

This is a resource created by our Conservation Development Officer, Helena Jaeschke, providing guidance on wearing gloves when working with museum collections. If you have any specific questions regarding your collection, please [get in touch](#).

In this resource we will look at:

- When we should wear gloves
- Why we should wear gloves
- What type of gloves to choose
- Where to buy gloves
- How to dispose of gloves
- Whether gloves can be recycled

When do I need to wear gloves?

If we're handling an object, we really should wear gloves. Every time we touch an object with our bare skin we leave deposits of:

- Water
- Salts, including sodium chloride
- Hygroscopic compounds, such as potassium lactate
- Urea
- Ammonia
- Oils
- Sugars
- Skin particles
- Enzymes
- Traces of medications
- Mercury (if we have mercury amalgam tooth fillings)

This complicated mixture is left on the surface of the objects and can cause rapid corrosion and pitting of metals and deterioration of organic materials such as textiles and paper. The hygroscopic compounds absorb moisture from the atmosphere, keeping the surface sticky so that dust bonds to it, transforming the fingerprints into dirty marks.

Cont.

Top tips:

- Wash and dry your hands thoroughly before and after wearing gloves.
- Have a waste bag ready before you start so you can take your gloves off and drop them straight in.
- Never blow inside a pair of gloves to open them out. Stretch the wrist open and then close it tightly, trapping air. Push this down towards the fingers to open out the glove.
- If you are wearing gloves for long periods, use a barrier cream beforehand or a moisturizing hand cream afterwards to replenish your skin's natural protection.
- If you have very sweaty hands (hyperhidrosis) you can wear a tight-fitting pair of cotton or bamboo gloves with a larger pair of impermeable gloves over the top.
- If you are not using both hands to hold the object – for example when writing notes about an object, you can use an ungloved hand to hold a pencil or magnifying glass. Keep one hand gloved to touch or steady the object.

Cont. The mixture of skin particles, oils, dust and sugars forms a rich food source for moulds which grow on the surface, secreting further chemical mixtures which attack the surface of the object. The moulds also attract pests. Finally, the enzymes may also contribute to the breakdown of parchment, skin and leather.

We know that even invisible fingerprints can be detected with powders and UV light; we've seen this in countless detective stories and we understand why criminals wear gloves. It shouldn't be hard for us to accept that we need to avoid leaving traces of ourselves on objects, especially when we know they will cause irreversible damage.

Why should I wear gloves? My hands are clean, I just washed them.

Yes, washing your hands, rinsing the soap off and drying them carefully is a great start. How long does it take for the sweat to reform on the skin? (Don't forget that soap is very alkaline and must be thoroughly removed from the skin before drying, as it will also harm objects).

The idea that washing hands was sufficient to protect objects came about as the result of a mistaken interpretation of a scientific paper on the analysis of sweat. This was debunked by Terry Kent, a Home Office forensic scientist, in 2016. His testing showed how much we leave on objects when we touch them:

"The deposit from a single human finger touch, whilst varying widely between individuals, is likely to contain less than 20% water and on average be about four micrograms of a mixture of amino acids, salts, primarily sodium and potassium chloride, fatty acids, squalene and many other trace compounds." [British Library blog – 2016](#)

He also calculated how quickly our fingers are covered with greasy, sweaty compounds after washing. This can be as little as 5 minutes. So, unless we will go and wash our hands every 5 minutes, we really need to be wearing gloves.

Gloves make my hands sweaty!

Gloves do not make our hands sweat more. They trap the sweat that would normally be on our skin, which would be deposited on objects.

Some of the water would evaporate, of course, making the results even more concentrated. Gloves just make us aware of our sweat, a useful reminder of how much our bare skin would deposit on the objects.



Protecting the objects is only half the story though.

Objects may be made of toxic or hazardous substances which can transfer to your skin. Skin is a very sensitive organ of the body which absorbs substances easily, passing them on to the bloodstream. You do not want to poison yourself, even in small quantities. Repeated exposure, even of tiny amounts, can be harmful.

Even if the object was not made from something poisonous or toxic, it may have been treated with a pesticide such as mercury, arsenic or DDT, or exposed to harmful substances from its previous surroundings. Without analysis, you have no way of knowing what is on the surface of the object. The only way to protect yourself is to have an impermeable barrier between you and the object.

