

# Architectural Coatings

## Modern formulation guidelines

**HUNGAROCOAT 2018**  
X. INTERNATIONAL EXHIBITION AND  
CONFERENCE ON PAINT INDUSTRY



# Content

## Modern formulation guidelines for Architectural coatings

- Hydrophobization of facades with low dirt pick up and improved workability

**TEGO® Phobe**

- Efficient defoaming during processing, filling and application

**TEGO® Foamex**

- Raw material optimization and improved colorant acceptance

**CARBOWET®; TEGO® Dispers**

- Efficient MFFT-Reduction for low-temperature application

**SURFYNOL®**





**Hydrophobization of facades  
with low dirt pick up and improved workability**

**TEGO® Phobe**

# TEGO® Hydrophobing Agents

Hydrophobing Agents designed for emulsion paints in façade and interior paints, insulating materials, plaster and plaster boards

## TEGO® Phobe 1659 – Silicone Resin

- Highest efficiency at lowest dosage level
- Lower dirt pick-up
- Proved TEGO® quality
- universal use in silicone resin paint, silicate paints and plasters

## TEGO® Phobe 1409 – amino functional Polysiloxane

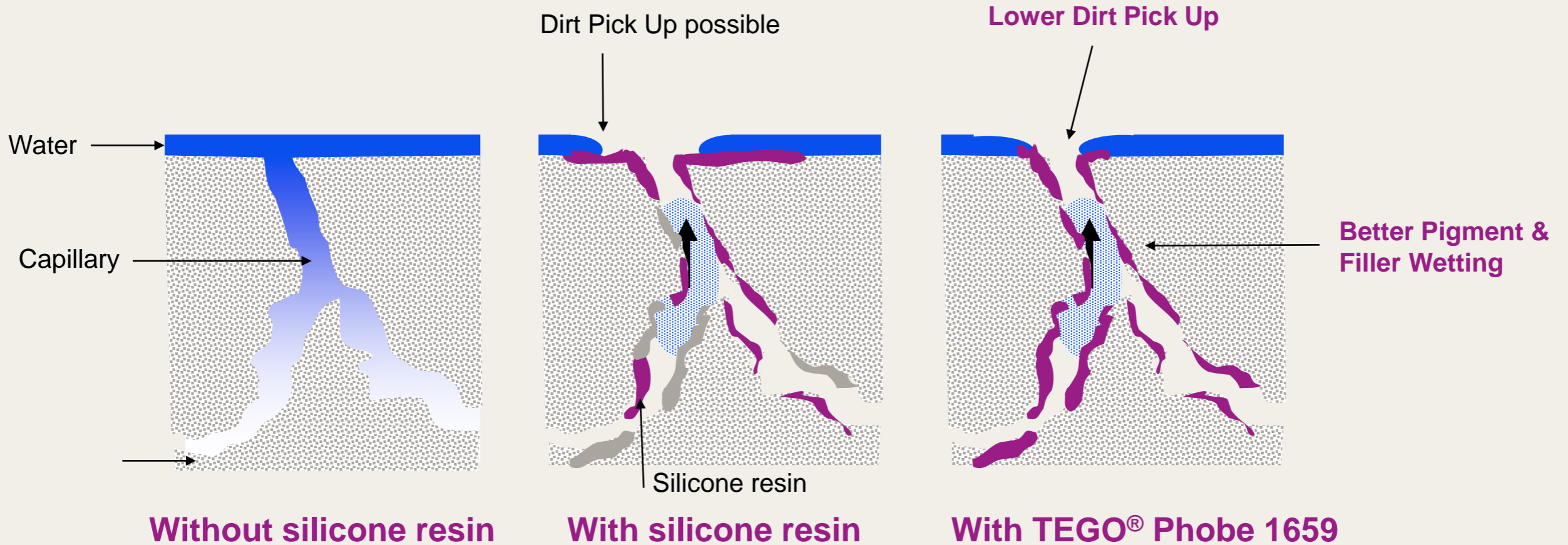
- Super fast drying limits algae and microorganism growth
- W/B Emulsion suitable for EcoLabel Products
- Beading Effect





# Better Wetting of Pigment and Fillers improves silicon resin effect

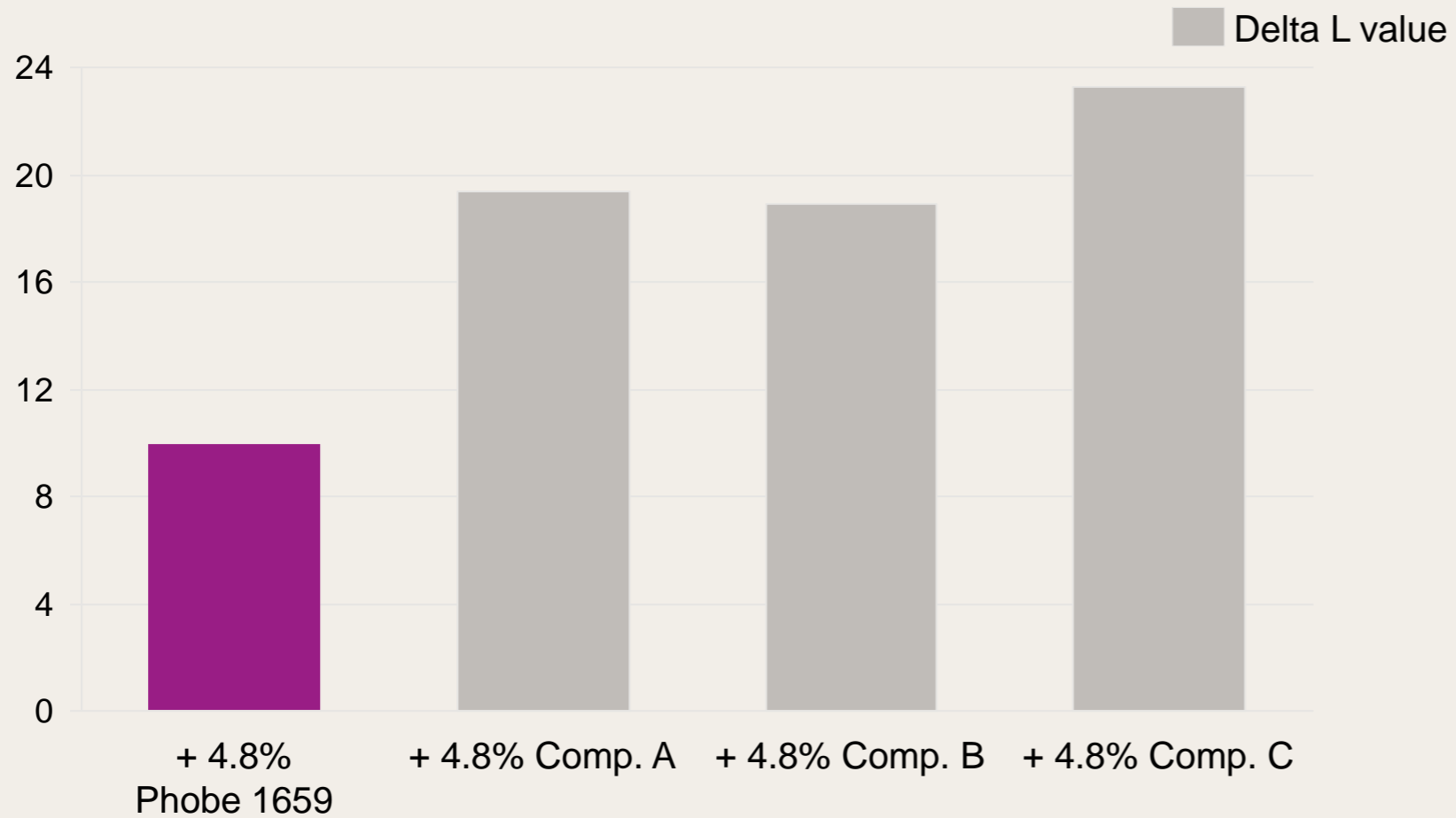
## Effect of Silicone Resin on Water Absorption and Vapor Diffusion





