

# Coating Additives Solutions for UV curing wood coatings



UV-curable coatings have many advantages: They are environmentally friendly, nearly universally applicable, have a very fast, efficient, and productive application process. But expanding their application field comes with few challenges. How do you overcome the restrictions on the matting ability?

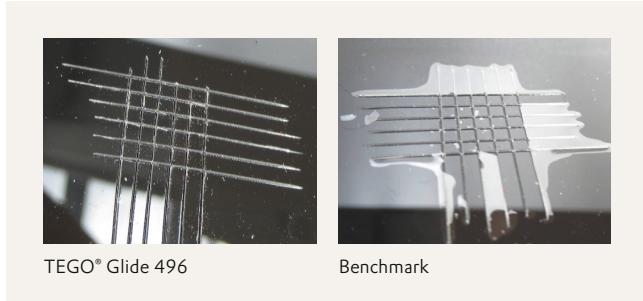
## SLIP AND FLOW ADDITIVE

### TEGO® Glide 432

- Good haptic, slip property
- Good scratch resistance
- Good substrate wetting and leveling property
- Less foam stabilization
- Polyether siloxane copolymer

### TEGO® Glide 496

- Good scratch resistance
- Good substrate wetting & leveling property
- Good compatibility
- Without compromising recoatability
- Various regulations compliance
- Polyether siloxane copolymer



### Leveling and substrate wetting test



0.3 % Competitor



0.3 % TEGO® Glide 432



0.3 % TEGO® Glide 496

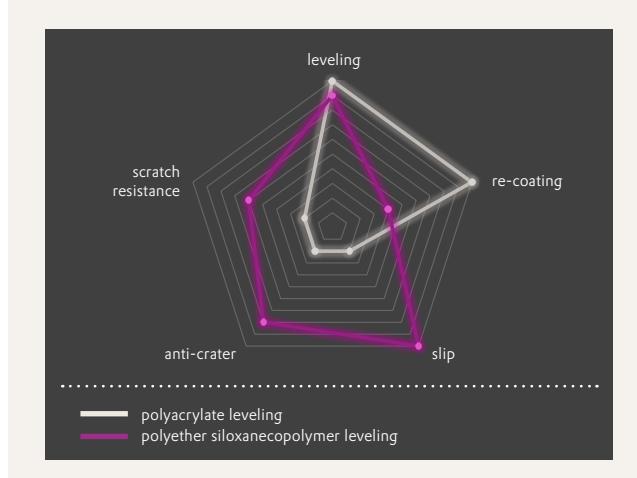
Good wetting and leveling property

How do you ensure a smooth and perfect surface appearance e.g. for high gloss? And how do you balance the formulation and application machine know-how?

