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?

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® 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

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**Leveling and substrate wetting test**

**TEGO® Glide 432**
- Good wetting and leveling property

**Compatibility and foam elimination test**

**TEGO® Flow 370**
- Excellent flow promotion
- Additional defoaming properties
- Good compatibility
- Recoatable
- Silicone-free polyacrylate leveling agent

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**Static surface tension reduction test – dyne (Dose 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 %

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

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

TEGO® Rad Radiation curing additive
Compatibility and foam elimination test

0.3 % Competitor
0.3 % TEGO® Rad 2700
0.3 % TEGO® Rad 2300
0.3 % TEGO® Rad 2100
0.3 % TEGO® Glide 432
DEAERATOR AND DEFOAMER

**TEGO® Airex 920**
- Excellent balance on effectiveness and compatibility
- Reccoatable and glueable
- Easy to incorporate
- Universally used deaerator for UV formulations
- Suitable for different application methods
- Silicone-free deaerator concentrate

The perfectly balanced deaerator
UV parquet coating based on PU/Epoxy acrylate, roller application

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**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%)

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**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

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![Image of TEGO® Airex 920 and TEGO® Airex 990](image_url)
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

![Viscosity reduction and high Gloss](chart)

**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

**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](image)

**ACEMATT® 607**
A fine particle sized 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

The matting effect in relation to layer thickness and particle size
Measurement by 60° – Gloss value under different layer thickness

**ACEMATT® OK 500**
A wax-treated, medium particle sized precipitated silica
- Very low viscosity impact
- High surface smoothness
- Universal use for all application

**ACEMATT® OK 607**
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![SEM-Picture of ACEMATT® 3600 in UV Coating](image)

High transparency of ACEMATT® 3600

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![Matting efficiency – 9um DFT, Gloss Unit 10 (Gloss measurement by 60°)](graph)

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![The matting effect in relation to layer thickness and particle size Measurement by 60° – Gloss value under different layer thickness](graph)
**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

![Image showing excellent crater prevention and supports leveling]

**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

![Image showing static surface tension graph]

**SILICA-BASED RHEOLOGY CONTROL ADDITIVE**

**Easy to Disperse fumed silica – AEROSIL® E 972**
AEROSIL® E 972 is a developmental easy-to-disperse fumed silica hydropbized 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**

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>Dispersion</th>
<th>Grindometer value (µm)</th>
</tr>
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<tbody>
<tr>
<td>AEROSIL R 972</td>
<td>45 min Skandex</td>
<td>Glass beads</td>
</tr>
<tr>
<td>AEROSIL R 972</td>
<td>15 min Dissolver</td>
<td>8 m/s</td>
</tr>
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<td>AEROSIL® E 972</td>
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**Dispersion and grindometer value**

![Graph showing dispersion and grindometer value]

**PRODUCT Dispersion Grindometer value (µm)**

<table>
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<tr>
<th>equipment</th>
<th>remarks</th>
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<tr>
<td>AEROSIL® R 972</td>
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<td>AEROSIL® E 972</td>
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<td>AEROSIL® R 972 dissolver</td>
<td></td>
</tr>
<tr>
<td>AEROSIL® R 972 skandex</td>
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