



COATINGS

INDORAMA
VENTURES



ULTRAFILM[®] 5000

Coalescing Agent to improve
film formation



COATINGS

INDORAMA
VENTURES

ULTRAFILM® 5000 is a patented technology designed to be a more compatible coalescing agent for acrylic, vinyl-acrylic and styrene-acrylic latexes delivering performance benefits.

BENEFITS

- Better film formation
- Reduces water sensitivity
- Improves hardness evolution: lower dirt pick-up
- Films with low blistering
- Low leaching



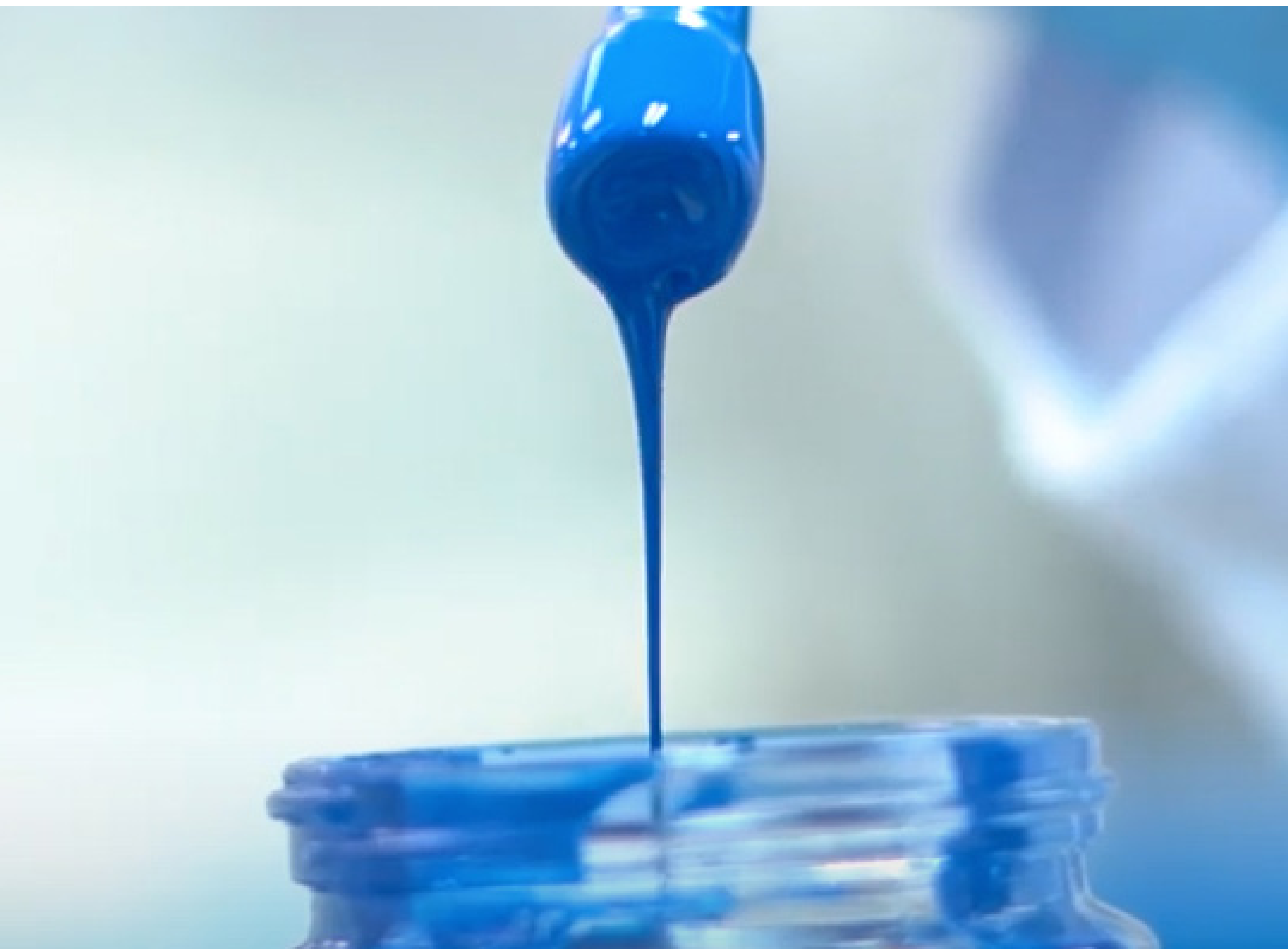


COATINGS

INDORAMA
VENTURES

FEATURES

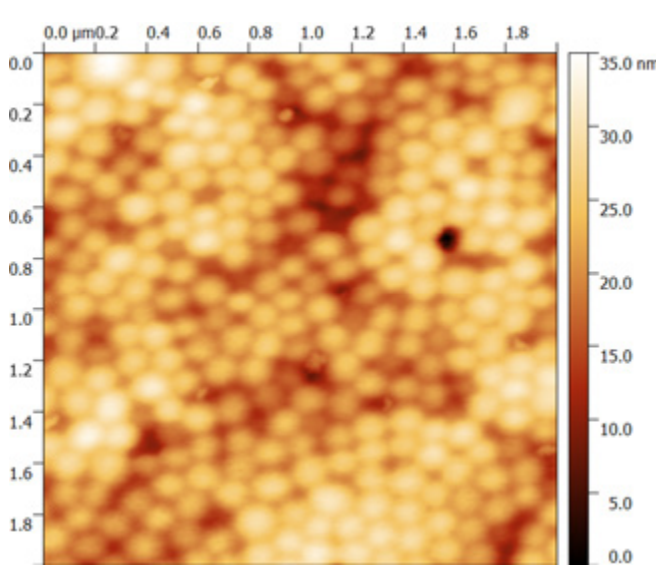
- Proprietary Ester
- Renewable product content
- Boiling point = 283 °C
- Zero-VOC according to ABNT NBR 16388, Directive 2004/42/CE and Green Seal GS-11
- Efficient to reduce MFFT
- Package: Sample, Drum, Bulk