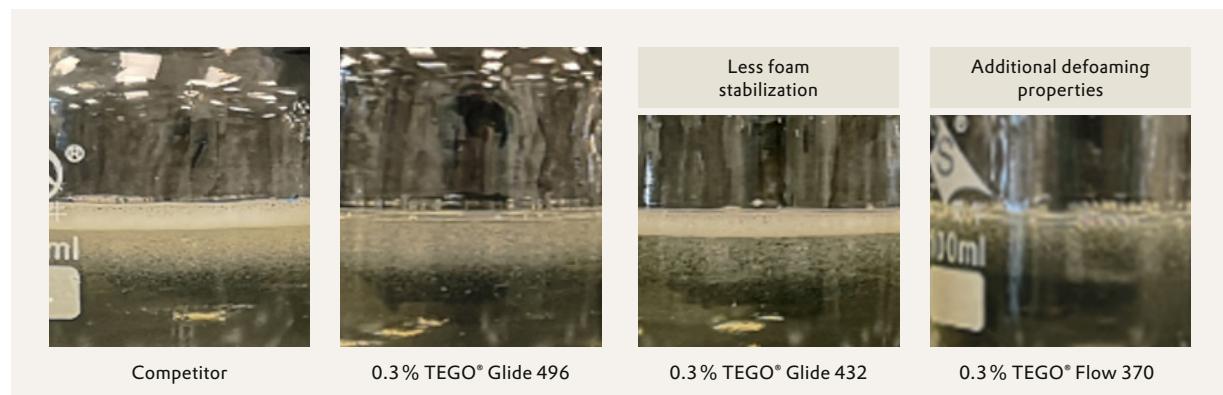
## SLIP AND FLOW ADDITIVE

### TEGO® Flow 370

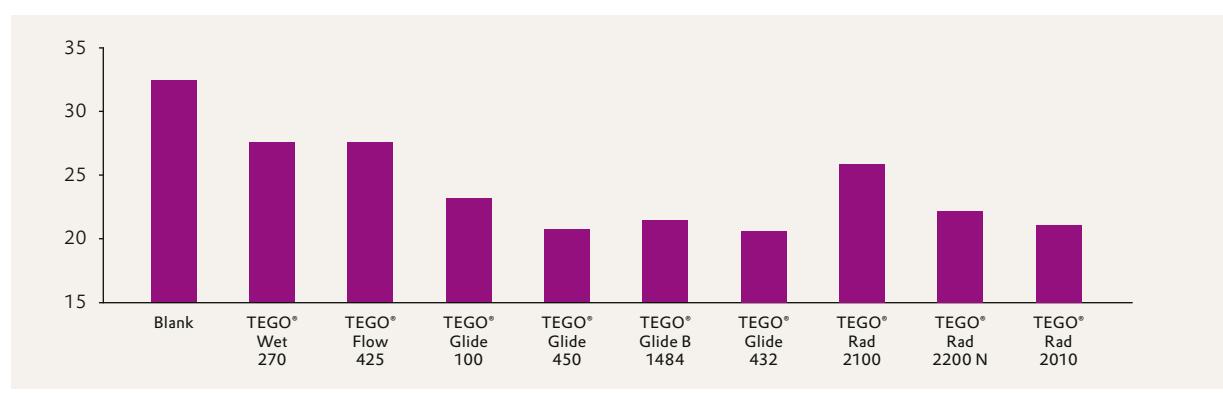
- Excellent flow promotion
- Additional defoaming properties
- Good compatibility
- Recoatable
- Silicone-free polyacrylate leveling agent



### Compatibility and foam elimination test



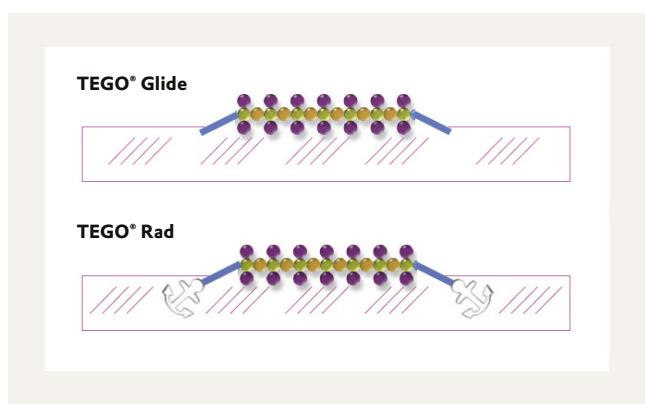
### Static surface tension reduction test – dyne (Dosage 1.0 %)



## RADIATION CURING ADDITIVE

### TEGO® Rad Characteristic

- Radically cross-linkable
- Introduce durable surface effects



### TEGO® Rad 2100

- Excellent leveling and flow
- Highly compatible
- Low foaming

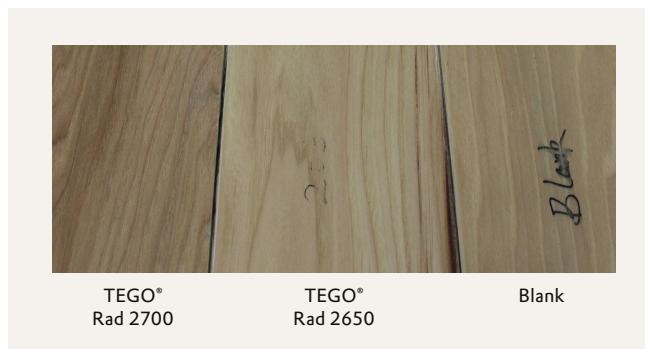
### TEGO® Rad 2300

- Good haptic, slip
- Good scratch resistance
- Excellent substrate wetting
- No tendency to create foam
- Suitable for both pigmented and clear formulations

