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# Selection and use of ‘splash-resistant single use’ (SRSU) protective gloves for workers handling treated plants and contaminated surfaces

This factsheet provides information to those responsible for workers (ie the duty holder) about the selection and use of protective gloves (Figure 1) when carrying out tasks that may result in exposure of the hands to plant protection products (PPPs). Such tasks include taking and inserting cutting material, pinching, pruning, harvesting and packing following application

of a PPP. The Chemicals Regulation Directorate (CRD) now allows the protective factor of gloves to be taken into account during the PPP authorisation process. This could allow new approvals of PPPs that might otherwise not be approved without the restrictions associated with having a time delay between treatment and handling by workers.



1. Worker handling trays of treated plants while wearing appropriate SRSU gloves

## Action points

- Read and understand the PPP label or Extension of Authorisation for Minor Use (EAMU) and the requirements for authorisation to ascertain when gloves need to be worn by staff when working within treated crops.
- Determine the re-entry period, ie the time between PPP application and when plants, containers and surfaces can be handled by staff.
- Select appropriate gloves for the work being done, ie splash resistant single use gloves meeting EN374-2:2003 or EN374-3:2003.
- Use safety signs to inform workers of the need to observe the re-entry period.
- Know how to put gloves on, and use and remove them correctly to avoid cross-contamination and ensure maximum worker protection.
- Know when and how to dispose of gloves.
- Determine worker training requirements to ensure staff are aware of when and how to use SRSU gloves.
- Check staff for possible signs of dermatitis and the need to consider use of alternative glove types.

## Background

**PPPs are authorised for sale in the UK by the CRD after carrying out risk assessments to ensure that there are no harmful effects to humans and the environment. In this context, the factsheet is targeted at duty holders responsible for workers who handle treated plants or surfaces where there is a risk of the PPPs' deposits being transferred to the hands. PPPs can penetrate the skin and this is the main route of exposure for re-entry workers. The PPPs' deposits on plants and surfaces degrade over time following treatment and, therefore, the risk of exposure to workers reduces too (Figures 2 and 3).**

The risk assessment uses data for the amount of PPPs' deposits on plants and treated surfaces that can be transferred to the hands during typical working shifts. If the risk assessment indicates that the exposure of the skin to the PPP could exceed what is considered a safe level, action is required to reduce exposure. The measure usually taken up until now required a period between PPP treatment and handling of plants by workers (a 're-entry period').

A recent AHDB Horticulture survey showed that many workers wear gloves when working in a crop. The survey indicated, however, that a wide range of gloves were used by workers, primarily to keep their hands clean, protect hands from plant sap that may irritate the skin, or to protect against thorns and other physical hazards.

Research undertaken on behalf of the Health and Safety Executive (HSE)<sup>1</sup> has also shown that the wearing of SRSU gloves by workers handling treated plants would provide adequate protection of the hands, provided they are selected correctly, worn properly, removed safely and replaced regularly.

The CRD recently published a regulatory update<sup>2</sup> to confirm that it will now accept the use of appropriate gloves as a way of reducing skin exposure of the hands during their risk assessments, provided the use of such gloves is a realistic option for the crop concerned.

This new approach to the use of appropriate gloves by CRD can, potentially, allow PPPs to be authorised for use with less stringent time limitations on the re-entry period following pesticide treatments. For example, previously a re-entry period of several days may have been required for a PPP, which may have restricted its use in certain crops where regular re-entry and handling of plants was needed. By taking into account the protective factor of gloves, the re-entry period can be shortened or even eliminated.

The requirement to use appropriate protective gloves will be included on the PPP label. However, before this can happen, the industry must put into place measures to ensure that duty holders provide appropriate gloves, and workers are aware of the need to wear them. The duty holder is considered as the owner or manager of a nursery employing staff or a gang master and, as such, has a responsibility to ensure through regular monitoring that the correct gloves continue to be worn for as long as they are required. This factsheet is one element of this programme to inform industry of these new requirements.



