Energy Technologies Area

SAFETY ALERT

November 15, 2022

Proper Use of Chemical Gloves

Hazards: Chemical burns, Chemical absorption

It is important that the proper type of glove is worn when handling hazardous chemicals. Failure to follow proper precautions when wearing chemical gloves can result in a serious injury due to exposure to a hazardous chemical.

For further information on LBNL personal protective equipment requirements, go to the LBL Chemical Hygiene and Safety Plan: PUB-3000 Chapter 45 Work Process I PPE.

The type of chemical glove used should be carefully considered prior to performing work. Some important things to consider:

- No glove material is resistant to all chemicals. Some chemicals will travel through or permeate the glove in a few seconds while other chemicals may take a few minutes or days. Always consult the Safety Data Sheet (SDS) for the chemical being used. You can also obtain chemical compatibility information from the glove compatibility charts available from the glove manufacturer or in the LBNL Chemical Hygiene and Safety Plan.
- The nitrile examination gloves currently used in most ETA lab areas only provide hand protection for incidental contact from spills, splashes or overspray of chemicals. Once a chemical comes in contact with the glove it can quickly permeate. The gloves should be immediately removed and replaced. Nitrile exam gloves are disposable and should not be washed or reused.
- For activities such as handling highly contaminated materials or submerging gloves into liquids, extended contact chemical gloves should be used. Extended contact gloves are reusable and made of a thicker material resulting in a longer permeation time. Extended contact gloves should be washed after removal and stored in a location away from chemicals or contaminants.
- Always inspect chemical gloves prior to use. Ensure there are no holes, tears, or visible deterioration. If you suspect they are damaged, do not use and immediately dispose.
- Always wear BOTH gloves.

- Do not wear sharp objects such as jewelry that can cause a glove puncture.
- Always remove chemical gloves before touching common objects such as doorknobs, phones, equipment controls, and computers. This prevents the spread of contamination.
- Always wash your hands after using chemicals.

Here is general information on types of common chemical gloves available. For example glove selection guides, go to: Ansell Chemical Glove Resistance Guide .

Glove Material	Type of Use	Chemical Compatibility
Nitrile	Incidental Contact- Exam Gloves Extended Contact- Thick >8 mil Gloves	Good as a general use glove. Compatible with many solvents, oils, and some acids/bases.
Latex (Natural Rubber)	Incidental Contact	Good for use with water-based materials. Poor protection with solvents. Latex can cause skin reactions.
Butyl Rubber	Extended Contact	Good for use with ketones and esters. Poor protection with aliphatic, aromatic, and halogenated hydrocarbons.
Neoprene	Extended Contact	Good for use with acids, bases, peroxides, and alcohols. Poor protection with aromatic and halogenated hydrocarbons.
Viton	Extended Contact	Good for use with aliphatic, aromatic, and halogenated hydrocarbons. Poor protection with aldehydes, ketones, esters, and amines.

If you have any questions regarding chemical glove use, always consult first with your Area Safety Lead or Supervisor. You can also contact the ETA Safety Manager, Ron Scholtz X8137.