



J. RETTENMAIER USA LP



**Arbocel[®] UFC100
Ultrafine Cellulose
for Paper and Board
Coating**

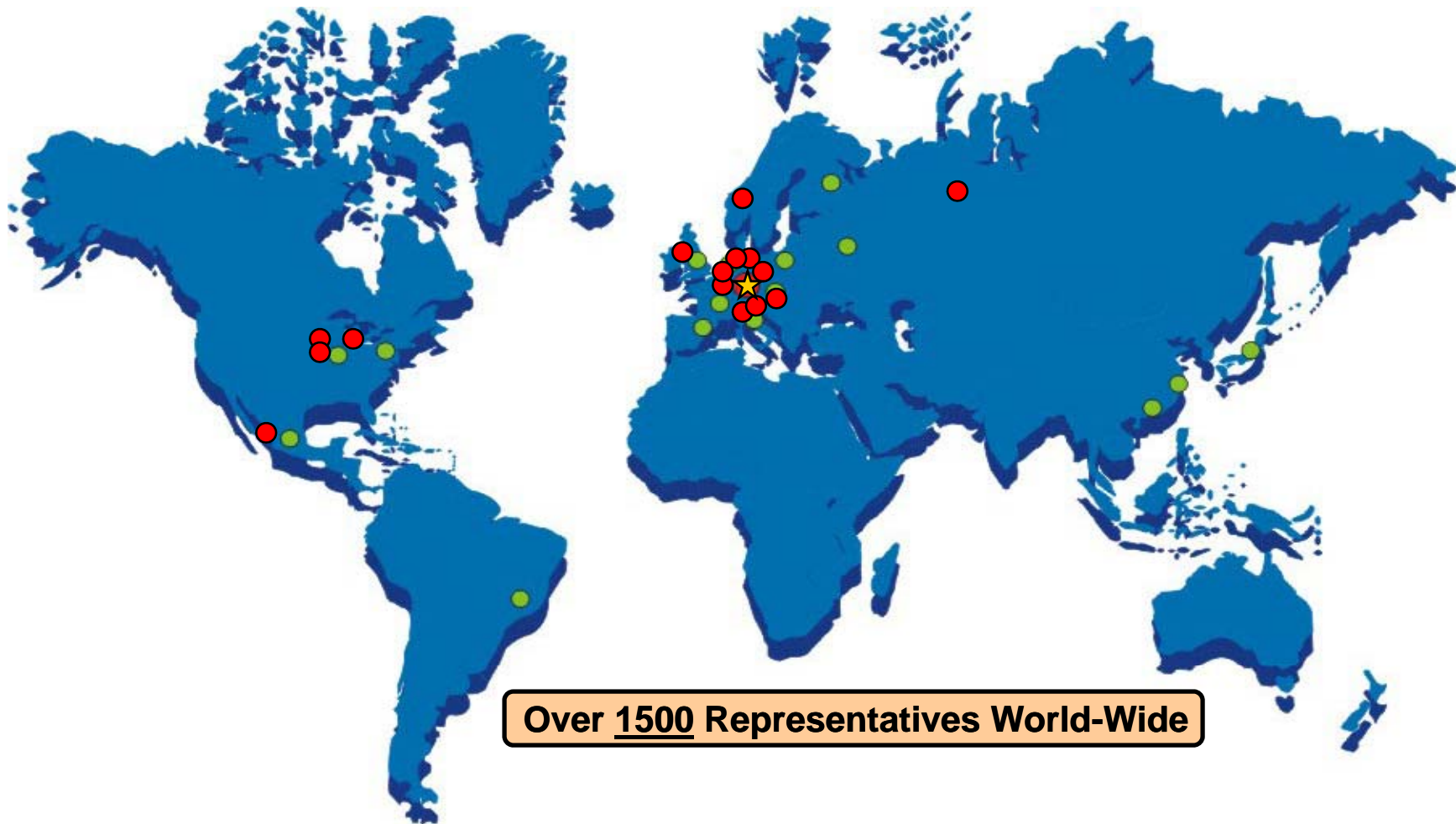
May 1-4
PaperCon 2011
Northern Kentucky Convention Center

