



Technology Developments in Adhesives

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H.B. Fuller

Our Focus is Clear. Perfecting Adhesives.™

Why we should never have the meeting in MI.



Agenda

- Flex Lam
 - Adalis
 - Hotmelt
 - Waterbased
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Market Applications - Flex

- **New Flextra Fast adhesive allows converters to:**
 - Laminate as fast as 1,700 feet per minute
 - Slit in as few as three hours
 - Provide PAA decay in as little as two days
 - Fill and ship with finished goods/food in as few as 2 days





ADALIS

Adalis

- <http://www.adalispackaging.com/about/videos.html>
- Who are they?
 - Use hotmelt and string to create a strong tape
 - Reinforcement – handles, lower basis weights
 - Easy opening features
 - Separation features
 - Spot head welds on veneers and plywood composing.



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Adalis

- Where used on bags?
 - Pinch for easy open
 - Pasted valve for easy open
- Future Uses?
 - Lamination
 - Reinforcement for lighter basis weights





HOTMELTS - SEALING

Hotmelts – Quest for Adhesion

Use: Polywoven substrates, difficult films

Product: APAO adhesives

Feature	Benefit	Limitations
High adhesion polymer	<ul style="list-style-type: none">• Adhesion to low surface energy substrates• Wide service temperature range	<ul style="list-style-type: none">• Soft polymer – blocking• High application temperatures



Hotmelts – Quest for Adhesion

- Current Use

- Seam product



- Woven polypropylene
 - Thick gauge PE and PP

- New Applications

- Pinch Hotmelt



APAO Pinch Options

Wax Emulsion Overlay	Two shot hot Wax overlay	Alter adhesive pattern
Use low visc wax emulsion over hotmelt	Formulate adhesive to use wax in two shot hot	Create gaps
•Lab success	•Lab success	Patterns
•Limitation: Grease resistance	•Improved grease resistance	
		
		•Improved blocking in lab on fiberization.
		•No additional use of wax – will pass grease test.

Hotmelts – Moisture Curing Applications

Feature	Benefit	Limitations
Cross-linking technology	<ul style="list-style-type: none">• High adhesion• Chemical resistance• Moisture resistance• Extreme temperature resistance	<ul style="list-style-type: none">• Hotmelt technology has the highest tack.• Learning curve.





WATERBASED

Waterbased Products

Moisture Content is the most frequent complaint.....

Potato Starch	High solids liquid RFU	Hotmelt
Flexibility of solids	Mod flexibility of solids	Low flexibility of solids
20-30%	40-65%	100%
16 g wet = 3 g dry	8 g wet = 4 gram dry	2 g

....there are no magic bullets!



Improved Product Performance

Product: Higher solids polymers

Use: seam, spot, bottom paste & sweetener additive



Feature	Benefit
Higher solids polymers	Cost reduction through mileage improvement
Easily blended with starch	Strong performer on high porosity paper

Summary

- Hotmelt tapes
 - Differentiation
 - Cost reduction
 - Hotmelts
 - Different applications of proven technologies
 - Waterbased
 - Potato Starch
 - High Solids Polymers
 - Value / complaint reductions
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THANK YOU

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