

Personal Protective Equipment - *Hands*

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Laboratory hygiene

- ▶ Never eat, drink or smoke in a laboratory
- ▶ Never apply cosmetics
- ▶ Never touch your face, mouth or eyes
- ▶ Never use mobiles, suck pens or chew pencils
- ▶ Always wash your hands before you leave and especially before eating



Common Types of PPE

- Head
- Eyes
- Face
- Hands
- Feet
- Body
- Hearing
- Respiratory



Hand PPE

- ❖ Needed when work presents the potential of causing hand injury from physical, chemical, or radiation agents.
- ❖ Important for purity/quality of work
- ❖ Examples of hazards:
 - ❖ Absorbing harmful substances
 - ❖ Sharp objects capable of causing cuts, abrasions, or punctures
 - ❖ Chemical or thermal burns
 - ❖ Electrical work
 - ❖ High/Low temperatures

Types of Hand Protection

- Chemical Resistant - (check MSDS) or compatibility charts such as the one found on EHS webpage:



PSU EHS - Mozilla Firefox

http://www.ehs.psu.edu/occhealth/gloves.cfm

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Occupational Health & Safety

- AED (Automated External Defibrillator)
- Asbestos
- Biological Safety
- Chemical Safety
- Chemical Waste Pickup Request
- Driver Safety
- Ergonomics
- Fire Protection & Prevention
- Hearing Conservation
- Indoor Air Quality
- Industrial Hygiene
- Laboratory Safety
- Laser Safety
- Lead-Based Paint
- Lighting

Glove Selection Chart

The times listed below are average breakthrough times for each type of glove, i.e. the minimum time that it will take for a given chemical compound to break through the glove material.

Chemical Name	Nitrile	PVC	Neoprene	Butyl	Comments
Acetic Acid, Glacial	4.5 hr	3 hr	7 hr	NR	
Acetone	NR	NR	10 min	> 17 hr	
Acetonitrile	30 min	NR	30 min	> 8 hr	
Ammonium Hydroxide, conc.	> 8 hr	4 hr	> 6 hr	NR	
Aniline	72 min	3 hr	35 min	> 8 hr	
Benzene	9 min	13 min	16 min	31 min	
Carbon Disulfide	20 min	NR	NR	< 4min	
Carbon Tetrachloride	2.5 hr	25 min	31 min	NR	
Chloroform	NR	10 min	12 min	NR	
Chromic Acid, 50%	4 hr	NR	NR	NR	
Dichloroethane	16 min	NR	33 min	2 hr	
Dimethyl Formamide	35 min	NR	10 min	> 8 hr	
Ethanol	> 8 hr	1 hr	1.5 hr	NR	
Ethyl Ether	64 min	14 min	10 min	8 min	

- Puncture / cut / abrasion Resistant
- Those with a latex allergy can use vinyl, nitrile, etc. based on the compatibility charts or MSDSs.

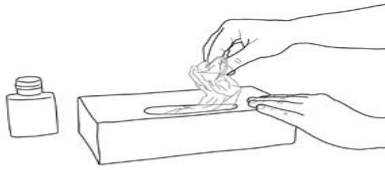
Types of Hand Protection

- Voltage Rated
- Temperature Resistant
- Infectious Agent / Biohazard Resistant – Latex, Vinyl, Nitrile, etc)

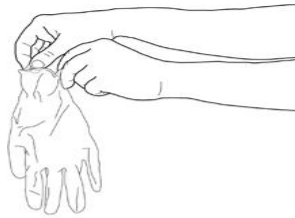


Glove Donning and Doffing

I. HOW TO DON GLOVES:



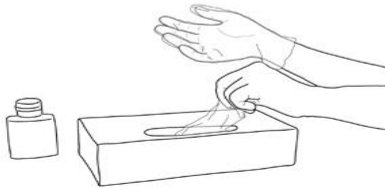
1. Take out a glove from its original box



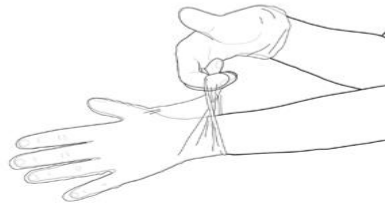
2. Touch only a restricted surface of the glove corresponding to the wrist (at the top edge of the cuff)



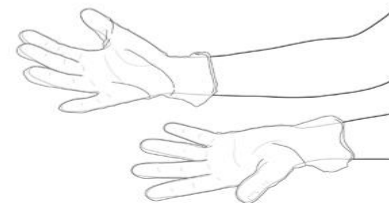
3. Don the first glove



4. Take the second glove with the bare hand and touch only a restricted surface of glove corresponding to the wrist

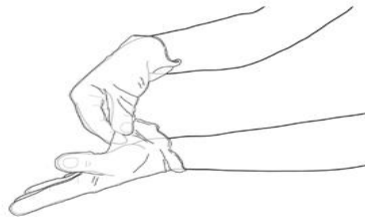


5. To avoid touching the skin of the forearm with the gloved hand, turn the external surface of the glove to be donned on the folded fingers of the gloved hand, thus permitting to glove the second hand

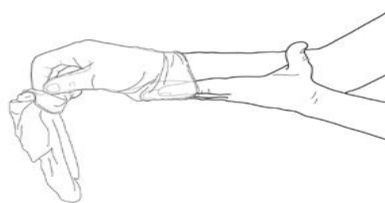


6. Once gloved, hands should not touch anything else that is not defined by indications and conditions for glove use

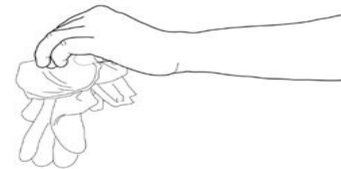
II. HOW TO REMOVE GLOVES:



1. Pinch one glove at the wrist level to remove it, without touching the skin of the forearm, and peel away from the hand, thus allowing the glove to turn inside out



2. Hold the removed glove in the gloved hand and slide the fingers of the ungloved hand inside between the glove and the wrist. Remove the second glove by rolling it down the hand and fold into the first glove



3. Discard the removed gloves

Care and Maintenance

- ❑ Check prior to each use for cuts, cracks or discoloration.
- ❑ Replace as necessary.
- ❑ Discard single use gloves after use. (Latex, Nitrile, Vinyl, etc)
- ❑ Store in a clean area.

*If you walk on snow you cannot
hide your footprints.*



Thank you