



**Learning about
Contamination Control - Part 4:
Choosing the Right
Cleanroom Glove**



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Choosing the Right Cleanroom Glove

Introduction

Choosing the appropriate cleanroom glove is as much about protecting operating staff as it is safeguarding the task you are performing.

It is recommended that you select gloves from the category that best matches the activity that your employees will be undertaking for the majority of their working day. In addition, the chemicals used, potential allergies, glove change frequency, and the type of work carried out need to be considered to maximize efficiency in a critical environment.

Once the main reason for wearing the gloves is established, further glove characteristics such as the required tactility, dexterity, antistatic properties etc. can be considered.

What you should ask yourself?

1. Are chemical hazards present?
2. Are abrasions and punctures from sharp objects a problem?
3. Is a secure grip vital to the application?
4. Is dexterity important?
5. Which characteristic is more important: protection or dexterity?
6. Are the gloves properly sized for individual workers?

Published standards

EN (ISO) 374 protective gloves against dangerous chemicals and micro-organisms consists of the following:

- BS EN ISO 374-1:2016 Terminology and performance requirements for chemical risks.
- BS EN 374-2:2014 Determination of resistance to penetration.
- BS EN 374-4:2013 Determination of resistance to degradation by chemicals.
- BS EN ISO 374-5:2016 Terminology and performance requirements for micro-organisms risks.
- BS EN 16523-1:2015 Determination of material resistance to permeation by chemicals. Permeation by liquid chemical under conditions of continuous contact.

Glove Guide

Nitrile Gloves

Nitrile gloves are the most popular choice, offering superior abrasion resistance and excellent biohazard protection. They have good dexterity properties and a micro-roughened finish located on the surface of the glove, which gives a non-slip grip whether gloves are wet or dry, making them incredibly versatile. Nitrile gloves are used across a variety of industries, although they are commonly referred to as “Medical Examination Gloves.”



Suitable for a range of applications, including:

- An alternative solution where latex allergies are a consideration
- Protecting people from blood-borne pathogens and other environmental contamination
- Medical and dental professionals
- Operators in laboratory settings

Latex Gloves

Latex gloves are durable, flexible and comfortable to wear. They offer higher chemical resistance than synthetic alternatives. As a natural material, their biodegradable and environmental qualities are also more sustainable compared to synthetic derivatives.



Latex gloves cover a wide range of applications, including examination, diagnostics, and therapeutic procedures, especially within the medical industry. However, with their high tensile strength and puncture resistance properties, they can also be used in manufacturing environments.

Suitable for a range of applications, including:

- Medical, dental and veterinary settings
- Childcare and senior care
- Food processing and catering
- Hairdressing and cosmetic procedures
- Janitorial and sanitation
- Automotive
- Manufacturing
- Forensics

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Vinyl Gloves

Vinyl gloves are a cost-effective alternative to natural and nitrile materials. The main advantage to vinyl gloves is that they are latex-free and therefore do not cause any skin allergies or reactions. They offer standard protection when handling most chemicals. The vinyl glove's naturally high level of static resistance helps when handling static sensitive equipment within ESD protected areas.

Features and benefits of vinyl gloves include:

- Latex-free
- A looser fit, allowing for easy donning
- An economical option
- Suitable for short-term, low-risk use
- Have antistatic properties
- Are ideal for use with non-hazardous materials



Finger Cots

Finger cots are used to cover one or more fingers when a full glove is not necessary. Finger cots can be used in conjunction with other gloves to provide extra protection for finger tips in industrial applications.

Features and benefits of finger cots are:

- Used to cover scratches and open wounds
- Allows full dexterity for the user
- An economical option
- Lightweight and easy to store



ESD Heat Resistant Gloves

ESD heat resistant gloves are suitable for use within EPAs. They allow for greater dexterity, making handling smaller items easier than other heat resistant gloves. These gloves have an ISO 6 classification and are suitable for use in EPAs where they provide excellent protection against high temperatures.

Features and benefits of ESD heat resistant gloves:

- Ideal for use in EPA's where the user is handling ESD sensitive materials
- Designed for a wide range of temperatures
- The material resists solvents, fluxes, abrasions, and cuts
- Non-shedding
- Cleanroom packaged in ESD-safe packaging



Silicone Heat Resistant Gloves

Silicone heat resistant gloves are heavy-duty and cleanroom compatible. Although less dexterous, they can endure higher levels of heat and are classified for use in ISO 4 cleanrooms.