### TEGO® Rad 2700

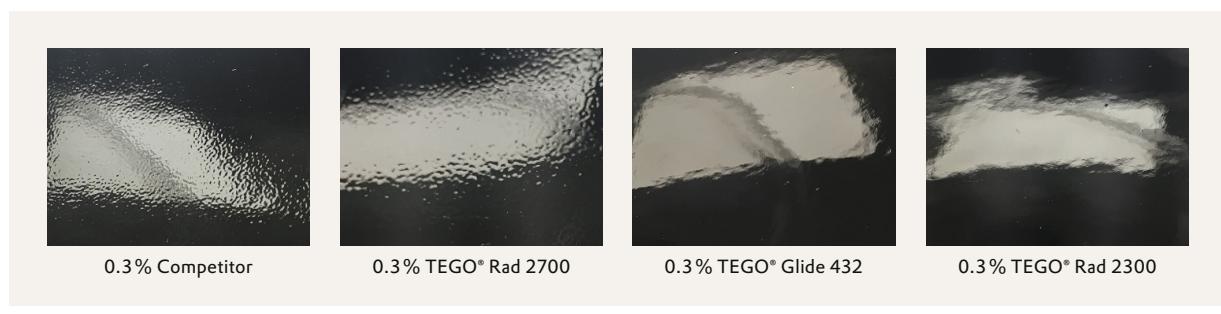
- Utmost release and slip properties
- Efficient defoamer
- Efficient anti-graffiti property

### TEGO® Rad 2700 for anti-graffiti



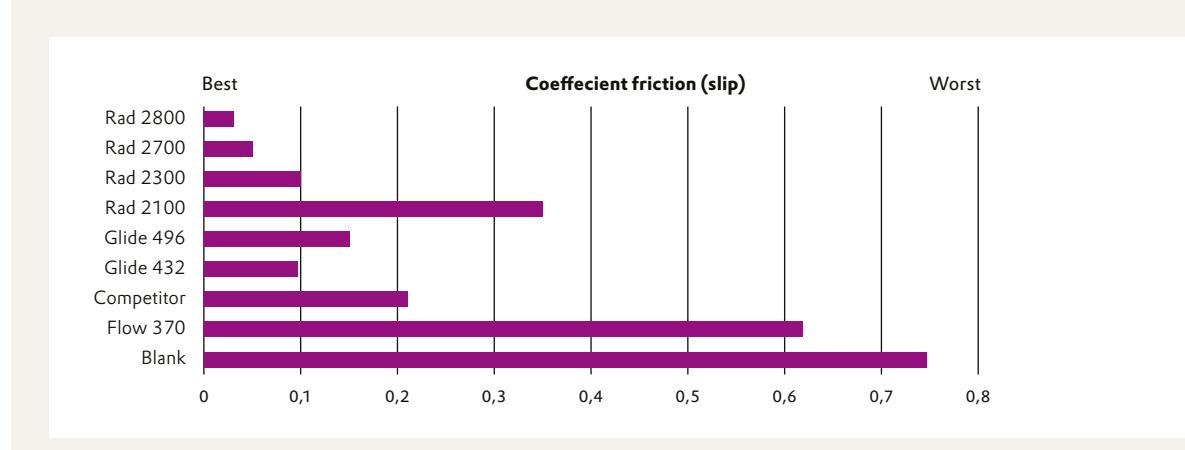
### TEGO® Glide / TEGO® Rad Substrate wetting test