## Lowest dirt pick up

### TEGO® Phobe 1659 with outstanding dirt pick up values



#### Test-System

Silicone resin paint

PVC: 75%

Styrene acrylic binder



## Universal Use – High workability in Plaster

### Facts & results

TEGO® Phobe 1659 can be used as silicon resin different systems with excellent properties for your paint or plaster

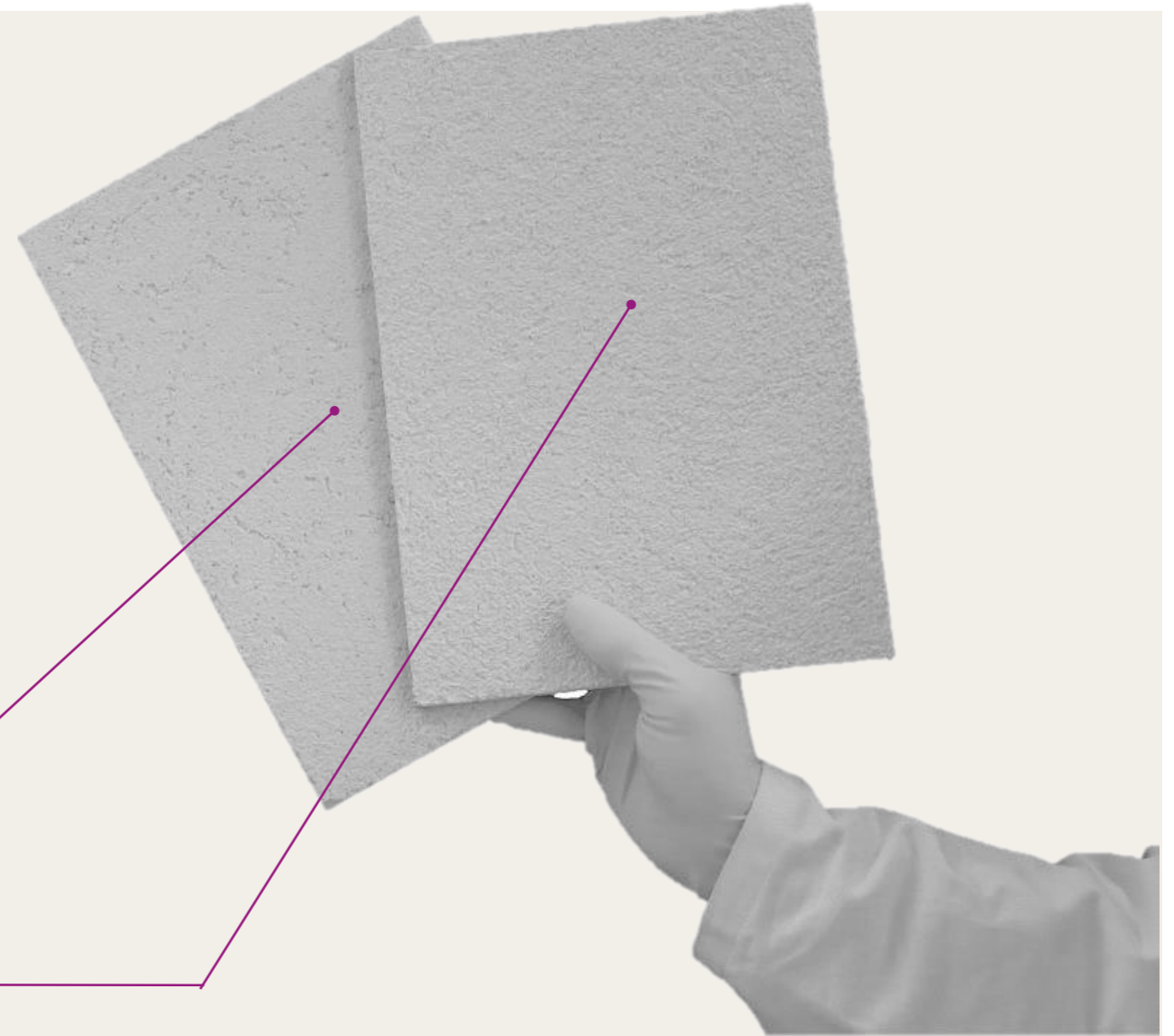
TEGO® Phobe products are tested in a broad variety of systems to provide the needed compatibility in a broad range of systems.

