

Appendix C

Chemical Compatible Gloves

No one glove is protective against all chemicals. A glove may protect against one specific chemical, but not another. Glove material will also deteriorate over time. When choosing a glove, consider the following to protect yourself against chemical exposures:

- Chemical to be used: Consult the compatibility charts to ensure that the gloves will protect you.
- Dexterity needed: The thicker the glove, typically the better the chemical protection, as the glove will be more resistant to physical damage, like tears and cracks, but it will be harder to handle and feel the work.
- Extent of the protection required: Determine if a wrist length glove provides adequate protection or if a glove that extends further up the arm is required.
- Type of work to be done: gloves are specific to the task. Ensure the correct glove is chosen to avoid injuries. Examples: A nylon cryogenic glove will be damaged if a hot item is handled, whereas a “hot mitt” will not protect the wearer when liquid nitrogen is used, as it may be too porous.

Rules for glove use in the labs:

- Wear the correct gloves when needed.
- Wear gloves no longer than 2 hours.
- Wash hands once gloves have been removed.
- Disposable gloves must be discarded once removed. Do not save for future use.
- Dispose of gloves into the proper container (biologically contaminated gloves will need to go into a red bag while other chemically contaminated gloves may not.)
- Non-disposable/reusable gloves must be washed and dried, as needed, and then inspected for tears and holes prior to reuse.
- Remove gloves before touching personal items, such as phones, computers, pens and one’s skin. Remember the “designated area rule” where “science” does not mix with personal space (one’s desk or lunch space). Gloves used in research are considered “science”.
- Do not wear gloves out of the lab. If gloves are needed to transport anything, wear one glove to handle the transported item. The free hand is then used to touch door knobs, elevator buttons, etc. If you are wearing gloves to “protect your sample from you” and are in the hall, no one else understands this and will be concerned about the items you have contaminated with those gloves.
- If for any reason a glove fails and chemicals come into contact with skin, consider it an exposure and seek medical attention.

Glove Compatibility Charts

The following is a link to a company providing gloves that may be used at CSUEB.

<https://www.ansellguardianpartner.com/chemical/home#>

Available on sites like this are glove compatibility or chemical resistance charts. Please use these charts to ensure the gloves being used to handle chemicals are providing adequate protection. It is important to note that not all chemicals will be listed on these charts. It is also essential to note that two similar gloves supplied by two separate manufacturers may not provide the same level of protection to a specific chemical. Therefore, it will be necessary to consult the manufacturer's specific compatibility chart for the brand of gloves being used.

Understanding terms used in glove compatibility charts:

- Breakthrough time: Time it takes for the chemical to travel through the glove material. This is recorded at a detectable level on the inside surface of the glove.
- Permeation Rate: Time it takes for the chemical to pass through the glove once breakthrough has occurred. This involves the absorption of the chemical into the glove material, migration of the chemical through the material, and then desorption once it is inside the glove.
- Degradation rating: This is the physical change that will happen to the glove material as it is affected by the chemical. This includes, but is not limited to swelling, shrinking, hardening, cracking, etc. of the glove material.

Compatibility charts rating systems will vary by the manufacturer's design of their chart. Many use a color code, where red = bad, yellow = not recommended, green = good, or some variation of this scheme. A letter code may also be used, such as E = excellent, G = Good, P = poor, NR = Not Recommended. Any combination of these schemes may be used, so please understand the chart before making a decision on the glove to be used.

Ansell's 8th edition Chemical Resistance Guide is found at <https://www.ansellpro.com/>.