Barrier Materials for Flexible Packaging  
2016 to 2020

Introduction

A. Barrier films and coatings defined
   1. Barrier
   2. Extrudable resins
   3. Fluid coatings
   4. Air coatings
   5. Aluminum foil
   6. Vacuum-deposited coatings
   7. Flexible packaging
   8. Retort pouch

B. Study organization

C. Study methodology

D. Geographic regions

E. Conventions

Executive Summary

A. Barrier materials included in this study

B. Market drivers and trends
   1. Macro environment
   2. Consumer drivers
   3. Drivers specific to barrier flexible packaging

C. Technology trends
   1. Downgauging
   2. Substrate surface design
   3. Optimization of vacuum coated film
   4. PVOH technology
   5. Nanotechnology
   6. Barrier adhesives
   7. Oxygen scavengers
   8. Micro-layer films

D. Market
   1. Very high oxygen barrier materials
   2. High oxygen barrier materials
   3. Medium oxygen barrier materials
   4. Very high moisture vapor barrier materials

E. Economic and environmental impact
   1. Material selection
   2. Economic results
   3. Environmental results
Technology

A. Barrier principles
   1. Temperature dependence
   2. Humidity
   3. Material thickness
   4. Coatings

B. Aluminum foil
   1. Aluminum foil global supply
   2. Aluminum foil production
   3. Aluminum foil product performance
   4. Aluminum foil packages
   5. Aluminum foil suppliers

C. PVOH resin
   1. PVOH resin global supply
   2. PVOH resin production
   3. PVOH product performance
   4. PVOH barrier packaging
   5. PVOH resin suppliers

D. EVOH resin
   1. EVOH resin global supply
   2. EVOH resin production
   3. EVOH product performance
   4. EVOH barrier film production
   5. EVOH resin suppliers

E. Transparent oxide-coated film
   1. Transparent oxide-coated film global supply
   2. Transparent oxide-coated film performance
   3. Transparent oxide-coated film suppliers
   4. Equipment suppliers

F. PVDC resin
   1. PVDC resin global supply
   2. PVDC resin and packaging production
   3. PVDC product performance
   4. PVDC resin suppliers

G. Metallized film
   1. Metallized film global supply
   2. Metallized film production
   3. Metallized film product performance
   4. Metallized film suppliers
H. Nylon resin
   1. Nylon resin global supply
   2. Nylon resin and packaging production
   3. Nylon barrier performance
   4. Nylon resin suppliers

I. PET film
   1. PET film global supply
   2. PET resin and packaging production
   3. PET film barrier performance
   4. PET film suppliers

J. Polychlorotrifluoroethylene (PCTFE) resin
   1. PCTFE resin global supply
   2. PCTFE resin and packaging production
   3. PCTFE product performance
   4. PCTFE resin suppliers

K. Cyclic olefin copolymer (COC) resin
   1. COC resin global supply
   2. COC resin and packaging production
   3. COC resin barrier film properties
   4. COC resin suppliers

L. Specialty-coated films
   1. PAA-coated films
   2. Nanotechnology-enhanced coated films
   3. Triazine-coated films
   4. Coated film barrier comparison
   5. Specialty-coated film suppliers

M. Emerging technology
   1. Oxygen absorbers
   2. Nanocomposite technology in flexible packaging
   3. Substrate surface design
   4. Sol-gel coatings
   5. Barrier adhesives
   6. Micro-layer films
   7. Liquid crystal polymers
   8. Polyglycolic acid resin (PGA)

**Economic and Environmental Case Studies**

A. Case 1: Target OTR: 0.31 cc/m2-day-atm
   1. Material selection and specifications
   2. Barrier properties of selected materials
   3. Assumptions
4. Economic Results
5. Environmental results – Energy
6. Environmental results – Greenhouse gas

B. Case 2: Target OTR: 0.31 to 1.55 cc/m2-day-atm
   1. Material selection and specifications
   2. Barrier property results
   3. Assumptions
   4. Economic results
   5. Environmental results – Energy
   6. Environmental results – Greenhouse gas

C. Case 3: Target OTR: 1.55 to 15.5 cc/m2-day-atm
   1. Material selection and specification
   2. Barrier property results
   3. Assumptions
   4. Economic Results
   5. Environmental results – Energy
   6. Environmental results – Greenhouse gas

D. Case 4: Target OTR: 15.5 to 77.5 cc/m2-day-atm
   1. Material selection and specifications
   2. Barrier property results
   3. Assumptions
   4. Economic results
   5. Environmental results – Energy
   6. Environmental results – Greenhouse gas

E. Case 5: Target WVTR: 0.0 to 1.55 gm/m2-day-atm
   1. Material selection and specifications
   2. Barrier property results
   3. Assumptions
   4. Results
   5. Environmental results – Energy
   6. Environmental results – Greenhouse gas

**Market Trends and Projections**

A. Drivers and trends
   1. Macro environment
   2. Consumer drivers
   3. Drivers specific to barrier flexible packaging

B. End-use packaging 1
   1. Baked goods
   2. Breakfast food
   3. Condiments
4. Confectionery
5. Dairy foods
6. Dried foods & pasta
7. Dried mixes
8. Meat, poultry, and seafood
9. Medical device
10. Personal care
11. Pet food
12. Pharmaceutical
13. Prepared drinks
14. Snacks
15. Tobacco

C. PET film
   1. PET film volume by end-use
   2. PET film market value
   3. PET film volume by geographic region

D. Nylon resin
   1. Nylon resin volume by end-use
   2. Nylon resin market value
   3. Nylon resin volume by geographic region

E. Aluminum foil
   1. Aluminum foil volume by end-use
   2. Aluminum foil market value
   3. Aluminum foil volume by geographic region

F. Metallized films
   1. Metallized film volume by end-use
   2. Metallized film market value
   3. Metallized film volume by geographic region

G. PVDC resin
   1. PVDC resin volume by end-use
   2. PVDC resin market value
   3. PVDC resin volume by geographic region

H. EVOH resin
   1. EVOH resin volume by end-use
   2. EVOH resin market value
   3. EVOH resin volume by geographic region

I. Transparent oxide-coated film
   1. Transparent oxide-coated film volume by end-use
   2. Transparent oxide-coated film market value
   3. Transparent oxide-coated film volume by geographic region

J. AMAB resin
K. PVOH resins
   1. PVOH resin volume by end-use
   2. PVOH resin market value
   3. PVOH resin volume by geographic region

L. Specialty-coated film
   1. Specialty-coated film volume by end-use
   2. Specialty-coated film market value
   3. Specialty-coated film volume by geographic region

M. COC resin
   1. COC resin volume by end-use
   2. COC resin market value
   3. COC resin volume by geographic region

N. PCTFE resin
   1. PCTFE resin volume by end-use
   2. PCTFE resin market value
   3. PCTFE resin volume by geographic region

O. Barrier materials summary
   1. Barrier materials volume summary
   2. Barrier materials value summary
   3. Barrier materials summary by geographic region

Producer Profiles

Glossary