Starting Formulation Available

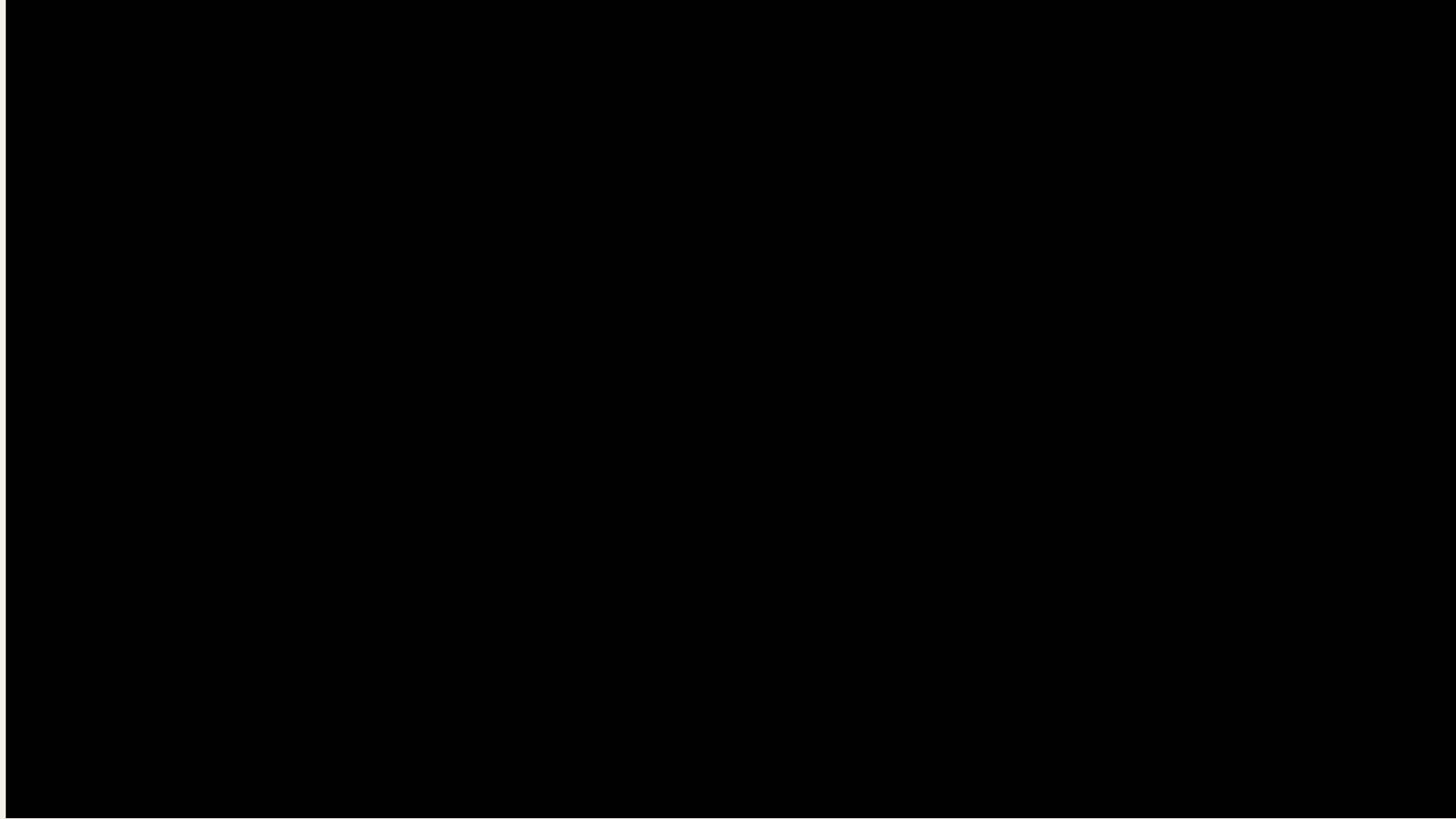


Reference from Competition

**TEGO® Phobe 1659**

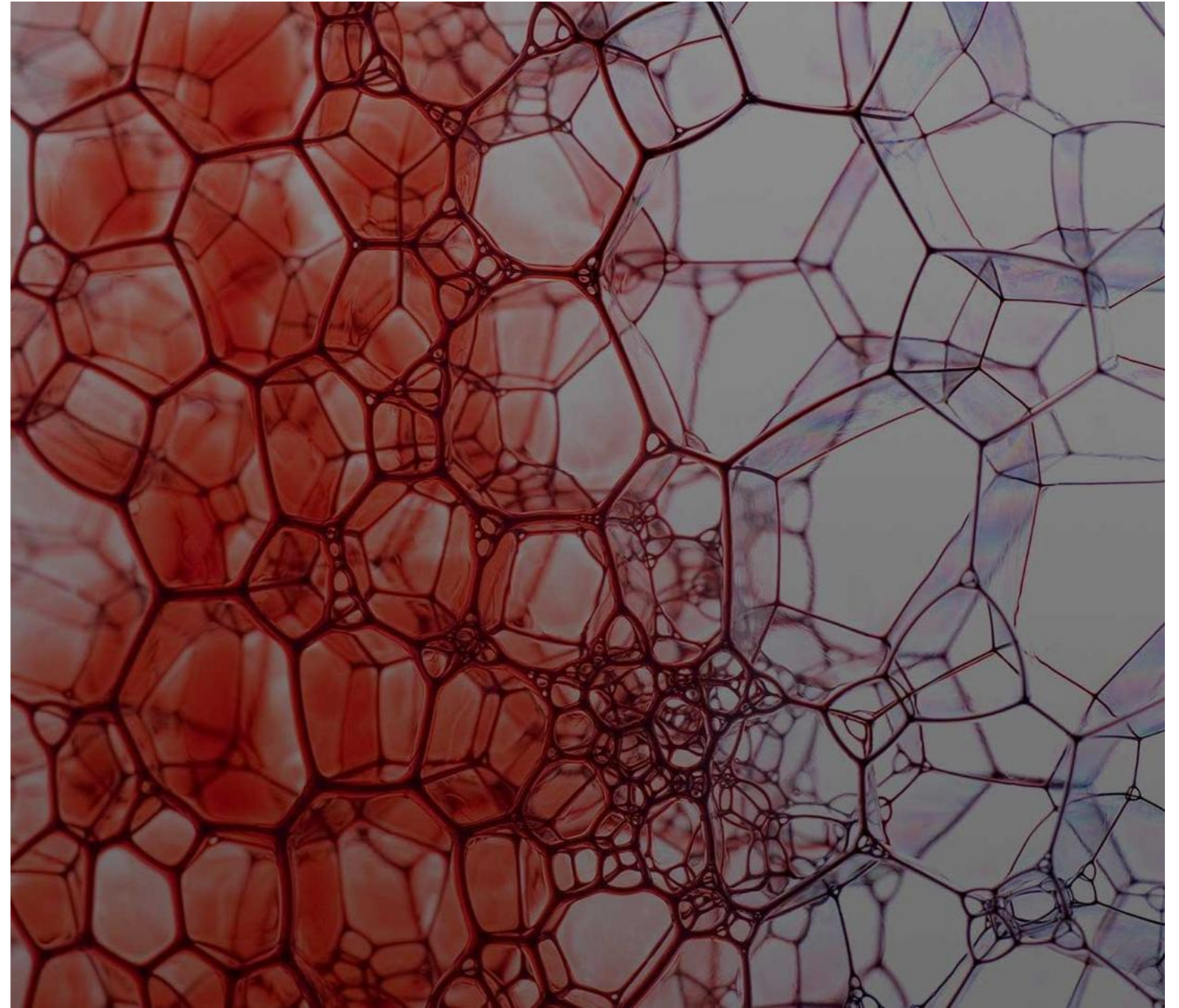


## Improved Workability and Surface appearance

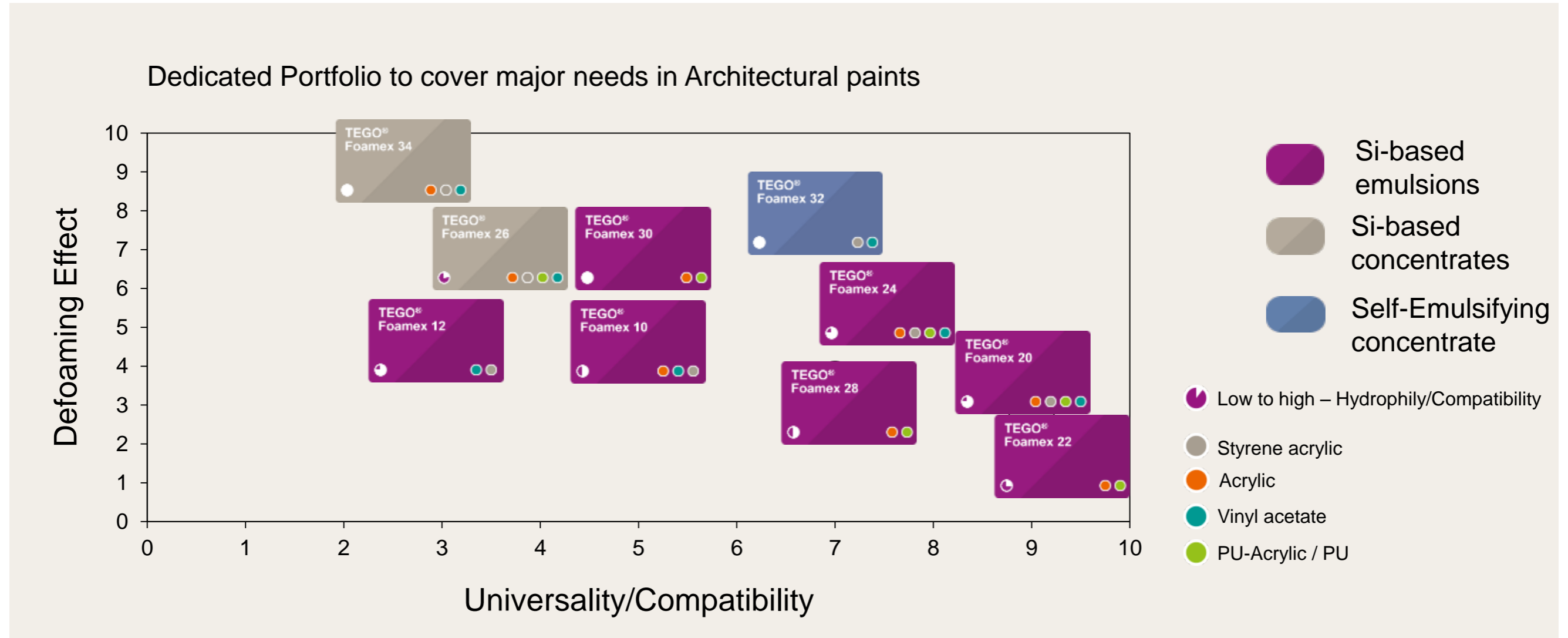


# Efficient defoaming during processing, filling