Personal Protective Equipment – Gloves*

One of the most important safety choices every day is glove selection. With the current supply chain being challenged you may need to find alternatives for your PPE that is required to prevent injuries or for infection control but based on the hazard encountered. Protective gloves shall be worn when handling infectious materials, radioactive materials, chemicals, and harmful temperature extremes. They are also used when needed for Industrial applications such as painting and custodial tasks. You should wear sturdier gloves such as leather for handling broken glassware, inserting glass tubes into rubber stoppers, and similar operations where you do not need protection from chemicals. **Never reuse disposable gloves.**

Chemical Protection

Consult this chart for an overview of commonly used glove types and their general advantages and disadvantages:

Glove material	Intended use	Advantages and disadvantages
Latex (natural rubber)	Incidental contact	• Good for biological and water-based materials • Poor for organic solvents • Little chemical protection • Hard to detect puncture holes • Can cause or trigger latex allergies
Kevlar	Specific Use	• Good for cut resistance* • Good for flame resistance* • Good for reusability • No chemical protection
Nitrile	Incidental contact	• Good for solvents, oils, greases, and some acids and bases • Clear indication of tears and breaks • Good alternative for those with latex allergies
Butyl rubber	Extended contact	• Good for ketones and esters • Poor for gasoline and aliphatic, aromatic, and halogenated hydrocarbons
Neoprene	Extended contact	• Good for acids, bases, alcohols, fuels, peroxides, hydrocarbons, and phenols

		• Poor for halogenated and aromatic hydrocarbons
Norfoil	Extended contact	• Good for most hazardous chemicals • Poor fit (Note: Dexterity can be partially regained by using a heavier weight Nitrile glove over the Norfoil glove. Also, 4H brand gloves tend to provide better dexterity than the Silver Shield brand.)
Viton	Extended contact	• Good for chlorinated and aromatic solvents • Good resistance to cuts and abrasions • Poor for ketones
Polyvinyl chloride (PVC)	Specific use	• Good for acids, bases, oils, fats, peroxides, and amines • Good resistance to abrasions • Poor for most organic solvents
Polyvinyl alcohol (PVA)	Specific use	• Good for aromatic and chlorinated solvents • Poor for water-based solutions

For any questions regarding gloves compatibility or layering contact the Chemical Safety Officer (760-750-4502) for guidance.

Additional Glove Chemical Compatibility and Permeation Charts	
OSHA (US Dept. of Energy)	Chemical Resistance Selection chart for Protective Gloves (Table 4)
Grainger	Glove, Clothing and Material Compatibility Resource
Ansell	Chemical Application & Recommendation Guide

Kimberly-Clark Professional	Chemical Resistance Guide
North by Honeywell	Chemical Resistance Guide
VWR Safety	Chemical Resistance Guide

*UCSD Gloves reference

Industrial Protection*

- **Leather gloves** protect against sparks, moderate heat, blows, chips and rough objects.
- **Aluminized gloves** provide reflective and insulating protection against heat and require an insert made of synthetic materials to protect against heat and cold.
- **Aramid fiber gloves** protect against heat and cold, are cut- and abrasive-resistant and wear well.
- **Synthetic gloves** of various materials offer protection against heat and cold, are cut- and abrasive-resistant and may withstand some diluted acids. These materials do not stand up against alkalis and solvents.
- **Fabric gloves** protect against dirt, slivers, chafing and abrasions. They do not provide sufficient protection for use with rough, sharp or heavy materials. Adding a plastic coating will strengthen some fabric gloves.
- **Coated fabric gloves** are normally made from cotton flannel with napping on one side. By coating the unnapped side with plastic, fabric gloves are transformed into general-purpose hand protection offering slip-resistant qualities. These gloves are used for tasks ranging from handling bricks and wire to chemical laboratory containers. When selecting gloves to protect against chemical exposure hazards, always check with the manufacturer or review the manufacturer's product literature to determine the gloves' effectiveness against specific workplace chemicals and conditions.

*OSHA reference