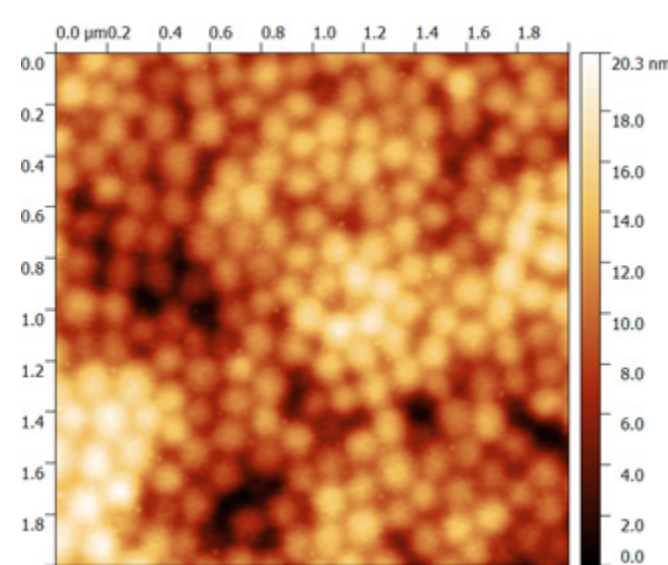


PERFORMANCE TESTS

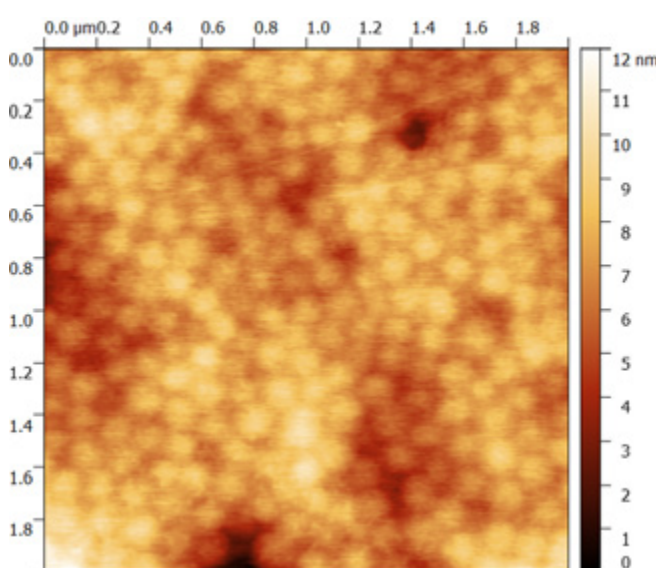
Film Formation



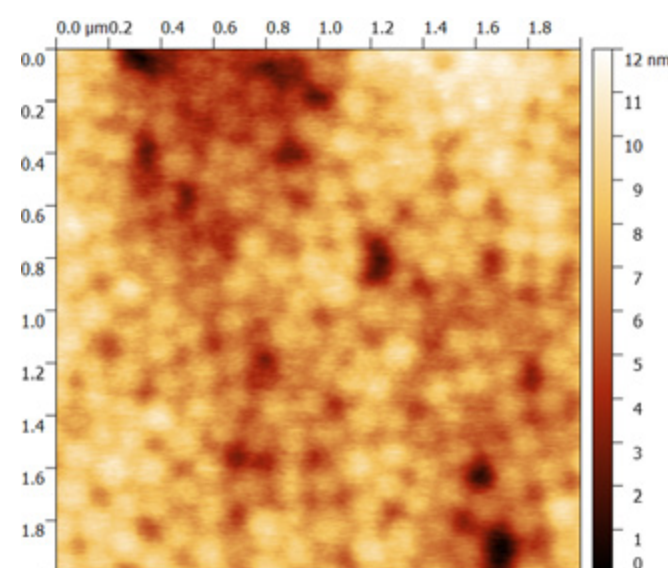
ACRYLIC LATEX



ACRYLIC LATEX + 6PHP
OF COALESCENT 1



ACRYLIC LATEX + 6PHP
OF COALESCENT 2



ACRYLIC LATEX + 6PHP
OF ULTRAFILM® 5000



- Better coalescence: reduced particle's domains
- Lower average height – smoother film

Instrumental test: AFM (Atomic Force Microscopy).

Tested latex: Pure Acrylic (MFFT ~ 17 °C | Tg ~ 29 °C).

Test condition: Film cast on Leneta chart and dried @ 25 ± 5 °C, 60% R.H. for 7 days.

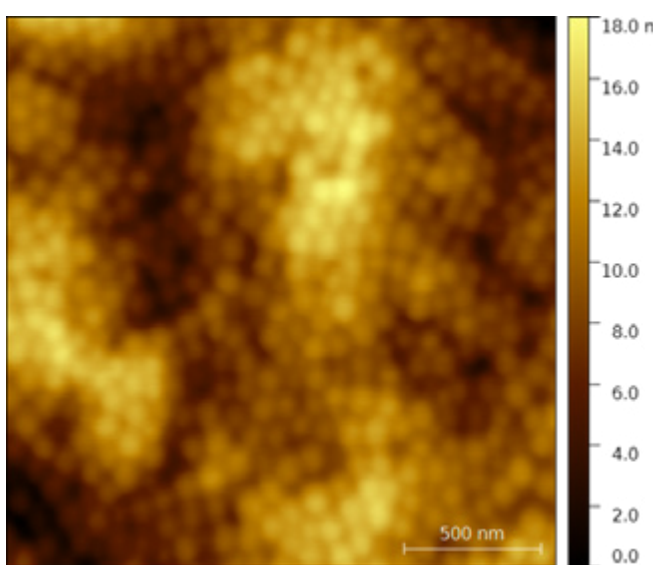
Coalescent 1: boiling point @ 254 °C.

Coalescent 2: boiling point @ 344 °C.