2. Worker handling treated cuttings whilst wearing appropriate SRSU gloves



3. Worker handling treated protected ornamental plants while wearing appropriate SRSU gloves

## Current legislation

The authorisation of pesticides in the EU is covered by the Regulation EC No 1107/2009<sup>3</sup>, which requires that there will be no harmful effects to humans and the environment from the use of PPPs. Phrases on PPP labels or EAMU will have details of how the PPP must be used and any protective measures required, such as suitable protective clothing. There is also UK legislation to safeguard health and safety in the workplace, which employers and the self-employed should already be familiar with, and is covered within the Health and Safety at Work, etc (HSW) Act 1974<sup>4</sup>. The Control of Substances Hazardous to Health (COSHH) Regulations 2002<sup>5</sup> specifically makes reference to protecting the workforce from exposure to hazardous substances, and requires the employer to carry out risk assessment where exposure to hazardous substances, such as PPPs, may occur.

## What are the new conditions of authorisation?

The new conditions of authorisation published by CRD will be included in label or EAMU phrases for the PPP, indicating when there is a requirement for SRSU gloves to be worn and the implications that this has for the re-entry period for workers following treatment with a PPP.

A requirement to wear gloves as a condition of authorisation of a PPP will be identified by the following phrases on the product label:

- Workers handling treated crops or contaminated surfaces within [x] days after treatment must wear suitable protective gloves meeting at least glove safety standard EN374-2:2003. (BSI®). Gloves compliant with this standard can be identified by a CE Mark with four digits below, and will show the EN374 pictogram for micro-biological hazards or the pictogram for 'waterproof' and 'low chemical resistance' gloves.

In some cases, it may not be possible to derive a re-entry interval for unprotected workers and, therefore, protective gloves would be required regardless of the period of time that has elapsed since treatment. Under these circumstances, the following alternative phrase would apply:

- Workers handling treated crops or contaminated surfaces must wear suitable protective gloves meeting at least glove safety standard EN374-2:2003. Gloves compliant with this standard can be identified by a CE Mark with four digits below, and will show the EN374 pictogram for micro-biological hazards or the pictogram for 'waterproof' and 'low chemical resistance' gloves.

## Protective glove adoption

The label or EAMU of the PPP will define when gloves must be worn by workers. It is the responsibility of the duty holder to ensure that the need for protective gloves to be worn is identified and communicated to the workforce. A range of re-entry scenarios are possible but the three most likely, are:

- No gloves are required by workers when the PPP label does not stipulate use of gloves meeting at least glove safety standard EN374-2:2003. In this case any (or no) gloves could be worn by the worker, although care is needed to ensure that the gloves worn do not increase the contamination of the hands with pesticide.

- Use of gloves meeting at least glove safety standard EN374-2:2003 must be worn by workers handling treated crops or contaminated surfaces within a specified re-entry period following PPP application. The re-entry period will be specified on the PPP label.
- Use of gloves meeting at least glove safety standard EN374-2:2003 must be always worn by workers handling treated crops or contaminated surfaces following application. The pesticide label will specify this requirement.

In cases where a staff member cannot wear gloves for whatever reason, then that person must not work with crops treated with the PPP requiring glove use.

If a particular working practice cannot be done while wearing gloves, then the re-entry period must be adhered to or the PPP in question should not be used on the nursery.

Unless otherwise stated, the requirements for glove use only relate to the staff activities within the enterprise/nursery in which the application of the PPP took place and for which approval was given. The glove requirement is not applicable post-dispatch.

## Which gloves can be worn?

Gloves that are considered to be appropriate for the protection of workers hands must meet the requirements of Conformité Européene (CE) category III. Within this category they must meet, as a minimum, glove safety standard EN374-2:2003. Many gloves available meet both EN374-2 and EN374-3 (which gives a greater level of protection).

Gloves that are compliant with this standard are easily identified by having packaging or user information with the CE Mark with four digits below and will also have the pictogram for micro-biological hazards and/or the pictogram for 'waterproof' and 'low chemical resistance' gloves (see Figure 4).