Epoxy/PUD acrylate UV system 25um on Leneta card Dosage: 0.3 %

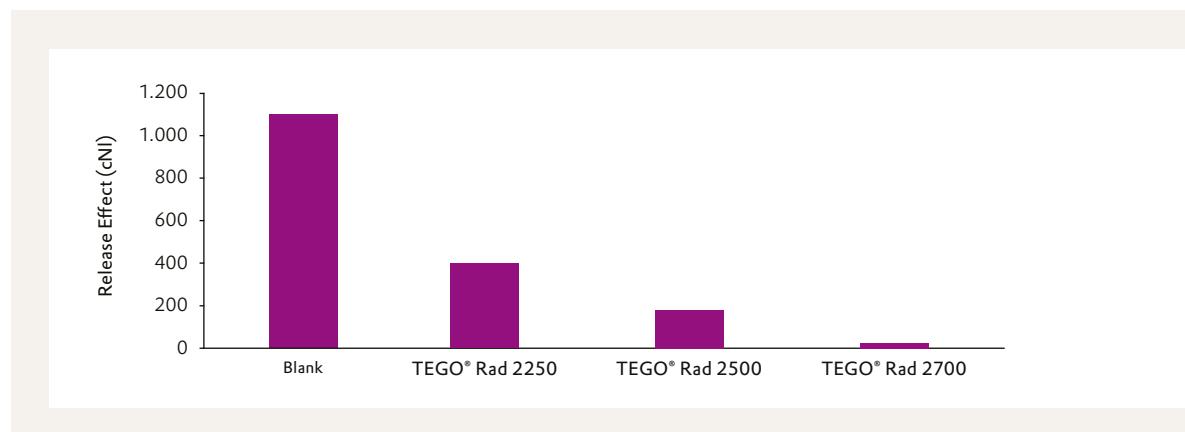


## RADIATION CURING ADDITIVE

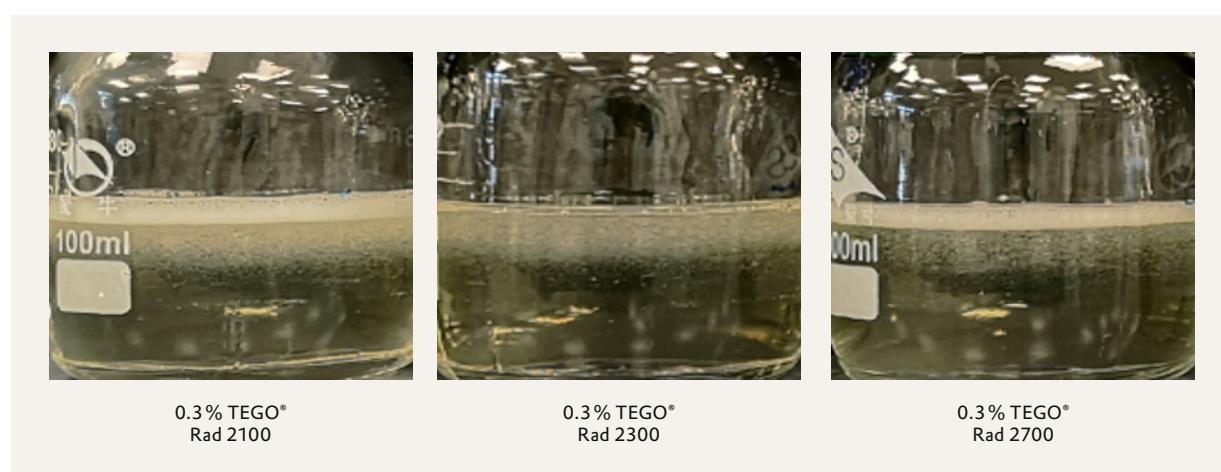
### TEGO® Flow / TEGO® Glide / TEGO® Rad Slip properties (Dosage 0.3 %)



### TEGO® Rad – Release Effect in UV Coatings (Dosage 0.3 %)



### TEGO® Rad Radiation curing additive Compatibility and foam elimination test



## DEAERATOR AND DEFOAMER

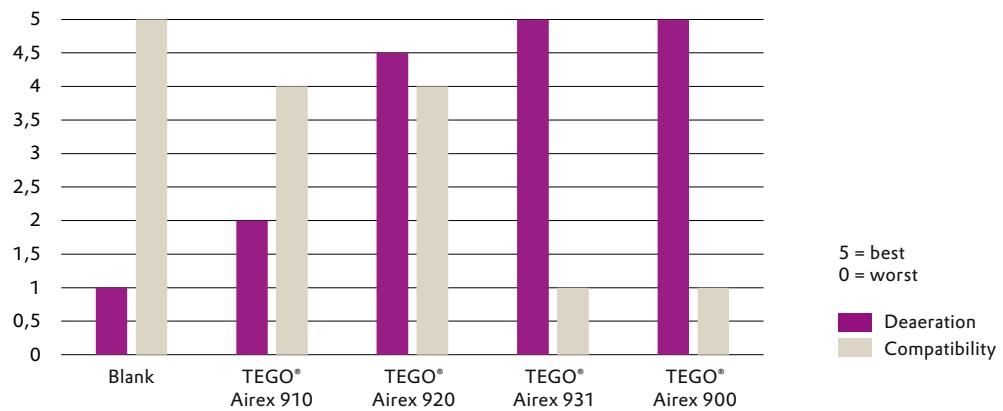
### TEGO® Airex 920

- Excellent balance on effectiveness and compatibility
- Recoatable and glueable
- Easy to incorporate
- Universally used deaerator for UV formulations
- Suitable for different application methods
- Silicone-free deaerator concentrate