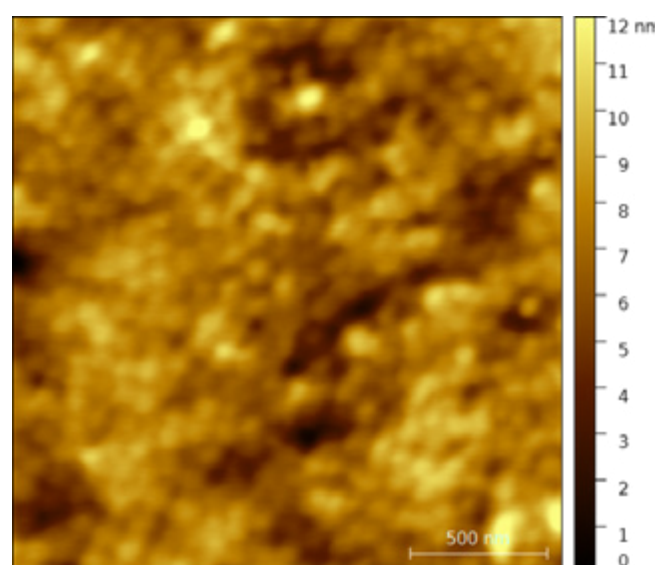


PERFORMANCE TESTS

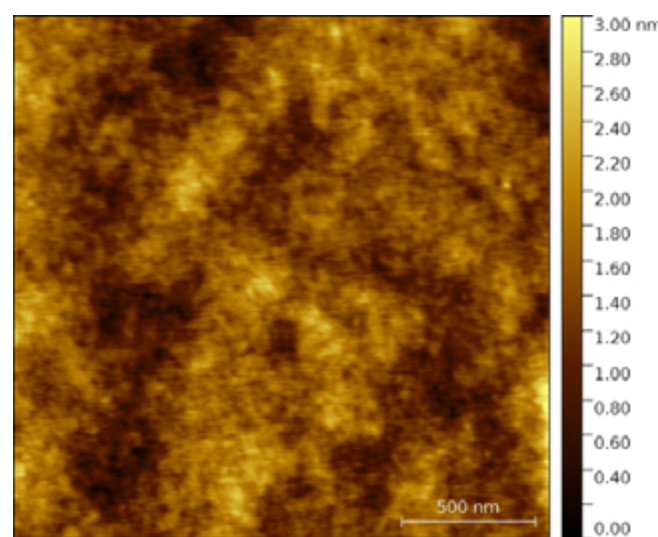
Film Formation



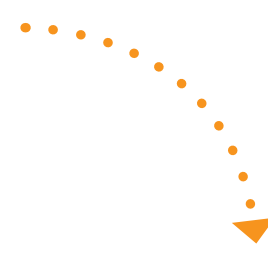
STYRENE-ACRYLIC
LATEX



STYRENE-ACRYLIC LATEX
+ 10PHP OF COALESCENT 1



STYRENE-ACRYLIC LATEX +
10PHP OF ULTRAFILM® 5000



- Particle domains no longer perceivable – maximum entanglement of polymeric chains
- Lower average height – smoother film

Instrumental test: AFM (Atomic Force Microscopy).

Tested latex: Styrene-Acrylic (MFFT ~ 21 °C | Tg ~ 28 °C).

Test condition: Film cast on Leneta chart and dried @ 25 ± 5 °C, 60% R.H. for 7 days.

Coalescent 1: Boiling point @ 254 °C.



COATINGS

INDORAMA
VENTURES

PERFORMANCE TESTS

Low Temperature Coalescence (LTC) –
ASTM D7306-7

	ULTRAFILM® 5000	Coalescent 1
Visual evaluation		
Evaluation on optical microscope (50x)		

Tested paint: Pure acrylic semi gloss paint, PVC ~ 32%, Latex content ~ 35% and coalescent content ~ 1.4%.