4. Pictograms that are found on packaging of suitable SRSU gloves

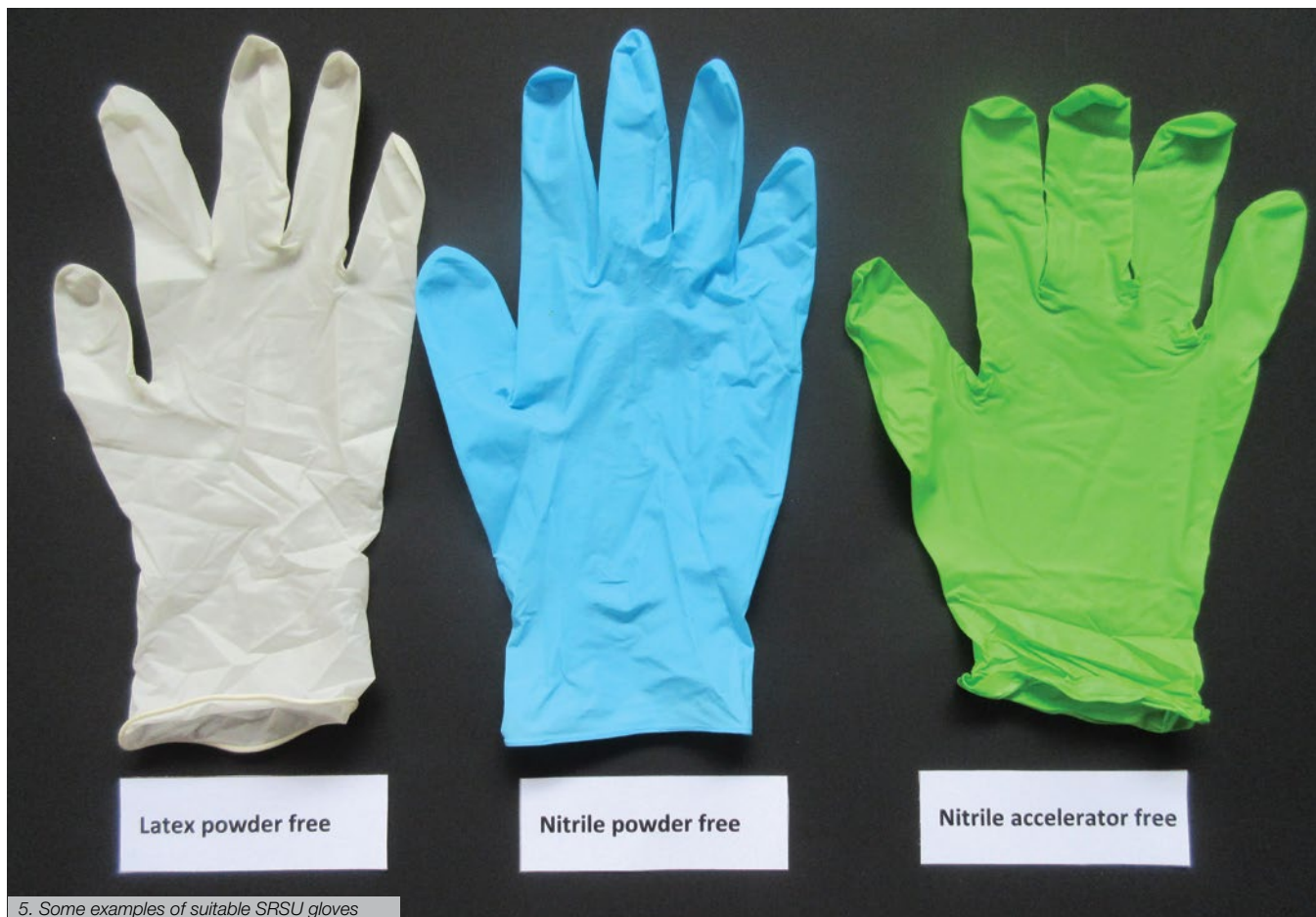
There are several SRSU glove types used in industry that could comply with the European Standard as stipulated by CRD (see Figure 5 and Table 1).

The signs to look for to identify dermatitis can be seen in the HSE poster [hse.gov.uk/skin/posters/skindermatitis.pdf](https://www.hse.gov.uk/skin/posters/skindermatitis.pdf)

**Table 1. Common glove types with some of the advantages and disadvantages**

Glove type	Advantages	Disadvantages
Latex	Good flexibility	Proteins in natural rubber latex may cause skin allergies or asthma. If the duty holder's risk assessment leads to single use latex as the most suitable glove type for protection against the hazard, they should be low protein and powder free*
Nitrile	Good strength and resistance to snagging	Not as flexible as latex
Vinyl (PVC)	Low cost	Limited strength and flexibility
Vinyl/nitrile blend	Good strength and resistance to snagging	More expensive than latex

\*The risks arising from the use of latex gloves are highlighted within the HSE guidance document [hse.gov.uk/skin/employ/latex-gloves.htm](https://www.hse.gov.uk/skin/employ/latex-gloves.htm)



5. Some examples of suitable SRSU gloves

Thicker gloves commonly used for tasks where greater chemical protection is required would meet the minimum requirements as stipulated on the PPP label, however, the use of such gloves is unlikely to be suitable for the tasks associated with taking and inserting cuttings, pinching or harvesting.

