



### 1. Fundamentals of Rheology

- What is rheology
- Elastic materials: solids
- Viscous materials: fluids
- Shear stress, shear rate and viscosity
- Flow curves (shear thinning and thickening)
- Extensional viscosity
- Laminar and turbulent flow
- Normal forces

### 2. Rheology of Coating Colors

- General description
  - Surface chemistry
  - Hydrodynamic factors
- Rheology of suspensions
- Effect of coating color components
  - Pigment
  - Latex
  - Thickeners
  - Dispersants
- Water retention / dewatering

### 3. Viscometers and Coating Process

- Shear rates of coating process and viscometers
- Brookfield viscometer
- Rotational viscometers
- Capillary viscometers
- Comparison of viscometers

### 4. Blade Coating

- Principle of blade coating
- Application of coating color
  - Roll application
  - Short dwell application
  - Jet application
  - Comparison of application methods
- Shear rate beneath the blade
- Viscosity and coat weight development
- Rheological runnability problems
- Non-Newtonian rheology

### 5. Film Transfer, Spray and Curtain Coating

- Comparison of coating methods
- Film transfer coating
  - Advantages and limitations
  - Rheology and runnability
- Spray coating
  - Advantages and limitations
  - Rheology and runnability
- Curtain coating
  - Advantages and limitations
  - Rheology and runnability

### 6. Interpretation of Flow Curves and Coating Color Development

- Shape of the viscosity curve
- Additional remarks on interpretation of flow curves
  - Shear rate - shear stress - viscosity
  - Effect of solids content
  - Effect of temperature
- Practical examples of interpretation
- Coating color development
  - Ideal coating color
  - Improving productivity
  - Improving optical properties

### Want to learn more about COATING RHEOLOGY?

Rheology Seminars are designed to teams who wants to get better understanding of coating rheology.

**1 DAY SEMINAR**  
**350 € / person** (Min. 10 persons)

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