

VAE – A New Chemistry for Paper and Paperboard Coating

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The primary role of binders in paper coating

- **Contribute to coating runnability**
- **Bond pigment particles together and to the fibers**
- **Add to the substrate's appearance**
– *high whiteness, gloss*
- **Impart the desired printing properties**
– *vivid images, clear text*
- **Satisfy other end use performance criteria**
– *glueability, low odor*

Comparison of Major Classes of Synthetic Binders

◆ Good

◆ ◆ Better

◆ ◆ ◆ Best

Priority	Property	PVAc	SA	SBR
1	Runnability	◆	◆ ◆	◆ ◆ ◆
1	Fiber coverage	◆ ◆ ◆	◆ ◆	◆
2	Binding strength	◆	◆ ◆	◆ ◆ ◆
2	Print quality	◆	◆ ◆ ◆	◆ ◆
2	Glueability (board)	◆ ◆ ◆	◆ ◆	◆
3	Whiteness	◆ ◆ ◆	◆ ◆	◆
3	Gloss	◆	◆ ◆	◆ ◆ ◆
3	Smoothness	◆	◆ ◆	◆ ◆ ◆
3	Stiffness	◆ ◆ ◆	◆ ◆	◆
3	Odor	◆ ◆ ◆	◆ ◆	◆

PVAc for coated board / paper – *historical overview*

PVAc advantages versus Styrenics

- **Less expensive**
- **Coating brightness and opacity**
- **Ink receptivity**
- **Glueability**
- **Low Odor**
- **Stiffness**

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PVAc disadvantages versus Styrenics performance gaps

- Smoothness
- Sheet gloss
- Binding strength
- Print mottle
- White Pitch (paper mills only)

Our solution:

BRITECOAT™ 2730 vinyl acetate ethylene



✓ Ethylene component

- imparts more flexibility than PVAc (facilitates smoothness, gloss)
- increases molecular weight (higher binding strength)
- gives solvent resistance (less print mottle)

✓ Multifunctional monomer and Carboxylation components

- further boost in molecular weight

✓ Surfactant package

- APE free

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Property	PVAc	SA	SBR	2730 VAE
Runnability	◆	◆ ◆	◆ ◆ ◆	◆ ◆
Fiber coverage	◆ ◆ ◆	◆ ◆	◆	◆ ◆ ◆
Binding strength	◆	◆ ◆	◆ ◆ ◆	◆ ◆
Print quality	◆	◆ ◆ ◆	◆ ◆	◆ ◆ ◆
Glueability (board)	◆ ◆ ◆	◆ ◆	◆	◆ ◆ ◆
Whiteness	◆ ◆ ◆	◆ ◆	◆	◆ ◆ ◆
Gloss	◆	◆ ◆	◆ ◆ ◆	◆ ◆
Smoothness	◆	◆ ◆	◆ ◆ ◆	◆ ◆
Stiffness	◆ ◆ ◆	◆ ◆	◆	◆ ◆
Odor	◆ ◆ ◆	◆ ◆	◆	◆ ◆ ◆

What does fiber coverage mean to you?

Improved Fiber Coverage

- **Smoothness**
- **Coat weight reduction**
- **Potential for less TiO_2**

THANK YOU

Please stop by and see us at Booth 431 to learn more about BriteCoat and how we help you utilize this new chemistry to improve your end-use performance