RETHINK PAPER:
Lean and Green



Member of the JRS Group

- 17 Sales Offices Worldwide
- 17 Manufacturing Locations



Over 1500 Representatives World-Wide



J. RETTENMAIER USA LP

Schoolcraft, Michigan

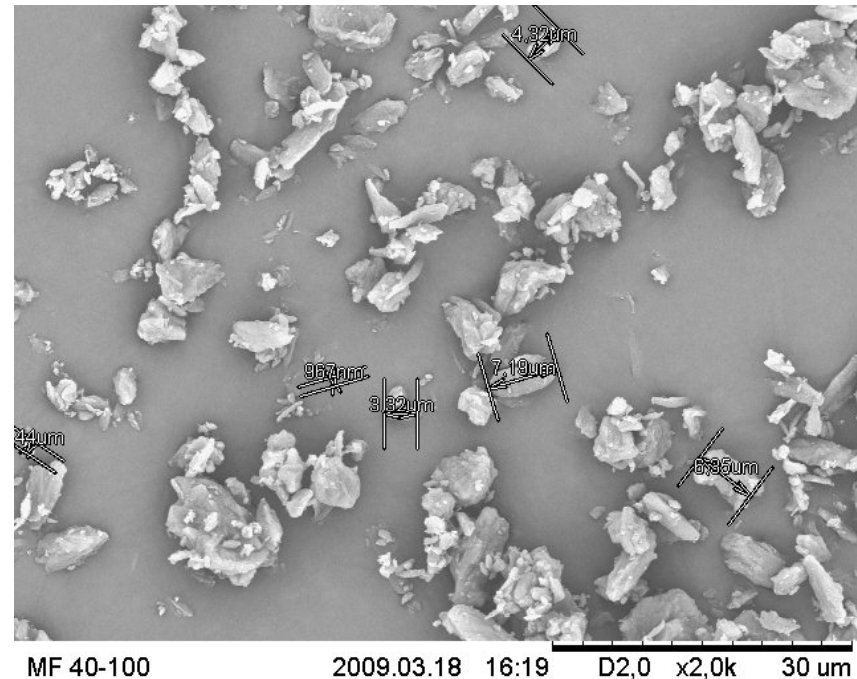
- Headquarters of North American Operations

ARBOCEL[®] *Powdered Cellulose*

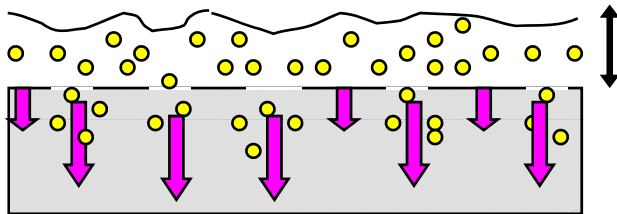


What is Arbocel[®] UFC100 Ultrafine Cellulose?

- **Unmodified Cellulose**
 - No modification chemistry
- **Powder Form**
- **Insoluble in Water**
- **High Water Binding Capacity**
 - Even at high temperature and high shearing forces

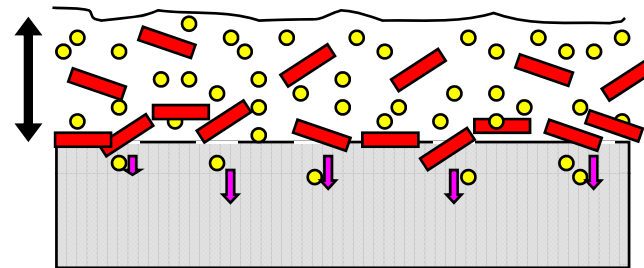


Advantage of UFC100 Use = Improved Penetration Behavior



Without UFC100

- high and uneven water, binder and additive penetration
- paper strength losses
- sagging of color into the basepaper
- solids increase in the color cycle and increasing blade contact pressure



With UFC100

- good water retention under pressure spikes and at elevated temperatures
- barrier formation (reduced penetration)
- enhanced coating holdout (higher coat thickness)



Benefits For Paper Producers

- **Good water retention and reduced penetration into basepaper**
 - Especially under pressure spikes and high temperatures
- **Savings of binder and water soluble additives**
- **Higher solids content**
- **Reduced variation of solids content in recirculation**
- **Energy cost savings**
- **Better coverage and better coating hold-out**
- **Higher coating gloss & smoothness**
- **Increased product sustainability**