and application

Defoamers for waterborne Architectural Coatings



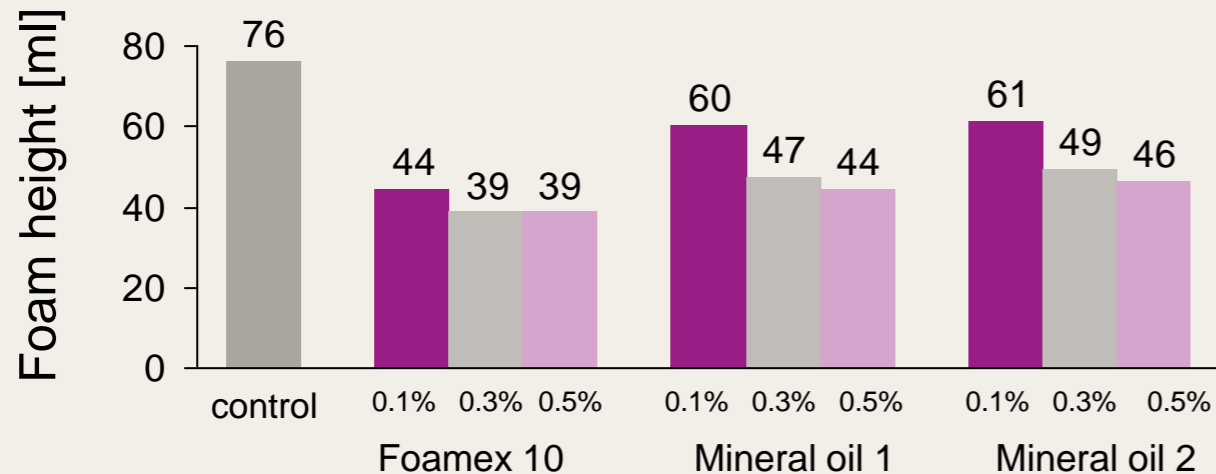
# Dedicated Portfolio Development





# TEGO® Foamex 10

- Highly efficient let-down defoamer
- Best Alternative for Mineral Oil Defoamers
- For mid to high PVC formulations
- Easy to incorporate