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### The perfectly balanced deaerator

UV parquet coating based on PU / Epoxy acrylate, roller application



### Excellent balance on effectiveness and compatibility

UV parquet coating based on PU/Epoxy acrylate

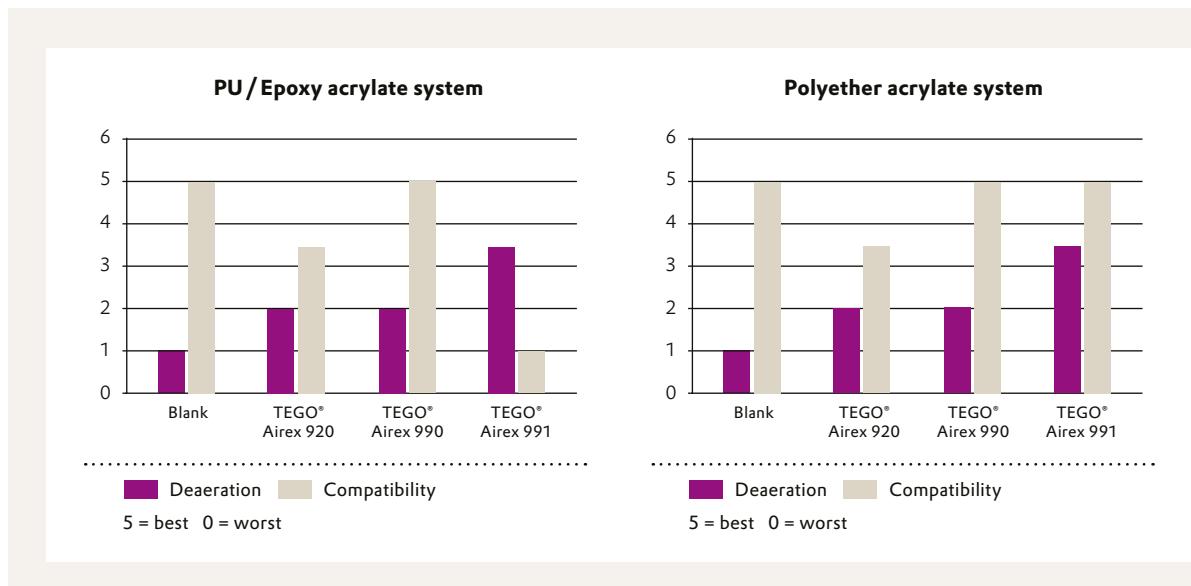


## DEAERATOR AND DEFOAMER

### TEGO® Airex 990

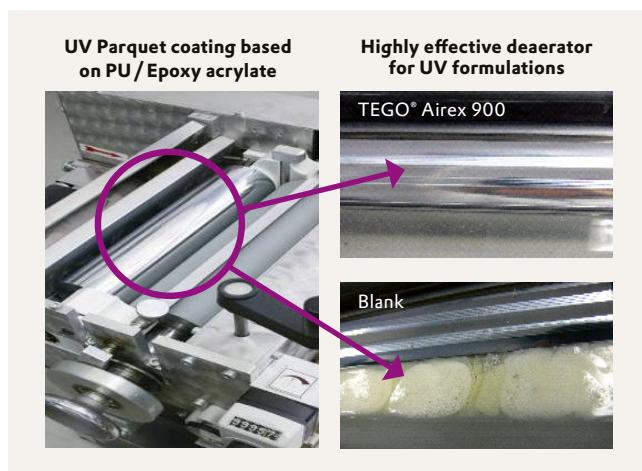
- Excellent compatibility deaerator with good efficiency
- Excellent for sensitive coatings, easy to incorporate
- Universal use for all application methods
- 100% active matter content