Of course, you should never touch your face or anything you might put in your mouth, such as the neck of a water bottle, while wearing gloves. When you remove the gloves, take them off without touching the outside surface and put them in a secure waste bin or bag. Then wash and dry your hands thoroughly.

If you are certain that the items you have been handling are not toxic and you wish to wear the gloves again, you can wash them and dry them thoroughly while still wearing them, then take them off and rinse out the inside. Turn them inside out and dry them, then turn them the right way round, ready to wear again. If in any doubt, dispose of them and use a fresh pair. Your health is worth more than a pair of gloves.

What type of gloves should I wear?

You need an impermeable barrier between you and the object, so choose gloves of nitrile or polythene. Avoid vinyl gloves as they can become acidic.

Latex gloves can be used if you are not sensitive to them, but avoid using them near objects containing silver, including decorated textiles and photographs, as the latex contains sulphur which causes rapid tarnishing. "Rubber" gloves also contain sulphur and are usually too thick to enable you handle objects carefully enough.

If you are handling objects in special conditions you may need different gloves:

Conditions	Type of glove
Most objects	Nitrile or polythene
Frozen objects	Freezer gauntlets
Awkward objects which might slip	Tiger paw gloves with PVC dots for extra grip
Very heavy objects	Protective gauntlets, riggers gloves
Very sharp or edged objects	Cut resistant gloves, butchers' gloves

What happened to cotton gloves? They were so comfortable.

Cotton gloves don't protect the wearer from anything toxic on the object or protect the object from the wearer. In addition, they can catch on the edges of objects and snag or cause damage. They also pick up dirt, making it easy to transfer it to other objects. They can make it difficult to maintain a secure grip on slippery surfaces like glass.

They're really only suitable for very short-term use, for example when you have a visitor and you want them to realise the objects are special and take extra care, but they are only going to be touching the object for a few seconds, under supervision.

Where can I get suitable gloves?

Always make sure you buy "powder-free" gloves.

Most janitorial companies supply gloves – for example:

[Gompels](#)

[Just Gloves](#)

You can also buy them at cost in smaller quantities from our Central Purchasing Scheme through the Conservation Development Officer. For more information, please [get in touch](#).



What size should I choose?

Glove sizes are generally the same as your shoe size. If you wear a size 7 shoe, a size 7 glove should fit. Alternatively, measure across your palm just below the knuckles (the widest part).

Try to wear gloves that are a tight fit without being painful. If they are loose you won't be able to feel the object very sensitively and the glove may catch on projections.

There are helpful videos showing how to put on and take off gloves safely for example, [on the Gompels website](#).

Glove Size	Palm width	Equivalent shoe size
Extra small	6-7cm	3-4
Small	8cm	5-6
Medium	9cm	6-7
Large	10cm	8-9
Extra Large	11cm	10-11

Fingercots

Instead of gloves, you can wear nitrile fingercots that only cover the fingers as long as you are scrupulous about not touching the object with the rest of your hand. These can be purchased from suppliers such as [Preservation Equipment](#)

Only use these when handling objects which you are certain are not hazardous.

How do I dispose of gloves after use?

If you have been wearing the gloves while handling known hazards (items containing radioactive or toxic materials) then have a waste bag ready.

Take the gloves off straight into the bag. When you have finished, close the bag tightly and place it in a second waste bag. Seal that, take it outside the museum and dispose of it in a waste bin as usual.

If you suspect the gloves may be heavily contaminated with a hazard, double bag them and consult the local authority hazardous waste team.

There is more information on some toxic materials in museum collections on the [Hazards in Collections website](#).

Can I recycle the gloves?

If the gloves are not contaminated with hazardous waste, they can be recycled.

- There is information on waste and sustainability on the [Ki Culture website](#).
- Terracycle is the main agency for recycling gloves at the time of writing: They have a [map of collection points](#) but there are currently only 14 in the south west.
- You could start a local scheme for collection. You need to create an account on the [Terracycle website](#) and then [go to Spontex](#) to set up a collection point.
- Some manufacturers are now making biodegradable nitrile gloves, for example:
[Just Gloves website](#)
[Zoro website](#)