

Exhibit 4: Glove Selection Guide

Use this checklist to choose the appropriate type of protective glove for the specific task.



What to do	How to do it
<p>1. Identify the hazards of the material(s) with which you will be working</p>	<p>A. Base selection of glove type and material on the type of exposure and nature of the hazard. Some chemicals can easily penetrate gloves that work very well for other chemicals.</p> <p>Consider these factors:</p> <ul style="list-style-type: none"> • Chemical type • Temperature extremes, cryogenic properties • Physical hazards (sharps, piercing objects) • pH • Toxicity • Infectious potential of biological hazards <p>B. Read the Safety Data Sheets (SDSs) for each chemical involved.</p>
<p>2. Determine if you'll have incidental or extended contact with the hazardous materials</p>	<p>A. Incidental contact (little or no direct contact with the hazardous material) includes these situations:</p> <ul style="list-style-type: none"> • Accidental spills or splashes • Accidental overspray from a dispensing device • Handling infectious agents that require barrier protection • To prevent contamination of materials during handling <p>If you will have incidental contact, go to Step 3.</p> <p>B. Extended contact includes these situations:</p> <ul style="list-style-type: none"> • Handling highly contaminated materials • Submerging hands in a chemical or other hazardous substance • Need for physical protection from temperature extremes or sharp/piercing objects <p>If you will have extended contact, go to Step 4.</p>






<p>3. For incidental contact, follow these selection guidelines</p>	<p>A. Disposable, surgical-type gloves are appropriate for incidental contact.</p> <p>B. Nitrile gloves are preferred over latex because of their chemical resistance, their tendency to visibly rip when punctured, and to prevent possible latex allergies.</p> <p>See the Glove Selection Chart below for advantages and disadvantages of commonly used surgical-type gloves.</p> <p>C. Disposable glove usage:</p> <ul style="list-style-type: none">• Check for rips or punctures before use.• Remove and replace gloves immediately with new ones when a chemical spills or splashes on them.• Never wash or reuse disposable gloves.• Always remove gloves before touching common objects such as doorknobs, phones, or elevator buttons.
<p>4. For extended contact, follow these guidelines</p>	<p>A. More substantial gloves are required for extended use.</p> <p>Norfoil gloves are recommended for highly toxic materials and materials that are absorbed through the skin.</p> <p>See the Glove Selection Chart below for advantages and disadvantages of commonly used gloves for extended contact.</p> <p>B. Reusable glove usage: Many gloves intended for extended contact are reusable.</p> <ul style="list-style-type: none">• Check the gloves for:<ul style="list-style-type: none">– Rips or punctures before and after each use,– Prior contamination, and– Signs of degradation (change in color or texture).• Replace gloves as soon as signs of degradation appear.• Wash after removal and air dry.• Consider wearing inner surgical gloves for extra protection.





<p>5. Dispose of used and damaged gloves according to whether or not they are contaminated with a hazardous material</p>	<p>Follow the appropriate guidelines below:</p> <ul style="list-style-type: none"> • No contamination: Place in regular trash. • Chemical contamination: Ensure you review the SDS for proper disposal. Gloves with many types of chemical contamination can be disposed of in regular trash. • Biohazardous materials: Gloves contaminated with biohazards must be disposed as biohazardous waste. This is normally a red bag labeled as biohazard. • ALWAYS wash your hands after removing gloves.
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Glove Comparison Chart

Consult this chart for an overview of commonly used glove types and their general advantages and disadvantages. Note: These photos are examples. Glove colors and appearances will vary. Many other models are commercially available in each glove category.

Glove material	Intended use	Advantages and disadvantages	Example Photos
<p>Latex (natural rubber)</p>	<p>Incidental contact</p>	<p>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. Note: Please ensure people are notified you are using latex gloves due to allergies. We recommend that you stay away from latex gloves for responding to medical emergencies.</p>	
<p>Nitrile</p>	<p>Incidental contact (disposable exam glove) Extended contact (thicker reusable glove)</p>	<p>Excellent general use glove. Good for solvents, oils, greases, and some acids and bases. Clear indication of tears and breaks. Good alternative for those with latex allergies.</p>	

<p>Butyl rubber</p>	<p>Extended contact</p>	<p>Good for ketones and esters. Poor for gasoline and aliphatic, aromatic, and halogenated hydrocarbons.</p>	
<p>Neoprene</p>	<p>Extended contact</p>	<p>Good for acids, bases, alcohols, fuels, peroxides, hydrocarbons, and phenols. Poor for halogenated and aromatic hydrocarbons. Good for most hazardous chemicals.</p>	
<p>Norfoil</p>	<p>Extended contact</p>	<p>Good for most hazardous chemicals. Poor fit (Note: Dexterity can be partially regained by using a heavier weight Nitrile glove over the Norfoil/Silver Shield glove.)</p>	
<p>Viton</p>	<p>Extended contact</p>	<p>Good for chlorinated and aromatic solvents. Good resistance to cuts and abrasions. Poor for ketones. Expensive.</p>	
<p>Polyvinyl chloride (PVC)</p>	<p>Specific use</p>	<p>Good for acids, bases, oils, fats, peroxides, and amines. Good resistance to abrasions. Poor for most organic solvents.</p>	

<p>Polyvinyl alcohol (PVA)</p>	<p>Specific use</p>	<p>Good for aromatic and chlorinated solvents. Poor for water-based solutions.</p>	
<p>Stainless steel Kevlar Leather</p>	<p>Specific use</p>	<p>Cut-resistant gloves.</p> <p>Sleeves are also available to provide protection to wrists and forearms.</p> <p>If potential for biological or chemical contamination: wear appropriate disposable gloves on top of your cut-resistant gloves and discard after use.</p> <p>Split leather cow hide leather gloves are best for handling large (40g to 100g) bats to prevent bites.</p> <p>Deer skin leather gloves are recommended for handling small to midsize bats (4g - 40g) to prevent bites.</p> <p>Goat skin leather gloves are recommended for small bats (5g – 15g) to prevent bites.</p>	  

Cryogenic Resistant Material Leather	Specific use	For use with cryogenic materials. Designed to prevent frostbite. Note: Never dip gloves directly into liquid nitrogen.	
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Additional Resources

Use these additional resources for information on specific chemicals or glove materials. Listing and linking to the websites below is not an endorsement of any particular product or company, but instead is intended to provide additional technical information.

Chemical compatibility and permeation charts:

- [AnsellPro Chemical Glove Resistance Guide](#)
- U.S. [Environmental Protection Agency Guidance for Pesticide Use](#)

Vendor websites:

- [Fisher Scientific](#)
- [Grainger](#)
- [Kimberly-Clark Professional](#)
- [MAPA Professional](#)
- [Best Glove Selection Tool](#)
- [VWR](#)

Latex information:

- [NIOSH Alert: Preventing Allergic Reactions to Natural Latex Rubber in the Workplace \(June 1997\)](#)
- [NIOSH's Latex Allergy Prevention Guide](#)

Other types of personal protective equipment (PPE):

- [Cole-Palmer Instrument Co. Chemical Compatibility Search Page](#)
- [NIOSH Recommendations for Chemical Protective Clothing](#)

Bat handling:

[Puncture-Resistance of Gloves for Handling Bats - Patricia W. Freeman University of Nebraska-Lincoln and Cliff A. Lemen University of Nebraska-Lincoln](#)