

Which gloves can be used to protect against epoxies?

Epoxy resins, widely used in different industries as coatings (for example building & construction industry, windmill construction) are known to be a cause of occupational diseases.

Testing of permeation breakthrough for epoxy resin systems is impossible with the standard test methods (EN374 or ASTM F-739), because of hardening of the chemical in the test cell.

In 2003 however, Ansell participated in a scientific testing program organized by a German health & safety organization for the building & construction industry. A specific testing method was developed to determine the permeation through protective gloves. During this research, Ansell has tested the following gloves using this test method:

- Barrier® (02-100)
- Solvex® (37-900, 37-675, 37-695)
- TouchNTuff® (92-600)

The tested epoxy resin was the low solvent type (containing typically 10% xylene and 10% toluene) based on the monomer Bisphenol A/F – this was found to be the resin type with highest probability of permeation through gloves (these solvents – xylene, toluene – are the components that “drive” the permeation through the glove).

- Barrier® (02-100) and Solvex® (37-900, 37-675, 37-695) gloves did not show any permeation after 8 hours contact with the epoxy resin.
- TouchNTuff® (92-600) did show some permeation rate after +/- 45 minutes, but the permeation rate was under 1 µg/cm².min (EN374-3).

Conclusion:

Based on those findings, we can recommend the following gloves from the current Ansell range: Solvex®, Sol-Knit®, AlphaTec®. As a splash protection: nitrile disposable gloves of min. 0.12 mm such as TouchNTuff®, MicroFlex® Supreno EC (93-853) are recommended.

Gloves made out of neoprene, natural rubber or vinyl, are not recommended as protection against epoxies.

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.