**PVC 30%**  
Styrene-Acrylic binder

- Si-based emulsions
- Low to high – Hydrophilicity / Compatibility
- Styrene acrylic
- Acrylic
- Vinyl acetate
- PU-Acrylic / PU

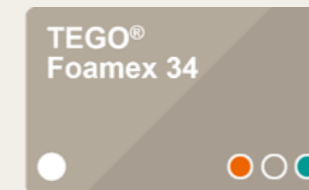
## Specifications

Active matter **15%**

Effectivity ➤ Compatibility

polyether siloxane copolymer, silica free

Ideal combination

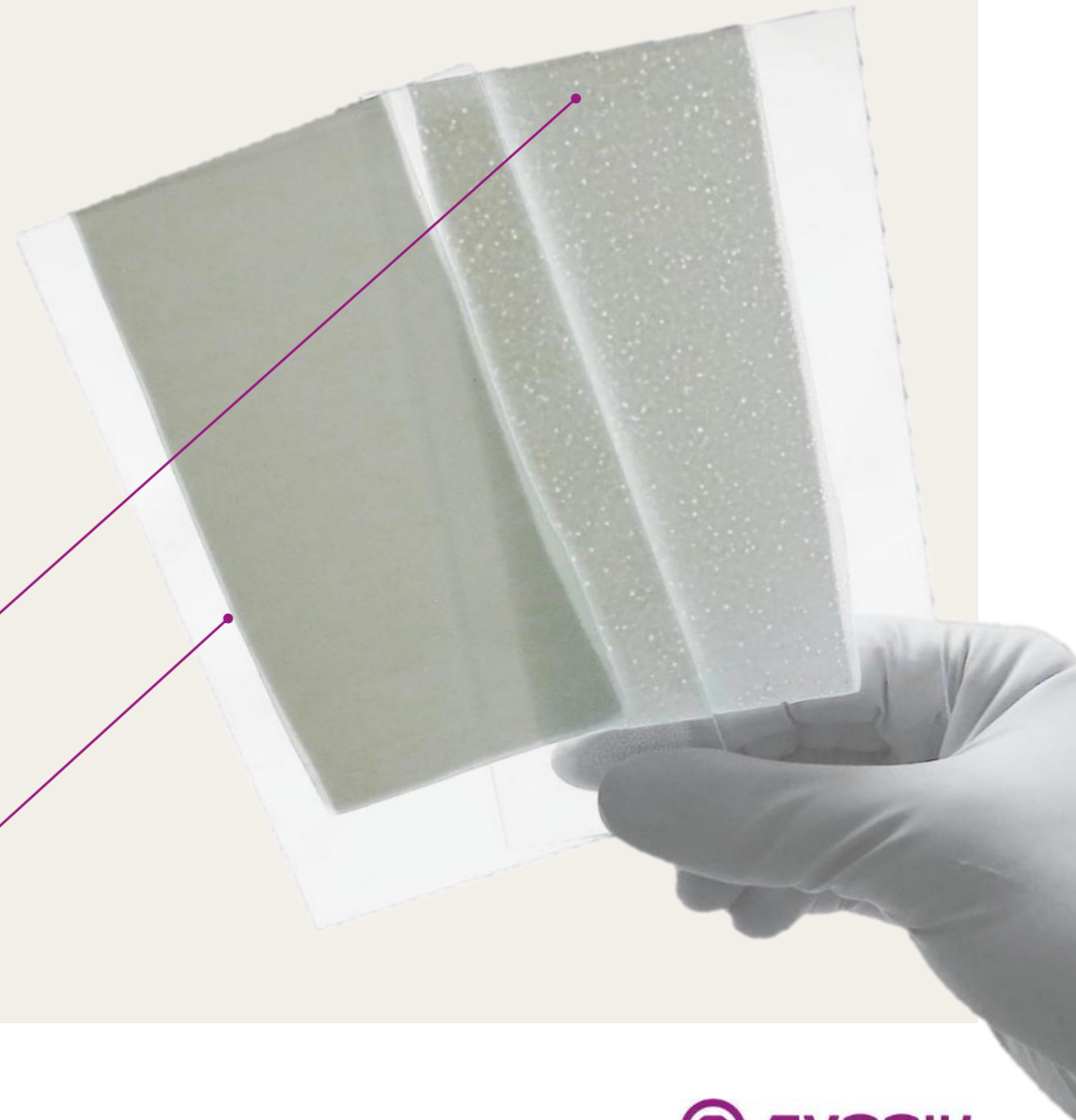


# Best surface quality

## Facts & results

For sensitive architectural paint systems outstanding compatibility is essential.

TEGO® Foamex products are tested in a broad variety of systems to provide the needed compatibility in a broad range of systems. They deliver a strong defoaming effect without craters and incompatibility



Reference from Competition

**TEGO® Foamex 20**

# TEGO® Foamex 32

- Good balance between efficiency and compatibility
- Universal for mill base and let down
- Easy incorporation



- Self-Emulsifying concentrate
- Low to high – Hydrophily / Compatibility
- Styrene acrylic    • Acrylic    • Vinyl acetate    • PU-Acrylic / PU