Benefits for Paper Converters and Printers

- **Microporosity – No film formation like starch**
- **Reduced mottling and blistering**
- **Improved printability and glueability**
- **Printing inks stand better on paper coating**
- **Savings of printing inks**
- **Brilliant print images**



LWC / Coated Groundwood

- **Targets & results:**
 - significant cost savings
 - same or slightly improved paper quality
 - reduced printing ink consumption by **10%**
- **Status:** pilot coater trial
- **Coating device:** metered size press
- **Coat weight:** 8.5 gsm each side
- **Machine speed:** 1,000 m/min

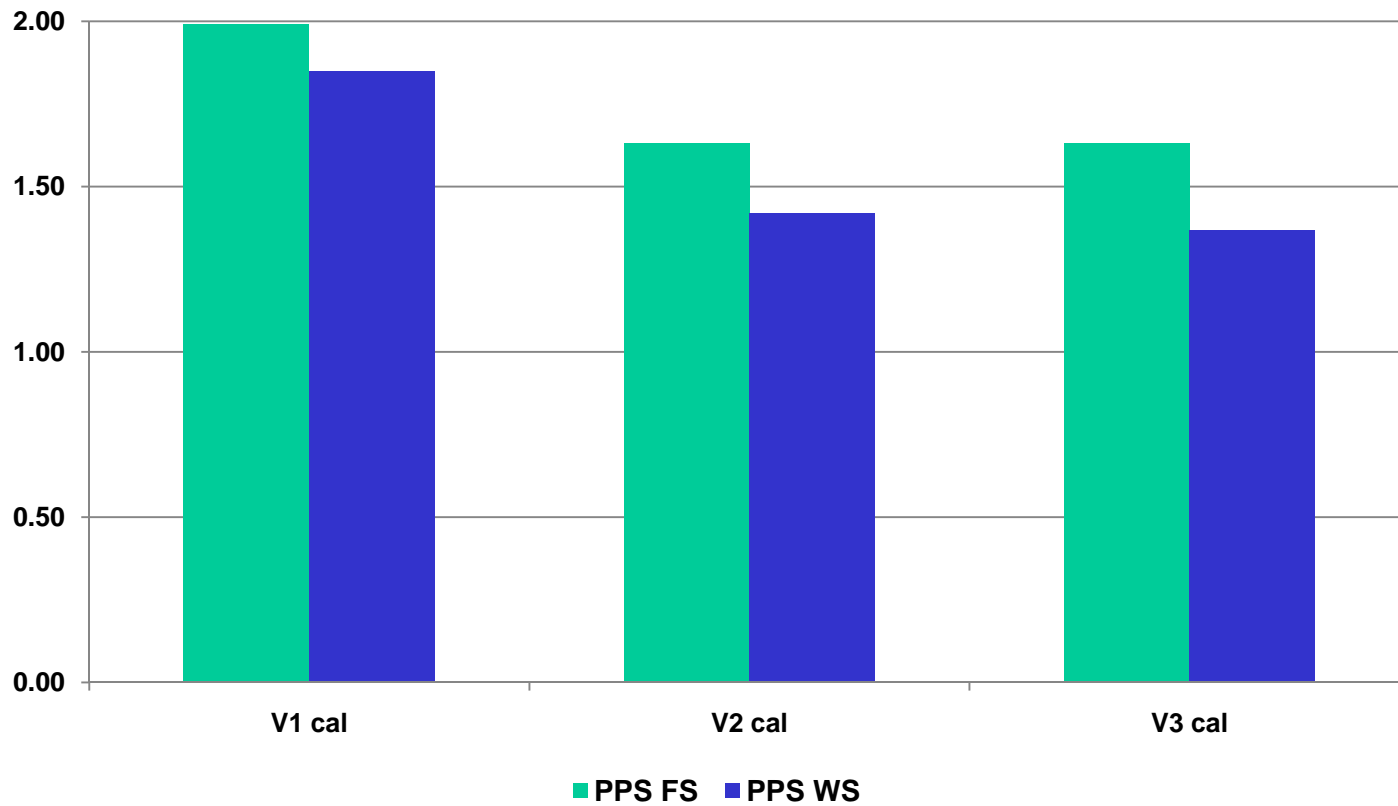


Formulation

| | V1 | V2 | V3 |
|-------------------------------------|------|------|------|
| <i>Pigments:</i> | | | |
| Calcium Carbonate | 80 | 80 | 80 |
| Kaolin | 20 | 20 | 20 |
| <i>Additives:</i> | | | |
| Binder | 8 | 7 | 7 |
| Starch | 3 | 0 | 0 |
| PVA | 0.9 | 0.9 | 0.9 |
| OBA | 1 | 1 | 1 |
| Thickener | 0.1 | 0 | 0 |
| ARBOCEL UFC 100 | 0 | 0.3 | 0.5 |
| Solids[%] | 66.7 | 70.5 | 70.5 |
| Brookfield viscosity,100 RPM [mPas] | 1080 | 490 | 470 |

