

How long can a chemical resistant glove be worn?

A manufacturer of gloves is making the following statement:

“All chemical resistant gloves with a permeation breakthrough level 6 (>480 min), which were tested under lab-conditions for a special chemical, should be worn in practice not longer than 120 minutes after contact with the chemical.”

In practise, it is not possible to provide a general statement of how long a glove can be used in an application against chemicals. This should actually be assessed case by case.

During a lab test, permeation breakthrough time is determined by constant contact with the chemical and without any other external influences such as cuts or abrasions. In practise, this will never happen. Therefore, breakthrough times are ONLY indicative and will never reflect the actual performance in the field. Breakthrough times could, however, also be useful for comparative reasons.

If this manufacturer is saying that a glove with a breakthrough time of > 480 minutes should only be used < 120 minutes, then that is their choice and own personal opinion. The actual usage time will depend upon the application involved and whether it is splash protection or total immersion or whether any mechanical influences are also involved, etc.

If a customer is asking how long they should wear a glove, he/she should use a glove that has an excellent degradation resistance against the chemical as well as a breakthrough time of preferably > 480 minutes. In general, customers should dispose of the gloves when visible signs of degradation are occurring; i.e. when the gloves are discoloured, when they get weaker in certain areas or when their dimensions change.

Recommendations made in this note are based on extrapolations from laboratory test results and information regarding the composition of chemicals and may not adequately represent specific conditions of end use. Synergistic effects of mixing chemicals have not been accounted for. For these reasons, and because Ansell has no detailed knowledge of or control over the conditions of end use, any recommendation must be advisory only and Ansell fully disclaims any liability including warranties related to any statement contained herein.