ETP Markets and the use of PCN

Short Story of Innovation and meeting customer needs

CARE CONFERENCE
TAMPA 2013
Compounding Feedstocks

- Resin Producers built their business on virgin polymer. (Monsanto, DuPont, BASF, DSM)
- ETP was the a small piece of the overall fiber production.
- Excess and off-grade fiber resin & finished fiber was sold into the PI (Post Industrial Markets)
Examples of PI Nylon

Material was clean - low Tio2 - SIMILAR VISCOSTY TO VIRGIN
PI Pellets
What happened to PI Markets

• 15 years ago fiber productions goes to the carpet mills. (Shaw, Mohawk, Beaulieu)
• Further integration with polymer production
• Endusers demanded “More competitive “ alternatives to 100% virgin formulations
• Resin producers & compounders increasingly using PI 
• Simultaneously fiber producers pull back PI for reprocessing.
Characterizing PCN

• The cleanest (low ash) will command the highest price.
• Consistency is important.
• Most compounders can only utilize densified or pelletized product.
• Virtually all applications will be black due to mixed colors.
Melt filtered Pellets
Contamination is a killer

- PP contamination
- Latex / Calcium Carbonate
- High moisture
- Finishes, consumer chemicals
- Low elongation vs. Virgin
PCN becomes more important

• As PI becomes less available – more compounding projects must consider PCN
• PCN might be used 100% but more often used as a formulation component.
• Today most compounders and nylon resin producers have grades which are either 100% PCN (Wellmen Ecolon) or partially based on combinations of virgin/PI/PCN
Estimate of Compounding Mkts

• 100 Million lbs. of PCN going to compounding
• All nylon producers have programs in place to use more PCN (DuPont, Invista, BASF, Ascend)
• As PCN can be made more like PI – markets will expand.
• Compatibilizers, additive improvements make PCN more useable.
How ETP markets Work

• Endusers (Ford, GM, Chrysler) create application demand and specifications
• Compounders are asked to produce price/performance compounds.
• Development lead times can be 3 years.
• Automotive applications will continue to evolve to more functional –performance oriented parts.
Typical Automotive Application

- Intake manifolds
- Engine dressing ( beautification )
- Mirror Housings
- Electrical connectors
What’s driving OEMs

- The need for sustainable materials
- Design for recycling
- Nylon remains a “Workhorse Polymer” for automotive.
- Some market studies indicated automotive is responsible for more than 50% of Nylon ETP use.
Proprietary Apps are best

• Geo-hay
• Retaining walls
• Decking materials
• Fiber pad underlayment (LA Fibers)
• Totes- materials handling
• CARE can be a resource to develop your application.
Hierarchy of Price

Prime Virgin Nylon

Post Industrial

Post Consumer