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PERMEA-TEC Sensor for Solvents

Cat. No. 769-3050

Operating Instructions

Limited shelf-life: Check expiration date on packaging.

The PERMEA-TEC Sensor colorimetric screening method determines the effectiveness of chemical-protective gloves and clothing under actual use conditions. CLI's microencapsulation detection indicator changes color (white to gray), indicating permeation for many common polar organic chemicals. Nonpolar solvents will not be indicated but can be analyzed by extraction of the charcoal pad. In addition, the indicator's highly absorptive charcoal traps the permeating solvents(s) for laboratory identification. Results enable professionals to select the gloves/clothing best suited for protection, acceptance, and cost-effectiveness.

PERMEA-TEC sensors are adhered to a worker's skin at points of greatest contact and abrasion before gloving or covering, observed for color change at time intervals, and sent to an accredited laboratory for analysis if desired.

Instructions for Use

To determine a user-safe time period for the particular glove, double gloving is recommended.

1. Affix PERMEA-TEC sensors to the thumb, middle finger, and palm on the outside of the glove currently being worn. Place the glove to be evaluated over the first glove.
2. After one hour, remove the outside glove and the underlying

- PERMEA-TEC sensors.
3. Evaluate the sensors for breakthrough. A positive indication of breakthrough results in a color change of white to gray on the indicator. The sensitivity of the reaction varies with the solvent but is normally in the range of 0.5 to 5 mg.
 4. If no breakthrough is indicated, apply fresh PERMEA-TEC sensors and continue to wear the outside glove for another hour. Follow Steps 2 and 3 to determine if breakthrough has occurred.
 5. Repeat Steps 3 and 4 to determine a user-safe time period for gloves.

When using a solvent mixture, solvent desorption can be used to identify the permeating solvent. Remove the charcoal pad from the PERMEA-TEC sensors and place in an airtight vial for shipment to the laboratory and analysis via GC. For highly toxic solvents or solvents with a poor indicator response such as benzene or other nonpolar solvents, the charcoal pad should be relied on as the primary detection method.

Other PERMEA-TEC sensors are available for:

Aromatic Amines:	MDA, aniline, o-Toluidine, methylene-bis(2-chloroaniline) (MOCA)
Aromatic Isocyanates:	TDI, MDI
Aliphatic Amines:	N,N-dimethylcyclohexylamine, triethanolamine, diethanolamine, and triethylenediamine
Aliphatic Isocyanates:	HDI, HMDI
Acid/Base:	HCl, HF, H ₂ SO ₄ , and NH ₃
Phenols:	Bisphenol A

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