Features and benefits of silicone heat resistant gloves:

- Ideal for use in cleanrooms where high protection is needed from both heat and contamination
- Sustainable up to maximum 400°C
- Superior elasticity
- Outer waterproof coating to glove
- Suitable for ISO4 upwards
- Highly protective for both clean environment and user



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Nylon Glove Liners

Nylon glove liners reduce perspiration and minimize skin irritation caused by frequent gloving, especially with gloves manufactured from materials such as latex and PVC. Glove liners are, therefore, a great benefit to all users, but essential for those with sensitive skin. Glove liners consist of seamless construction to increase comfort and are reusable. Glove liners are ideal for use in controlled environments, laboratories, and manufacturing environments.

We provide two styles of liners: half finger and full finger.

- The Half Finger Liner allows for complex finger-work, however, it leaves the wearer vulnerable to chemicals and hazardous objects, such as those with sharp/abrasive surfaces.
- The Full Finger Liners can be worn to prevent fingerprints on circuit boards, lenses, optics and other critical surfaces. However, a disadvantage is that they leave the wearer less dexterous than those using the half finger liners, meaning complex tasks are harder to complete.



For our full range of gloves, follow the QR code to the left. For more information please talk to our expert team.

Glove Features

Tacky vs smooth

Tacky and smooth textures are commonly found within latex and nitrile gloves.

A tacky texture means the glove stays firmly on the users hand whilst allowing for a secure grip. These gloves are less likely to slip off during use, however, they are harder to don and have a higher risk of tearing during the donning process.

Smooth textured gloves provide low-friction, allowing for easy donning and doffing. This can speed up the gowning process and enable a smoother work flow. The main negative is that they are more likely to slip.

Smooth grip vs textured grip

Smooth grip provides a low-friction surface offering excellent tactile sensitivity and fine dexterity, making them suitable for tasks that require precise handling.

Textured grip gloves enhance the ability to grip and manipulate objects, making them ideal for tasks that involve handling wet or slippery objects, or working in environments where a strong grip is required.

Thickness

Thickness is very important to consider depending on what chemicals you may be working with. As a rule, the thicker the glove the more resistant to chemicals it will be.

Cuff length

Cuff length is an important feature to consider when working with chemicals which could harm the user if the chemicals come into contact with the skin. Gloves with a longer cuff can be easily placed over the sleeves with minimal effort, allowing no skin to be exposed..

The most notable style of cuff is a beaded cuff which provides a secure and reliable fit around the wrist, minimizing the risk of the glove slipping or rolling down and easier donning and doffing, reducing the potential for contamination during glove changes.



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Tensile strength

When choosing a glove, checking the tensile strength (tear strength) is important. While gloves with a higher tensile strength may be more expensive, they have increased longevity and are less likely to tear during the donning process, reducing waste.

Packaging

Depending on the classification of the cleanroom, it is important to consider how your chosen glove is packaged.

Boxed packaging - ISO 6+

Conventional boxed packaging may be appropriate in a general medical or dental setting, but not permitted in cleanrooms due to the cardboard material.

Boxed gloves are easily accessible, ambidextrous and easy to don making this kind of glove very user-friendly. Some boxes have a smart pull design to simplify removing gloves when box quantity is low.

If gloves are packaged in cardboard dispensers and need to be used within a critical environment they should be decanted in a suitable prep area and placed into cleanroom polyester bags.

Polyester packaging - ISO 5+

Polyester packaging is used within the critical environment because of its low linting properties.

This packaging, similar to boxed glove packaging, commonly contains ambidextrous gloves yet the polyester packaging keeps their quality and cleanliness controlled.

The flat packaging of polyester bags allows for the gloves to be stored away easily compared to boxed glove packaging.

Sterile packaging - ISO 3+

Sterile gloves are double bagged and packed in individual hand specific pairs (labeled left and right). They are then rebagged in an irradiated cleanroom bag and then placed within a final sterile bag.

Sterile gloves are packed in their sterile packaging within a cleanroom for ultimate guarantee of cleanliness and are typically made from materials that are resistant to microbial ingress. Sterile packaging often includes additional features, such as sterilization indicators or tamper-evident seals to provide assurance of the gloves' sterility.

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