#### Potential problems with allergic reactions

Powdered gloves are easier to put on and take off, however, they should be avoided as the compounds from the gloves can leach into the powder and cause a variety of adverse reactions in some individuals.

The duty holder should have a system in place to address the potential for dermatitis among workers. This may include training a 'responsible person' who knows what the early signs of skin disease look like and encouraging workers to check their skin and report any problems promptly. Further information on this can be found in paragraphs 87-89 of the HSE publication 'Managing skin exposure risks at work', which can be found at the following link: [hse.gov.uk/pubns/priced/hsg262.pdf](https://hse.gov.uk/pubns/priced/hsg262.pdf)

#### Potential problems with crop contamination

Accelerators may be used during manufacturing to help form the gloves from the raw materials. The most commonly used accelerators are the zinc salts of the dithiocarbamates, such as ZDEC, ZDMC and ZDBC. There are over 34 different varieties of accelerators, and some can cause allergic reactions. Those containing dithiocarbamates can lead to

crop residues that may be confused with dithiocarbamate pesticide residues. Gloves can also have alternative lubricants and moisturisers to increase comfort. It is, therefore, important to choose the correct glove, and be aware of any possible reactions due to contact with the skin.

#### Where to purchase gloves

Gloves can be purchased directly from a number of glove manufacturers or through suppliers who will offer a range of glove types from several suppliers. Horticultural and agricultural outlets will also stock the types of gloves required.

#### Who is responsible for glove selection and use?

The duty holder is ultimately responsible for ensuring that suitable gloves are made available to workers and that they know how to use them appropriately (see training in the use of gloves sub-section). In many cases, these tasks will be delegated to the nursery/farm manager. The use of gloves needs to comply with the label requirements, but the gloves also need to be fit for purpose, ie allow the worker to carry out the tasks without undue difficulty caused by wearing unsuitable gloves and provide adequate protection against physical hazards. Certain crops may contain thorns or spines or simply be too abrasive to allow the practical use of SRSU gloves as they would rapidly become damaged and no longer provide the necessary level of protection. Duty holders need to take this into consideration when deciding whether the use of SRSU gloves is a practical option for the task/crop involved. Further information is available for the correct glove selection,

for example, from the HSE available at the following link:  
[hse.gov.uk/skin/employ/gloves.htm](http://hse.gov.uk/skin/employ/gloves.htm)

The business needs to have in place a system that ensures all staff members are aware of the need for glove use, and how to identify when gloves must be worn.

## How to use the gloves

Hands should be clean and dry before gloves are put on (donned) to maximise comfort and protection. During use, the gloves need to be checked regularly by the wearer to ensure that there is no damage to them that could lead to holes and, therefore, compromise the protection offered. If the hands become sweaty inside the gloves, the gloves should be changed regularly to avoid the development of skin problems. Liners, such as cotton gloves, can be worn beneath the protective gloves to increase comfort.

Damaged gloves must be replaced immediately, together with any inserts or liners.

When removing gloves, the procedure shown at the back of this factsheet should be followed to prevent residues on the outside of gloves coming into contact with the hands. Gloves should be removed when damaged and at the end of work periods and always removed before entering areas designated as clean, for example, where food and drinks are consumed.

The SRSU gloves can only be used once and, once removed, must be disposed of. Used gloves should be disposed of with low-level chemical waste. The duty holder is responsible for ensuring appropriate waste disposal facilities are available. After removing gloves the hands should be washed and dried.

## Training in the use of gloves

The duty holder is responsible for ensuring that the workforce is trained appropriately for carrying out the tasks designated to them. This includes ensuring that the workforce is aware of the potential risks of handling treated crops and surfaces and how to identify when gloves need to be worn, ie what to look out for on the signs placed at the entrance to glasshouses, protective structures, production areas or fields.

