	Same as butyl and Viton II gloves, added mechanical protection, hazardous material spills
Insulated gloves	**Terrycloth autoclave gloves** 	Heat resistant	Working with hot liquids and equipment, open flames, water bath, oil bath
	Cryogen gloves 	Water resistant or water proof, protection against ultra-cold temperatures	Cryogenic liquids handling
Wire mesh gloves		Cut resistant	Working with live animals
Chemical resistant apron	**Rubber-coated wash apron** 	Chemical splash protection, good abrasion resistance	Working with apparatus under pressure, air or water reactive chemicals, large volumes of corrosive liquids
	Neoprene apron and sleeves 	Chemical resistant, tear resistant; splash protection	Water or air reactive chemicals, large volumes of corrosive liquids, small to large volumes of acutely toxic corrosives

Applicable PPE	Specific type (example)	Characteristics	Applications
Lab Coats	**Knee length lab coats** 	Protects skin and clothing from dirt, inks, non-hazardous chemicals, biohazards without aerosol exposure	General use; Chemical, Biological, Radiation, and Physical Hazards
	Flame resistant lab coat 	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 gowns** 	Clothing and skin protection	Working with biohazards
	Tyvek gowns 	High tear resistance, protection from particulates	Working with biohazards with potential for exposure to airborne transmissible disease
Cap	**Bouffant caps** 	Economical protection for hygienic work environments; protection from dirt, dust	Working with biohazards, especially in animal facilities
Shoe Cover	**Disposable shoe covers** 	Protection from dirt, dust; maintenance of hygienic work environments. Adjustable fit, non-skid soles	Working with biohazards, especially in animal facilities

Applicable PPE	Specific type (example)	Characteristics	Applications
Safety glasses		Polycarbonate lens, side shields for eye protection; meets ANSI and OSHA specifications	Working with chemical, biological, radiation, physical hazards; laboratory work
Goggles	**Tight fitting goggles** 	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 Goggles 	Appropriately shaded goggles; optical density based on beam parameters	Working with Class 3 or Class 4 lasers
Face shield		Chemical resistant face shield	For use with mild acids, caustics, aromatic hydrocarbons, methylene chloride; splash hazard; air or water reactive or potentially explosive chemicals
Safety shield		Acrylic, weighted shield, three sided, benchtop shield, frosted edges	Protects from chemical splash, beta radiation, exposure to bloodborne pathogens

Applicable PPE	Specific type (example)	Characteristics	Applications
Respirators	**Surgical masks** 	Used for bacterial filtration	Working with live animals; working with infectious material with potential aerosol exposure
	N-95 	Protects against dusts, fumes, mists, microorganisms	Working with live animals or infectious materials with known airborne transmissible disease; dusty environments
	Half face 	Air purifying respirator 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, but with greater protection factor, and greater protection of eyes 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 BSL – 3 environments; working in dusty environments; chemical vapors, particulates; used when full- face or half –face respirator doesn't fit individual

