

The Clear Path
to Package Integrity



mocon[®]

The Premier Provider and
Innovator of Solutions
to Assess Package
Performance & Integrity.

MOCON is the premier provider and innovator of solutions to assess package performance, shelf-life, package improvement, cost reduction, sustainability, and product safety. MOCON partners with companies as an instrument manufacturer, and a research and quality assurance consultant.

Consulting & Testing Services

3 Specialty Labs – Complete Service

MOCON has the world's largest Permeation Laboratory. When coupled with our Package Application Lab, and our Flavor and Aroma Analysis Lab, MOCON offers the most comprehensive package integrity analysis solution for a variety of issues, opportunities and new product developments for customers.

Barrier Analysis & Material Assessment (Permeation Lab)

Test permeation rates of:

- Oxygen
- Water vapor
- Carbon dioxide
- Organics
- Inert gases
- Test flat films or finished packages
- Testing for helium, argon, krypton, and nitrogen
- cGMP testing
- Validation services
- R&D consultation



Package Application Lab

Test packages for:

- Headspace O₂, CO, CO₂
- Water vapor
- Leak rate and hole size determination
- Burst
- Creep
- Vacuum decay
- Shelf-life analysis
- Seal strength
- Heat sealing
- Hot tack
- Coefficient of friction



Flavor & Aroma Detection & Analysis Lab

Test for:

- Flavor and Aroma profiling
- Off-odor and/or Flavor loss identification
- Flavor scalping and migration studies



Testing Equipment Lab Protocol & Training Program

Train your operators:

- Custom protocols developed and written for customer applications
- Lab operator training
- On-site educational training on principles of permeation and package integrity
- Webinars

System Certifications:

- CE
- ETL
- UL
- CSA

System Standards:

- DIN 53380
- JIS K 7126
- JIS K-7129

- ASTM F-88
- ASTM 1894
- ASTM D-2095
- ASTM D-3985
- ASTM D-6701
- ASTM E-398

- ASTM F-1140
- ASTM F-1249
- ASTM F-1307
- ASTM F-1927
- ASTM F-2054
- ASTM F-2029
- ASTM F-2476
- ASTM F-2714

- ISO 11607
- ISO 15105-2
- ISO 15106-1
- ISO 15106-2
- ISO 15106-3
- INDA/EDANA WSP 70.5

- TAPPI 523
- TAPPI T557

- 21 CFR, PART 11

- AMMI TIR-22

- USP 661/671

Instruments & Applications

Headspace Analyzers

- Oxygen
- Carbon dioxide
- Carbon monoxide
- Dissolved oxygen
- Online-Gas Stream Analyzers
- Production, quality control, and R&D applications
- Bench top or portable hand-held units
- Custom engineering solutions for specific applications
- Small headspace applications

Now with **Cal-Smart®**
-a revolutionary two point, no tank gas, calibration system



Leak Detection Systems

- Non-destructive leak detection
- Burst testing with accurate and repeatable results
- Dye penetration
- Leak, creep, creep to fail, and advanced leak
- Shelf-life analyzer – 3 in 1 (hole size, package volume & headspace)
- Pressure loss
- Vacuum decay
- Trace gas detection



Heat Sealers and Seal Strength Tester

- Hot tack
- Heat sealers
 - Single or dual heated jaws
 - Custom jaws
 - Gradient multi-jaws
- Seal strength and Peel tester



Coefficient of Friction Analyzer

- Analyze plastic films, laminates, foils, and papers

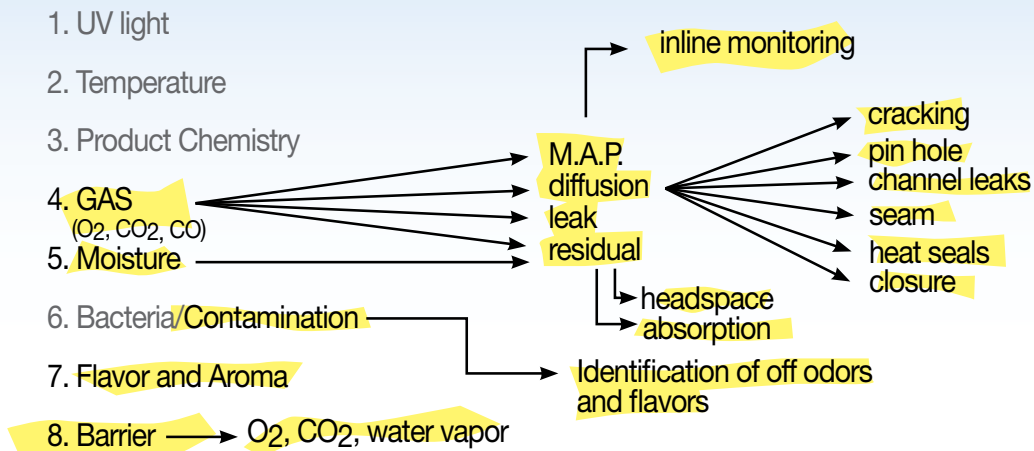


Flavor & Aroma Analysis

- Identification of off-odors and flavors
- Multi-dimensional GC/Mass Spec with sniff port
- Kits available for upgrades on existing GCs

Package Performance

Integrity, Shelf-life & Sustainability Testing
where MOCON Helps...



mocon®



BARRIERS
HEAD SPACE
SHELF-LIFE ANALYSIS
ODORS
PERMEATION
MOISTURE ISSUES
LEAK DETECTION
GAS ANALYSIS
SEAL STRENGTH
AROMA

There's an easier way to get to
the roots of package integrity
...talk to MOCON today!

MOCON offers both services and instrument based solutions to provide answers for production, development, and quality control.

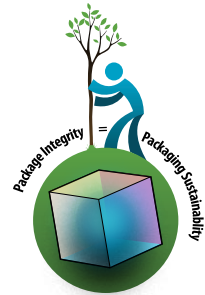
Key areas where MOCON's global facilities can help:

- Packaging consulting
- Testing services
- Test and measurement instruments
- Application development and training

Specific ways MOCON can help:

Barrier assessment, package integrity, seal integrity, seal strength, friction and tensile strength of films, headspace analysis, leak detection, shelf-life analysis, process gas analysis and control, package gas analysis, and process gas purity, odor identification, off-odor and aroma characterization in both development and crises situations. Our systems include bench-top, hand-held and in-line solutions.

**MOCON - assure package integrity,
minimize risk.**



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