The training should also inform the workforce of the protective gloves available to them and how to obtain information if needed. All workers need to be trained in how to use the protective gloves, including donning of gloves, monitoring of gloves during use, when and how to remove the gloves and the procedure for disposal. Further information on hand washing, removal and application of hand cream in poster form is available at the following links:

[hse.gov.uk/skin/posters/skinwashing.pdf](http://hse.gov.uk/skin/posters/skinwashing.pdf)

[hse.gov.uk/skin/posters/skinmethod.pdf](http://hse.gov.uk/skin/posters/skinmethod.pdf)

The training needs to be provided to all workers and checks made to ensure that gloves are being used correctly. Such training records must be retained by the duty holder. If a system for recording is not already in place, the duty holder needs to retain details of staff training.

## Use of safety signs

Safety signs must be provided at entry points to treated crops indicating which PPP (commercial product name) has been sprayed, the type of crop and the need for protective gloves to be worn over a prescribed period of time.

In cases where there are several areas within a single glasshouse or production area treated at different times, then each area must be adequately marked to indicate the requirement for the use of gloves. If this is not feasible, then gloves must be worn when handling all plants within the glasshouse, and a sign must be clearly visible to indicate this.

The safety sign needs to be concise and clear. Further examples of wording could be:

- (i) This area has been treated with PESTICIDE X on dd/mm/yy. Protective gloves must be worn when handling treated crops or contaminated surfaces until dd/mm/yy.
- (ii) This area has been treated with PESTICIDE X on dd/mm/yy. Protective gloves must be worn when handling treated crops or contaminated surfaces.
- (iii) This area has been treated with PESTICIDE X on dd/mm/yy. Do not enter the treated area until dd/mm/yy.

## References

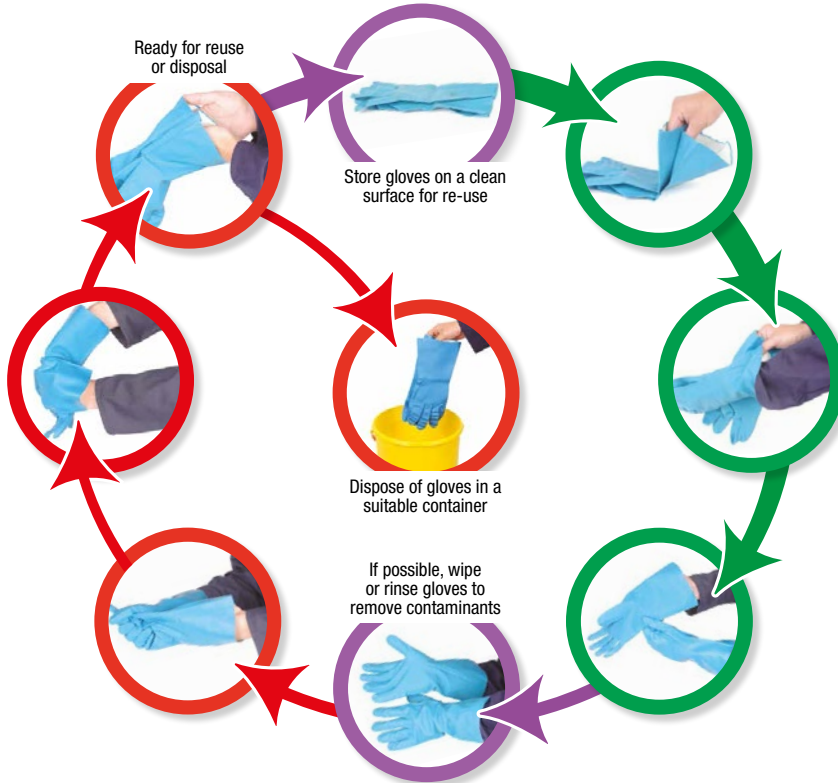
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- 5 Health and Safety Executive. Health and Safety at Work etc 1974 [hse.gov.uk/legislation/hswa.htm](http://hse.gov.uk/legislation/hswa.htm)
- 6 British Standards Institute. EN374-2:2003 Protective gloves against chemicals and microorganisms - Part 2: Determination of resistance to penetration. [bsigroup.co.uk/en-GB/standards](http://bsigroup.co.uk/en-GB/standards)

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## Reusable, chemically-resistant gloves

Follow the simple steps below to put on and remove gloves correctly:



Remove carefully to protect your skin from contamination.  
Use gloves for no longer than recommended.



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