Water Based Barrier Coatings
Leading the future use of paper

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YOUR COMPETITIVE EDGE.

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RETHINK PAPER:
Lean and Green
OVERVIEW

• Purpose: Review the use of barrier coatings for paper packaging both now and in the future

• Considerations/Factors
  - Drivers – traditional and water based materials
  - Needs - performance, environmental, regulatory
  - Practices – materials, application, converting
  - Future trends

• Payoff: Lead the future use of paper for barrier applications.
Put simply…

Coatings improve the performance of paper and packaging performance.

Without Coatings

With Coatings
Agenda

1. Drivers
2. Needs
3. Practices
4. Future Trends
Drivers

1. Cost – selling price, applied cost, cost of use

2. Performance

- If both are present, better chance of commercial success.
Polyethylene/Wax Treatment

Amount Applied vs. Performance
Drivers - Coatings

- Nearly infinite possibilities
  - Polymers
  - Additives
  - Synthetic emulsions
  - Inorganic barriers
- Dial in on specific properties
Agenda

1. Drivers
2. Needs
3. Practices
4. Future Trends
Water Resistance

- **Future Needs**
- **Current Needs**
- **Traditional Needs**

30-min Cobb:
- <10 GSM
- <30 GSM
Water Resistance

MVTR
38 °C/90% RH

Traditional Needs

<100 GSM

Current Needs

<40 GSM

Future Needs
Oil & Grease Resistance

OGR

Future Needs

<8 Kit

Current Needs

<4 Kit

Traditional Needs
Recyclability

- Paper replaces EPS
Needs – Environmental

1. Reuse/recover trends
   - FBA Protocol
2. Biodegradability trends
   - ASTM 5338
3. Compostability trends
   - ASTM 6868
4. European mineral oil migration
Compliance

• In U.S.
  - Local, State, & Federal
    • Safe to use, handle, & process
    • Food contact
    • TSCA

• Outside U.S.
  • Chemical Inventories in 9 Countries
  • REACH and EINECS in Europe
  • DSL in Canada
Agenda

1. Drivers
2. Needs
3. Practices
4. Future Trends
Practices - Materials

• Lightweight
• Folding Carton
• Corrugated/Laminated
• Molded Pulp
Practices – Application Methodology

Blade

Roll

Air Knife

Flexo

Gravure – direct, indirect, reverse

Premetered transfer

Size press

Water box

Rod

Spray

Curtain

Brush

Dip

Slot die
Practices - Converting

- Folding
- Glueing
- Bending
- Laminating
- Abrading
- Scoring
- Heating
- Creasing
- Corrugating
- Cooling
- Scratching
- Sealing
- Printing
Agenda

1. Drivers
2. Needs
3. Practices
4. Future Trends
Future Trends

Environmental

Safe for the Environment

Use renewable resources
Future Trends

- Landfill
- Compost
- Destroy
- Recover
- Reuse
- Consumer
- Paper
- Converter
- Retail
Water Based Barrier Coatings

• Leading the future use of paper