

POUCH TEST CARTRIDGE SIMPLIFIES PERMEATION TESTING OF FLEXIBLE POUCHES

The flexible nature of pouches often produces unreliable permeation test results.

It's critical to evaluate formed pouches for their barrier properties, but obtaining precise permeation data is often challenging, highly-skill dependent and time-consuming.

Placement of purge lines, epoxy preference and sealing surface preparation may vary substantially, resulting in high variability.



Obtaining reliable permeation test data for flexible pouches is typically challenging.

Flexible pouch sample preparation is tricky, subjective, and time-consuming.

Sample preparation significantly affects the repeatability and accuracy of data. The preparation process for flexible pouches is typically time-consuming and difficult, requiring precise cutting and application of epoxy. Prepared samples are often quite fragile at the epoxy-pouch interface, making them difficult to handle.

The typical test preparation process involves several steps dependent on the technician's skill and experience:

- Precisely cut a small slit using a sharp knife
- Seal the tubing with epoxy into the flexible pouch without covering too much surface area
- Carefully mount the sample, handling it gently to prevent damaging the delicate seal of epoxy to the pouch

This multi-step, complex process varies widely between technicians and methods, and often results in unreliable or unrepeatable data, discouraging manufacturers from testing whole pouches at all.

A SIMPLER SOLUTION FOR FLEXIBLE POUCH TESTING

Simple and repeatable sample prep.



Integrated Pouch Test Cartridge.



Specialized cartridge enables simpler testing of pouch samples.

A specialized solution for hard-to-test pouches.

AMETEK MOCON, as part of our innovative line of permeation testing cartridges, offers a specialized Integrated Pouch Test Cartridge. The table below outlines the time savings realized by using the MOCON® Pouch Test Cartridge compared with traditional sample preparation techniques. Faster sample prep means increased lab throughput and more confidence in the data.

Method	Sanding, cutting slit, insert tubing, epoxying	Post-epoxy curing to max. strength	Punch holes, insert, seal by thumb screw	Total time for sample prep
Pouch Cartridge	N/A	N/A	2-5 mins (depending on experience)	Up to 5 min
Tubing/Epoxy	30 min (if tested dry)	Overnight 16 hrs (if tested wet)	N/A	30 min to 16 hrs

In addition to time savings, using the Integrated Pouch Test Cartridge reduces deviation (based on three samples for each set) compared with the traditional epoxy/tubing mounting technique.

Method	Sample 1	Sample 2	Sample 3	Standard Deviation
Pouch Cartridge	0.00152	0.00138	0.00135	0.00009
Tubing/Epoxy	0.00155	0.00136	0.00119	0.00018

Limiting steps and variability for stronger data.

The Pouch Test Cartridge uses a simple punch tool, an insert spacer for gas purging and a compression-sealed interface combined with TruSeal technology for improved test accuracy and repeatability. With no epoxy needed, the cartridge seal is more secure and robust, and technicians don't need to adhere tubing to the sample or use sandpaper to abrade sealing surfaces. The cartridge easily mounts to a package testing instrument with the push of a button, eliminating potential leaks caused by nuts and ferrules.

The Pouch Test Cartridge reduces overall variability and prep time, and interfaces directly with the MOCON OX-TRAN® 2/40, OX-TRAN 2/48, and AQUATRAN® 3/40 permeation analyzers. With the addition of the PackRack® testing fixture, this cartridge may also be used with several MOCON film testing analyzers.

Conclusion

To ensure product shelf life, the finished package must be evaluated for its true barrier protection level. The flexible pouch cartridge makes testing these traditionally challenging packages easy and reliable. With simpler preparation, a repeatable process and accurate results, this cartridge helps provide the data you need to understand and improve the package integrity of your pouched products.