

Chemical Compatibility Guide for: Gloves

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Polymers protect against chemical hazards and chemicals will degrade, permeate (EN374-3) and penetrate through the polymer (EN374-2). The resistance of the polymer against dangerous chemicals is caused by the polymer itself, by its thickness and by the quality of the polymer. However, no polymer exists that protects against all chemicals at once.

There are three ways in which any protective glove will, at some stage, fail to protect the wearer from exposure to any chemical agent and these are:

Permeation– the process by which a chemical agent migrates through the protective glove at a molecular level;

Penetration– the bulk flow of a chemical agent through closures, porous materials, seams and pinholes or other imperfections in the protective glove;

Degradation– a damaging change in one or more physical properties of the protective glove as a result of exposure to a chemical agent.

Every chemical resistant glove is shown with the 'chemical resistant' glove pictogram and a 3-digit code. This code refers to 3 chemicals (from a list of 12 standard defined chemicals list below) for which a breakthrough time of at least 30 minutes has been obtained.

Code	Chemical	CAS Number	Class
A	Methanol	67-56-1	Primary alcohol
B	Acetone	67-64-1	Ketone
C	Acetonitrile	75-05-8	Nitrile compound
D	Dichloromethane	75-09-2	Chlorinated paraffin
E	Carbone disulphide	75-15-0	Sulphur containing Organic compound
F	Toluene	108-88-3	Aromatic hydrocarbon
G	Diethylamine	109-89-7	Amine
H	Tetrahydrofurane	109-99-9	Heterocyclic and Ether compound
I	Ethyl acetate	141-78-6	Ether
J	N-Heptane	142-85-5	Saturated Hydrocarbon
K	Sodium hydroxide 40%	1310-73-2	Inorganic base
L	Sulphuric acid 96%	7664-93-9	Inorganic mineral acid

Glove care in chemical environments

- Before putting on the gloves, wash and dry your hands carefully.
- In the event of prolonged use, do not use gloves beyond the recommended exposure time as highlighted within a COSHH assessment.
- Regularly check that the gloves have not become porous or are displaying any signs of degradation.
- Where appropriate, folding the sleeve of the glove over slightly can help prevent substances coming into contact with arms.
- Before removing gloves, follow the advice on the user instructions.
- When removing the second glove, do not touch the outside with the bare hand, but grip it by the inside of the sleeve.
- Before reusing gloves, check that they are dry both inside and out

Visit the [SHOWA ChemRest web site](#)

ChemRest is a comprehensive Chemical Resistant Glove Directory designed to inform users about chemical resistance and its relationship to hand protection products manufactured by SHOWA.