CHEMICAL	Butyl Rubber	Chlorinated Polyethylene	Vitron/ Neoprene	Natural Rubber	Neoprene	Nitrile + Polyvinyl Chloride	Nitrile	Polyethylene	Polyvinyl Alcohol	Polyvinyl Chloride	Vitron	Butyl neoprene	Other Materials*
Acetaldehyde	RR	NN		NN	NN	NN	NN	NN	nn	NN	NN		Yes
Acetic acid, glacial	R	rr		nn	RR	NN	RR	nn	n	NN	rr		Yes
Acetone	RR	NN		NN	NN	nn	NN	NN	NN	NN	NN		Yes
Acetonitrile	RR	rr	nn	NN	NN		NN	NN	rr	NN	rr	rr	Yes
Ammonium hydroxide	R	r		rr	rr	NN	rr	NN	n	NN	r		Yes
Amyl alcohol	rr		r	NN	RR	NN	nn	nn	rr	NN	rr	r	Yes
Aniline	RR	r	rr	NN	NN	NN	nn	NN	RR	NN	NN	rr	Yes
Benzaldehyde	rr	n	n	nn	nn	n	nn	NN	RR	N	n	r	Yes
Benzene	NN	nn	rr	NN	NN	NN	NN	NN	NN	NN	nn	rr	Yes
Butyl acetate	rr	r		NN	NN	nn	NN	NN	rr	NN	nn		Yes
Butyl alcohol	R	r		nn	RR	nn	RR	RR	nn	nn	r		Yes
Butane	n			N	R	r	n			N	r		Yes
Butyraldehyde	nn		n	R	nn	r	r		nn	R	nn	r	Yes
Calcium hypochlorite	r			R	R	r	r			R			Yes
Carbon disulfide	NN	NN		N	N	n	NN	NN	RR	N	RR		Yes
Carbon Tetrachloride	N	nn	r	NN	NN	NN	N	NN	RR	NN	rr	n	Yes
Chloroacetone		r		n	n	R	n			N		r	Yes
Chloroform	N	NN	r	NN	NN	n	NN	NN	RR	NN	rr	n	Yes
Chromic acid	n	r		NN	N	RR	N	rr		RR	r		Yes
Cyclohexane	N	r	r	NN	NN	n	RR	NN	nn	NN	RR	n	Yes
Dibenzyl ether	r		n	N	R	r	r			R		r	Yes
Diethanolamine	rr			n	rr	n	nn			r	rr		Yes
Diethyl ether	NN	r	n	NN	NN	nn	NN	NN	RR	nn	NN	n	Yes
Dimethyl sulfoxide		rr		RR	RR	rr	nn	rr		NN			Yes
Ethyl acetate	n	nn	n	NN	NN	nn	NN	NN	n	nn	n	n	Yes
Ethyl alcohol									rr				Yes
Ethylene glycol	R	r	r	RR	rr	RR	RR	RR	rr	nn	r	r	Yes
Ethylene trichloride	NN	nn		NN	NN	NN	NN	NN	NN	NN	NN	n	Yes
Formaldehyde, 37%	RR	rr	r	NN	NN	nn	NN	RR	n	NN	RR	r	Yes
Formic acied, 90%	R	r		R	R	R	r	NN		R	n		Yes
Glycerol	r		r	r	R	r	R			r		r	Yes
Hexane	NN	rr		NN	NN	NN	NN	NN	RR	NN	RR		Yes
Hydrobromic acid	r			r	R	r				R			Yes
Hydrochloric acid, conc.	nn	rr	rr	rr	RR	RR	rr			NN	rr	rr	Yes
Hydrofluoric acid			r	RR	rr	NN	nn	rr	n	nn	r	r	Yes

Hydrogen peroxide	nn	rr	r	r	R	r	n			nn	r	r	Yes
Isobutyl alcohol	rr		r	nn	NN	NN	RR	NN	n	NN	rr	r	Yes
Methylamine	r			nn	rr		rr		n	rr			Yes
Methyl alcohol	rr	rr	rr	NN	NN	nn	NN	nn	NN	NN	nn	rr	Yes
Methyl chloride	n			N	n	n	n	n		N			Yes
Methylene chloride	NN	nn	r	NN	NN	nn	NN	NN	nn	NN	nn	n	Yes
Methyl ethyl ketone		RR	nn	NN	NN	NN	NN	NN	NN	nn	NN	NN	Yes
Naphthalene	N	rr	r	N	nn	NN	rr	NN	rr	NN	r	n	Yes
Nitric acid	n	nn		nn	n	NN	nn	nn	n	NN	rr		Yes
Perchloric acid	r		r	N	rr	rr	rr	rr		rr	r	r	Yes
													Yes
Phenol	R	nn		NN	nn	n	NN	rr	nn	NN	n		Yes
Phosphoric acid, conc	r			rr	rr	rr	rr	rr	n	rr			Yes
Potassium hydroxide	r			R	R	r	R			R	n		Yes
Pyridine	r			NN	NN		NN	rr			n		Yes
Sodium Hydroxide	n	rr		R	R	n	R	rr		rr			Yes
													Yes
Sulfuric acid	n	RR	rr	N	rr	nn	n	rr		NN	rr	rr	Yes
Toluene	NN	r	rr	NN	NN	nn	NN	NN	NN	NN	nn		Yes
Trichloroethylene	NN	nn		NN	NN	NN	NN	NN	NN	NN	nn		Yes
Triethanoiamine	r	r	r	N	R	rr	R	rr		rr	n	r	Yes
Xylene	n	n	r	NN	NN	NN	NN	NN	RR	NN	rr	n	Yes

Source: Guidelines for the selection of Chemical Protective Clothing. 1987. American Conference of Governmental Industrial Hygienists, Inc. Cincinnati, Ohio

Legend

RR= recommended based on strong data
rr=recommended based on data
R=recommended based on judgement
NN= not recommended based on strong data
nn= not recommended based on data
n= not recommended based on judgement

*other materials are recommended. Consult the Source or vendor's glove selection charts.