### Excellent compatibility deaerator with good efficiency (Dosage 0.3 %)



### TEGO® Airex 900

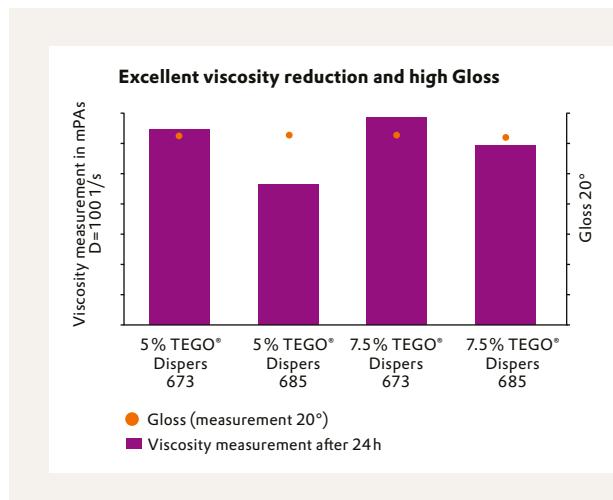
- Highly effective deaerator for UV formulations
- Especially suitable for roller applications
- Outstanding performance in higher viscosity formulations
- Mainly recommended for matt and pigmented formulations
- 100% active matter content



## WETTING AND DISPERSING ADDITIVE

### TEGO® Dispers 685

- Excellent viscosity reduction and flow behavior
- Excellent color strength and color acceptance
- Excellent gloss and haze property
- Stabilizes all kinds of pigments
- Outstanding performance even with critical organic pigments
- 100% active matter and liquid supply form



### High Gloss PU / Epoxy acrylate UV white,

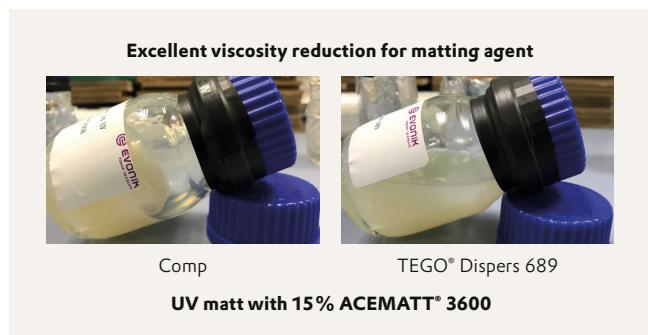
Tinted with 0.5% yellow paste,  
2 weeks storage



### TEGO® Dispers 689

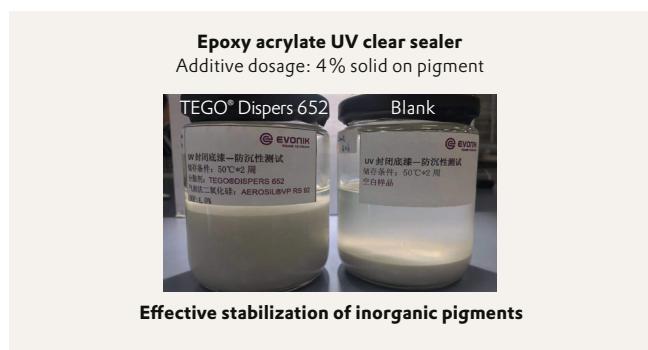
- Excellent viscosity reduction for matting agent
- Additional flow promotion
- Enables high matting agent concentrations in UV coatings
- Provides long-lasting matting effect
- 100% active matter and liquid supply form

**Note:** TEGO® Dispers 688 will be the alternative if need better viscosity reduction (contains solvent)



### TEGO® Dispers 652

- Good viscosity reduction and grinding efficiency for inorganic pigments
- Effective stabilization of inorganic pigments
- Improve color acceptance
- 100% active matter and liquid supply form



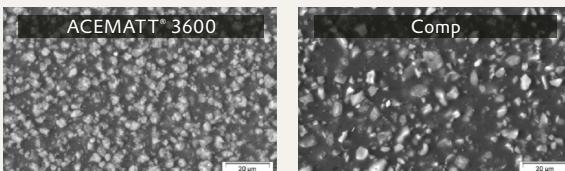
## MATTING AGENT

### ACEMATT® 3600

A fine particle sized specially after-treated precipitated silica, ideal for UV coatings

- Ideal for radiation curing coatings
- Very low viscosity impact
- High surface smoothness

SEM-Picture of ACEMATT® 3600 in UV Coating  
Rounder particle morphology, More uniform particle distribution