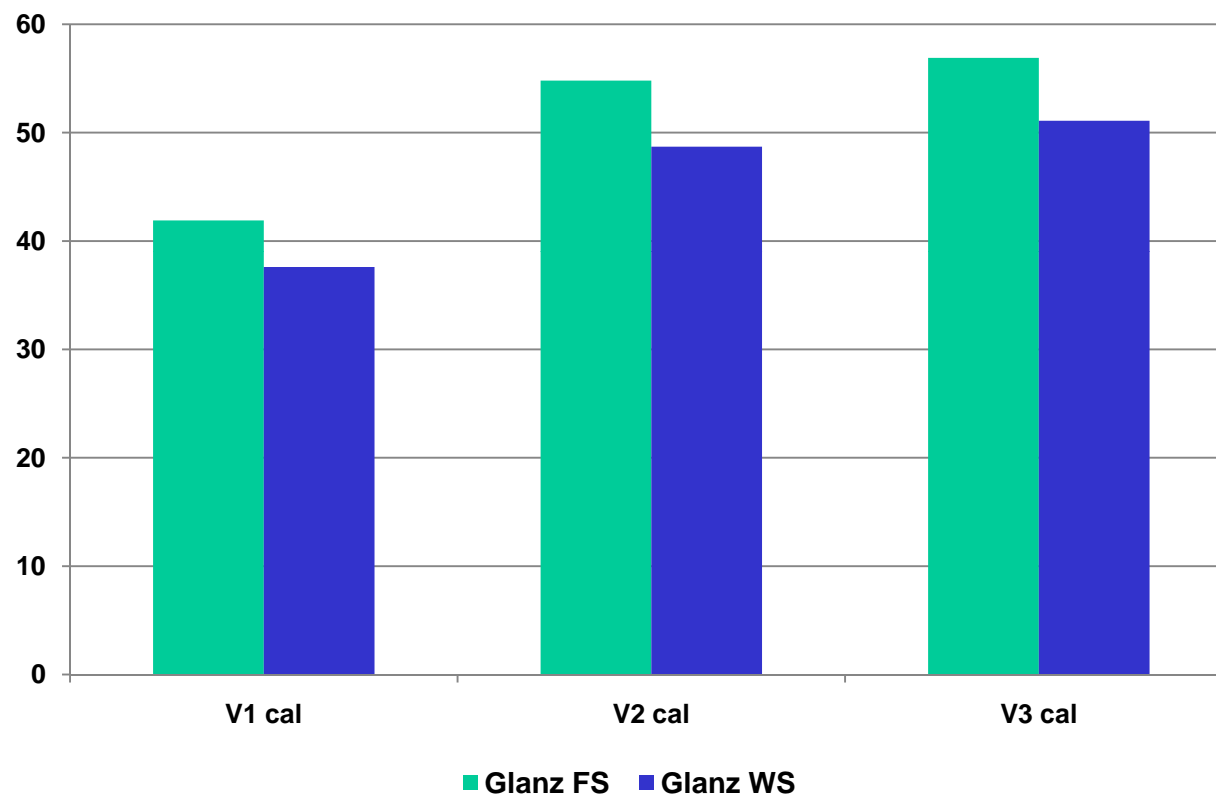


PPS Roughness





TAPPI Gloss





Final Results

- **Runnability: Problem Free**
- **Printability: No significant differences between specimens as regards print appearance and cloudiness.**
- **Printing characteristics and dot gain: All specimens have met the FOGRA standard.**
- **12.5% reduction in latex binder**
 - Major cost savings
 - Increased sustainability level of paper eliminating portion of petroleum latex



Questions / Comments?

Thank You



Please visit us at booth **609**

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