Why and when gloves?
Making a start with gloves

Whilst gloves are an essential element in our armoury of exposure control measures there are several reasons why restrictions should be placed on when and how they should be used to protect against chemical hazards. In many industrial countries there are regulations that address this issue.

Thus, whilst there are some limited situations where gloves may be used as the primary means of controlling skin exposure, in most situations gloves should be regarded as the ‘last resort’, to be used only in conjunction with other measures to control any residual exposure.

There are some very good reasons why gloves as protection against chemical hazards should be regarded in this way. The following paragraphs outline these.

In the first instance we need to recognise that gloves always ‘fail to danger. Should the gloves fail, the wearer’s skin will be in contact with the chemical. Given the effect on the skin’s barrier that wearing gloves will have, the result of the glove failure may be greater than were no gloves to have been worn.
It can be extremely difficult to decide which type of glove material and specification should be chosen and how well it may perform. For some chemicals there is no glove that provides protection for more than an extremely short time, often referred to as 'splash protection'. By this is meant that any contact between the chemical and the glove necessitates an immediate change of glove. For others the only glove that will provide more than splash protection can be extremely expensive, sometimes as much as £80 per pair. Price is no indicator of suitability. For example a simple glove costing only a few pence per pair may, with a particular chemical, outperform a glove costing many times more.

Even when the glove has been tested for what is termed 'permeation', the data obtained with one of the standard tests does not indicate for how long that glove will protect the wearer under actual conditions of use. This can vary enormously, particularly when chemicals are mixed. Thus in many cases the manufacturer's published performance data can only indicate which is the most suitable glove for a particular chemical and not how long it may be work when a particular task is being carried out. Mixtures, in particular, can render much of the permeation breakthrough data for the individual chemicals irrelevant.

Gloves will themselves present a risk of damage to the skin. This usually takes the form of irritant damage, but often wrongly assumed to be an allergy. It is caused by the hyperhydration of the skin due to the occlusive effect of the glove. The consequent damage to the barrier can persist for several hours after removal of the glove, so that during what may be an extended period following glove removal the wearer's skin may not be able to protect the person in situations which would normally present no risk of damage to health due to skin exposure.

Glove users will need training in the correct use of gloves, particularly in their removal. It can negate the benefit from the wearing of the gloves if the wearer contaminates their skin with the chemical on the outside of the glove through incorrect removal technique.

**Conclusion**

In conclusion, whilst gloves may often be essential as part of the measures to prevent chemicals from causing damage to health due to workplace skin exposure the selection of the type of glove and how it is to be used needs an in-depth understanding of how gloves work and how they fail if the user is to be properly protected. The system for selection and use of gloves must reflect the actual conditions under which the gloves are to be used.

More information on the management of skin in the working environment can be found in the EnviroDerm Services ‘Guide to Occupational Skin Management’. This is an interactive Computer based guide (runs in Windows operating systems) containing a wealth of information and is almost certainly the most comprehensive guide available on this complex aspect of health and safety.

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