High transparency of ACEMATT® 3600



### ACEMATT® OK 500

A wax-treated, medium particle sized precipitated silica

- Very low viscosity impact
- High surface smoothness
- Universal use for all application

### ACEMATT® 607

A fine particlesized wax-treated precipitated silica

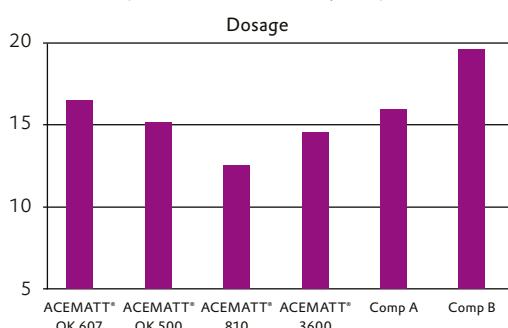
- Very low viscosity impact
- High surface smoothness

### ACEMATT® 810

An untreated, coarse particle sized precipitated silica

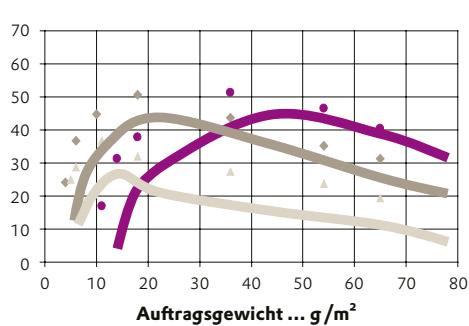
- Highly efficient
- very low sheen

Matting efficiency – 9µm DFT, Gloss Unit 10  
(Gloss measurement by 60°)



### The matting effect in relation to layer thickness and particle size

Measurement by 60° – Gloss value under differenct layer thickness



Gloss value under differenct layer thickness (Measurement by 60°)

## **SUBSTRATE WETTING ADDITIVE**

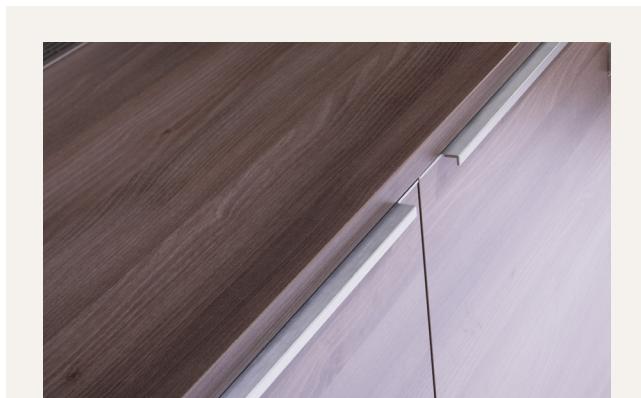
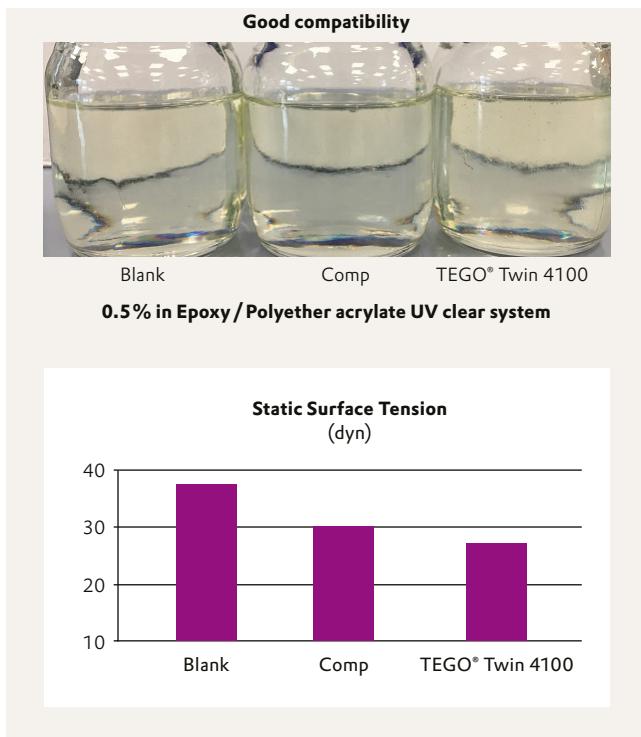
## TEGO® Twin 4100