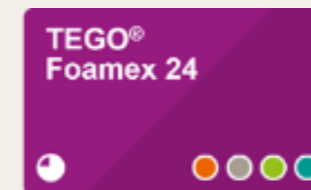
## Specifications

Concentration **100%**

Effectivity = Compatibility

Polyether siloxane copolymer, silica free

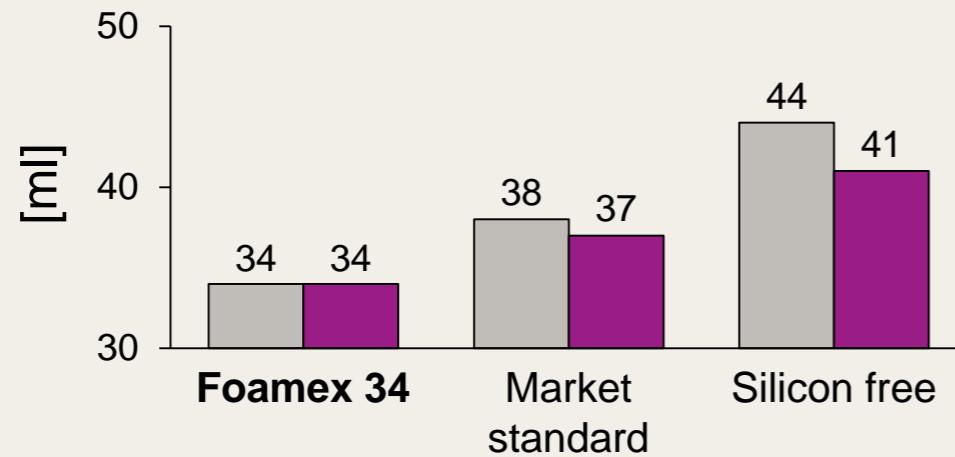
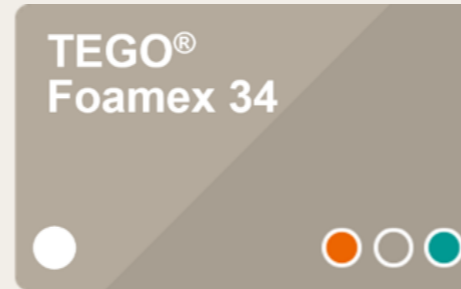
Ideal combination





# TEGO® Foamex 34

- Highest efficiency on low dosage
- Strongest defoamer in the mill base
- Very good long term effectiveness
- For mid to high PVC formulations



- Si-based concentrates
- Low to high – Hydrophilicity / Compatibility
- Styrene acrylic    ● Acrylic    ● Vinyl acetate    ● PU-Acrylic / PU

## Specifications

Active matter **100%**

Effectivity > Compatibility

polyether siloxane copolymer, contains fumed silica

Ideal combination



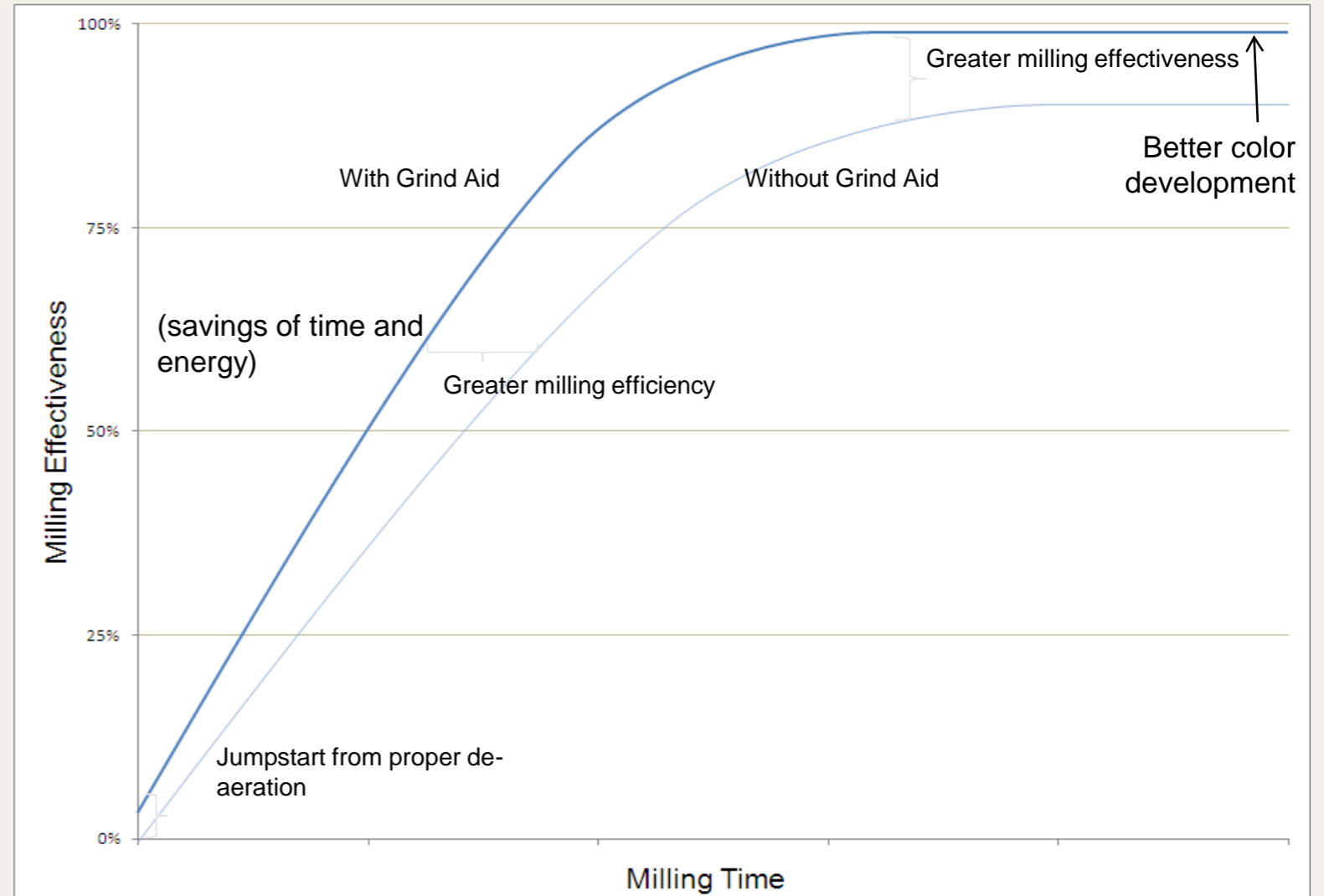
Raw material  
optimization and  
improved colorant  
acceptance



# CARBOWET® GA 200 - Grind Aid Benefits

## Properties

- Nonionic grind aid surfactant
- Optimal balance between wetting and stabilization
- Low foaming surfactant