- Excellent crater prevention and elimination
- Supports flow and leveling
- No foam stabilization
- Good effectiveness
- Good compatibility
- A siloxane-based gemini surfactant



## TEGO® Wet 500

- Good reduction of dynamic surface tension
- Low foaming
- Improve the leveling of roller application
- Improve the stability of curtain application
- A silicone-free substrate



## SILICA-BASED RHEOLOGY CONTROL ADDITIVE

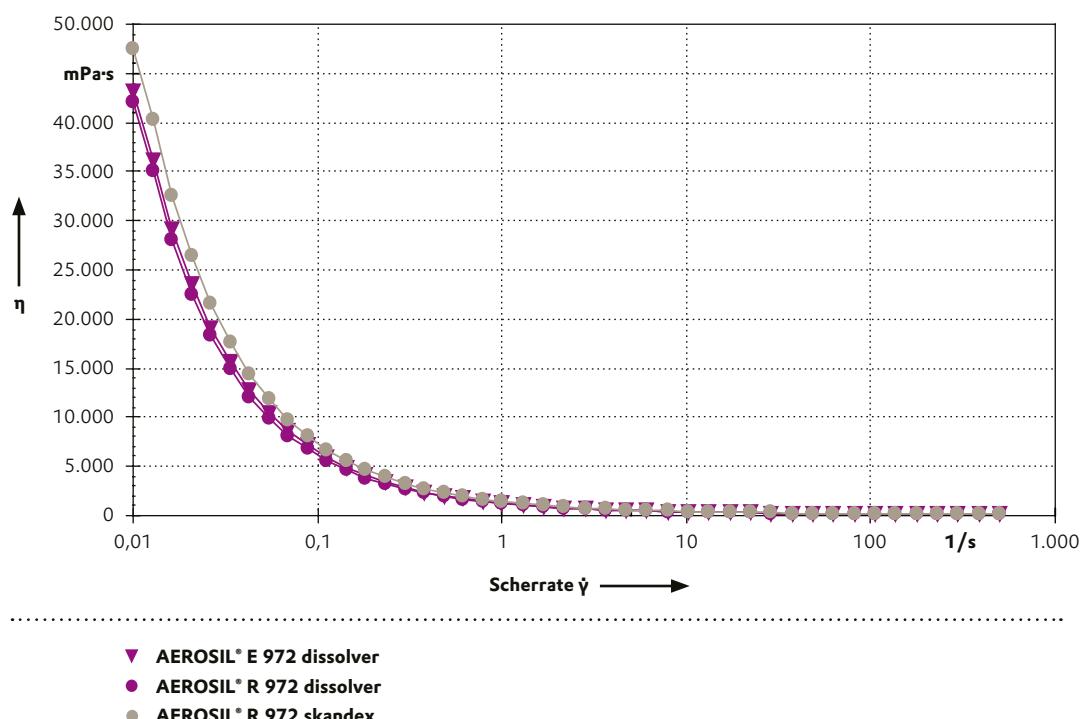
### Easy to Disperse fumed silica – AEROSIL® E 972

AEROSIL® E 972 is a developmental easy-to-disperse fumed silica hydrophobized with DDS (Dimethyldichlorosilane)

- Improvement of anti-settling property
- Improvement of anti-sagging property
- Improvement rheology property
- Easy to disperse

#### Dispersing property – 2% in Full Gloss UV topcoat for test

PRODUCT	Dispersion		Grindometer value ( $\mu\text{m}$ )
	equipment	remarks	
AEROSIL® R 972	45 min Skandex	Glass beads	13
AEROSIL® R 972	15 min Dissolver	8 m/s	38
AEROSIL® E 972	15 min Dissolver	8 m/s	13



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**Evonik Operations GmbH**  
Goldschmidtstraße 100  
45127 Essen  
Germany  
Phone +49 201 173-2222  
[coating-additives@evonik.com](mailto:coating-additives@evonik.com)  
[www.coating-additives.com](http://www.coating-additives.com)

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ALBIDUR®, CARBOWET®,  
DYNOL™, NANOCRYL®,  
NANOPOL®, SILIKOFTAL®,  
SILIKOPHEN®, SILIKOPON®,  
SILIKOPUR®, SILIKOTOP®,  
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