# Grind aid benefits : Pigment Wetting Improvement

Pre-mix liquid
Demi water
CARBOWET® GA surfactant or polyphosphate
Polyacrylate dispersant
AIRASE® 5100 defoamer



and



Pre-mix powder
Pigment and Fillers



Results Polyphosphate

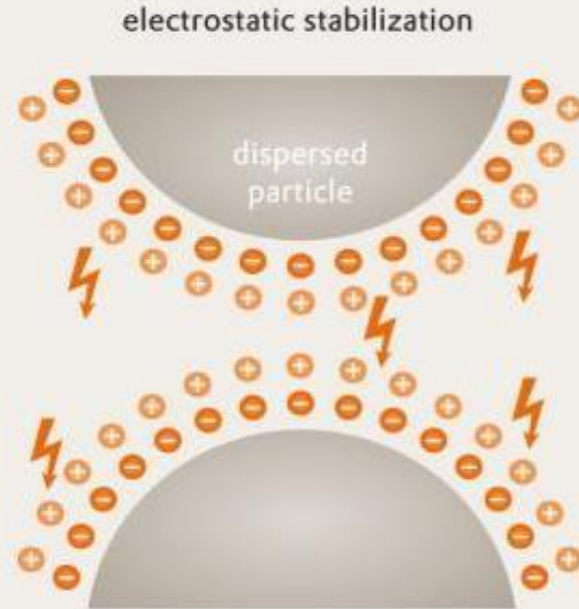


Results CARBOWET® GA' series

# TEGO® Dispers 747 W - The best way for pigment stabilization in your concentrates

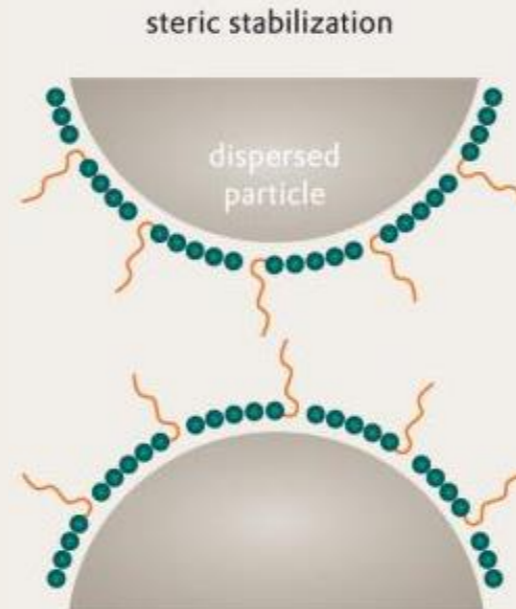
## Polyacrylate dispersants

In waterborne systems



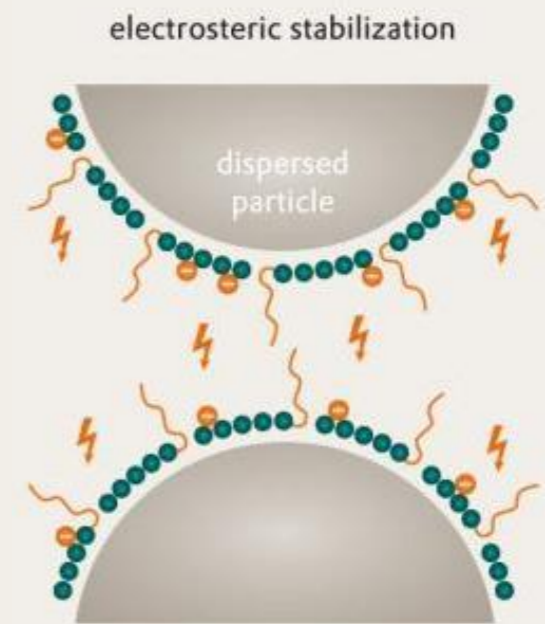
## Polymeric Dispersants:

In waterborne and solvent borne systems

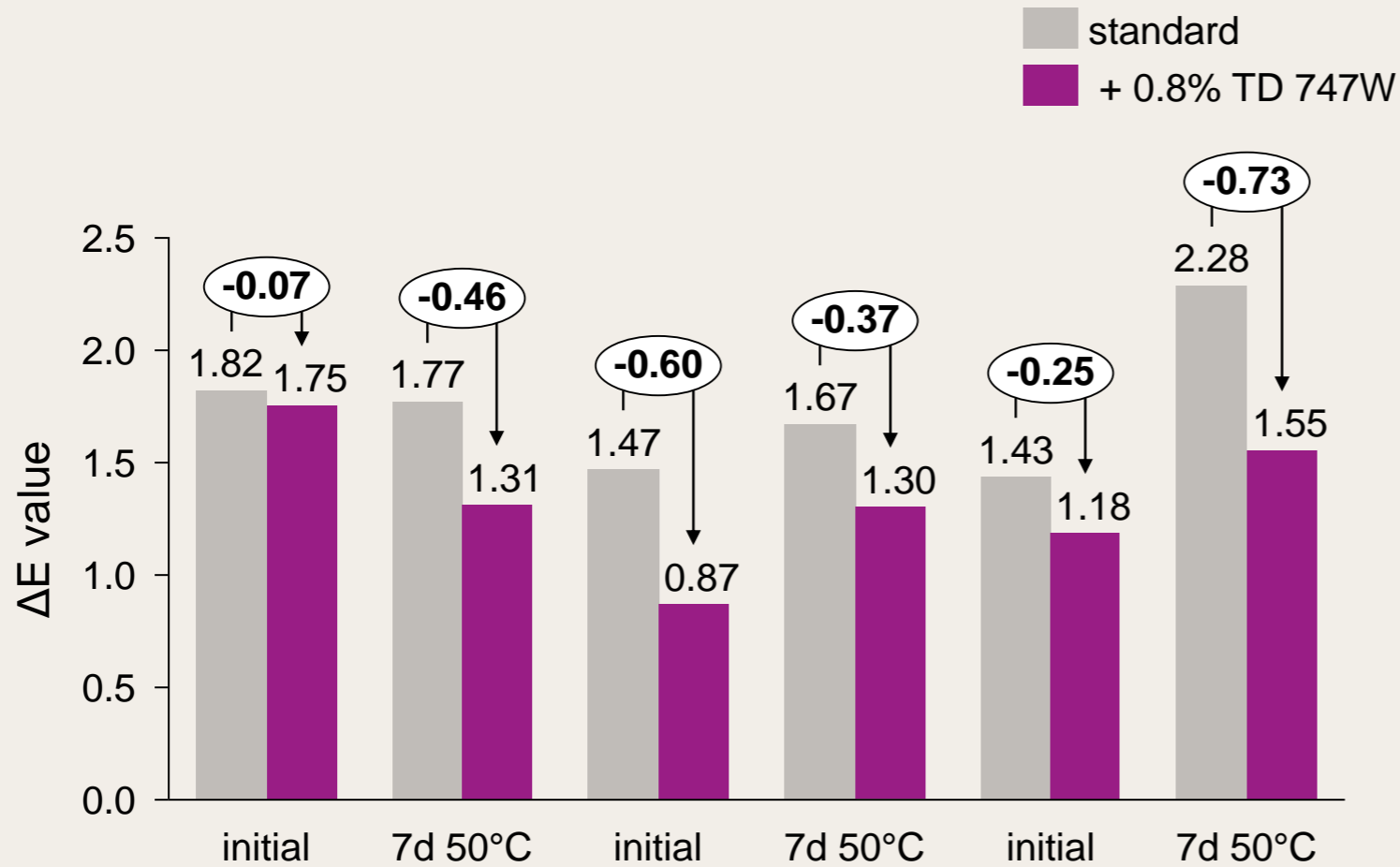


## TEGO® Dispers 747 W

Combination to stabilize your pigments more efficiently



# Better Colorant Acceptance



COMPONENT	1	2
Water	25.18	25.74
Additives	0.46	0.46
Surfactant	0.56	-
Polyacrylate salt dispersant	0.80	-
<b>TEGO<sup>®</sup> Dispers 747W</b>	-	<b>0.8</b>
Fillers & Pigments	37.00	37.00
Thickeners	3.00	3.00
Defoamer	1.00	1.00
Binder	32.00	32.00
<b>Total</b>	<b>100.00</b>	<b>100.00</b>

In all cases lower ΔE value after tinting with TEGO<sup>®</sup> Dispers 747W

# Superior Wetting Behavior

Superior wetting & viscosity performance of TEGO® Dispers 747 W



# Efficient MFFT- Reduction for low-temperature application



# What is a Coalescing Surfactant and why to use one?

Global Regulations Require Lower Volatile Organic Compound (VOC) Emissions

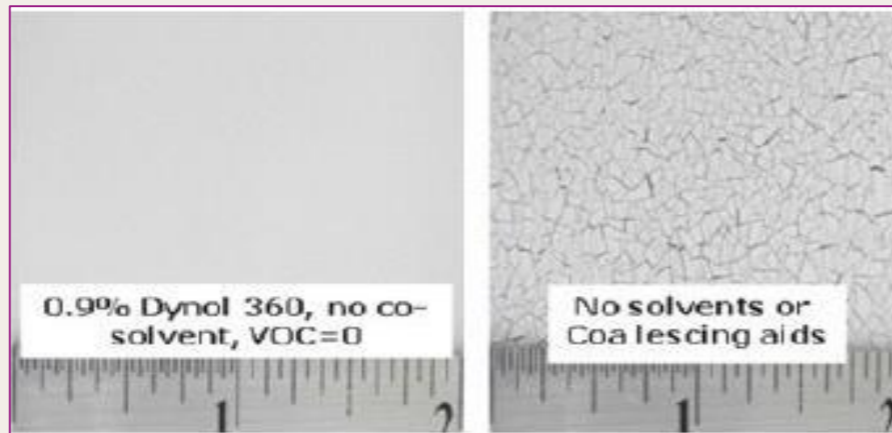
Side Effects of Removing Coalescing Solvents

Higher minimum film formation temperature (MFFT)

Poorer coating integrity and appearance if applied at or below the MFFT

Coalescing Surfactants Lower MFFT and Function as Low Foam Dynamic Wetting Agents

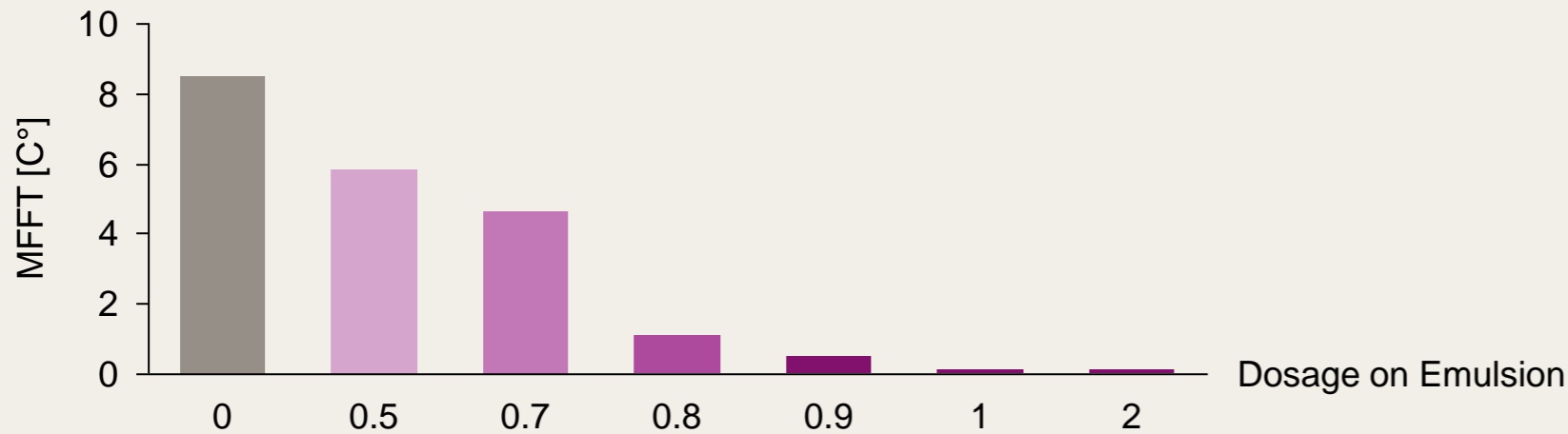
DYNOL™ 360 and SURFYNOL® AD01 surfactants are Coalescing Surfactants





# SURFYNOL® AD 01

- Compatible molecular defoamer
- Fast knockdown defoaming
- Outstanding long-lasting foam control
- Excellent dynamic wetting
- Combination of several properties
- Can reduced MFFT
- Can be used at pH 3 up to pH 13



## Specifications

Active matter **100 %**

Nonionic organic based Gemini surfactant and molecular defoamer  
Silicone- free, siloxane- free

- 100% Product
- defoaming recoatable
- Water beading flow
- static surface tension
- dynamic surface tension substrate wetting



**EVONIK**

**POWER TO CREATE**