Coalescent 1: Boiling point @254°C

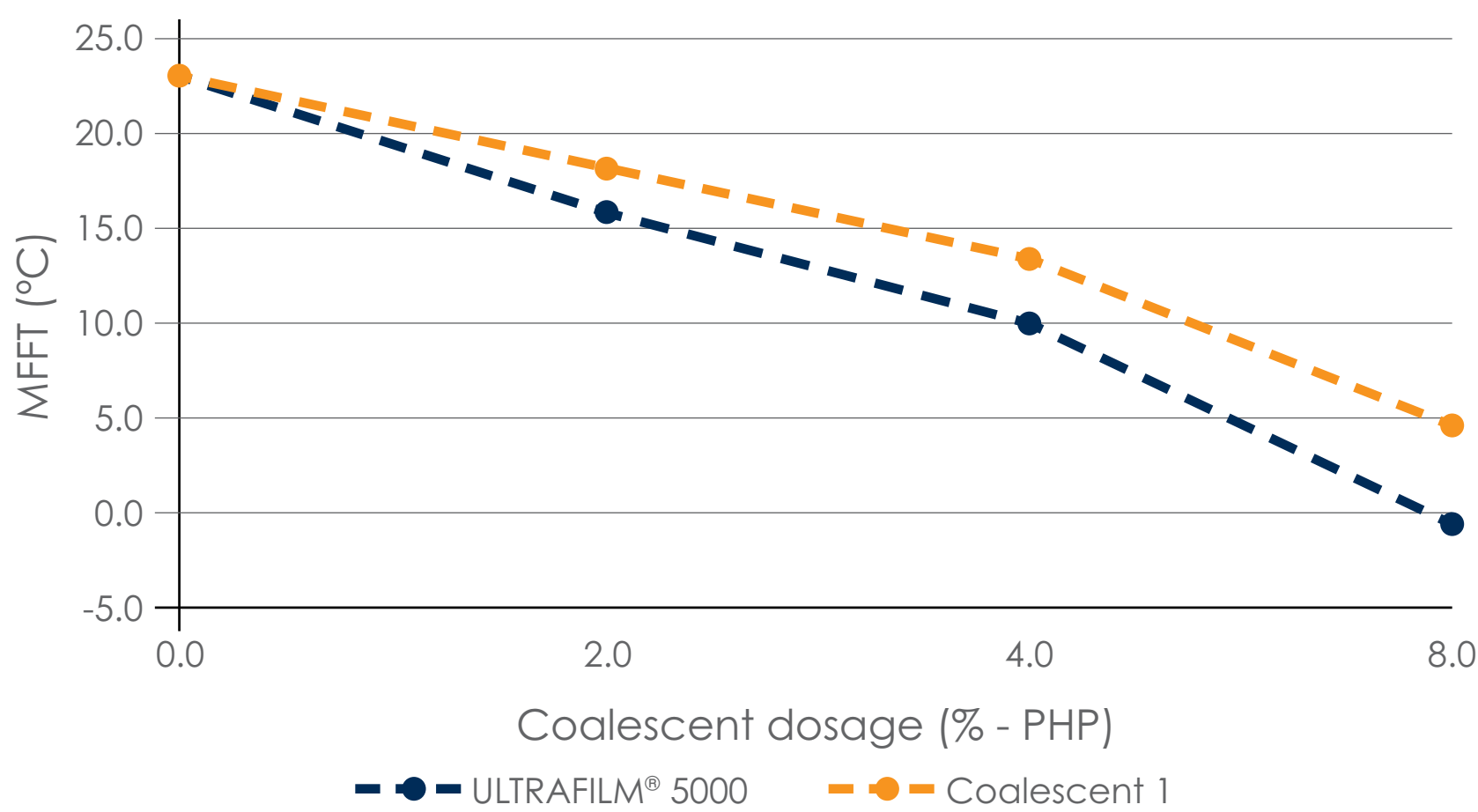
At the same dosage, paints formulated with **ULTRAFILM® 5000** present better film formation under extreme conditions.



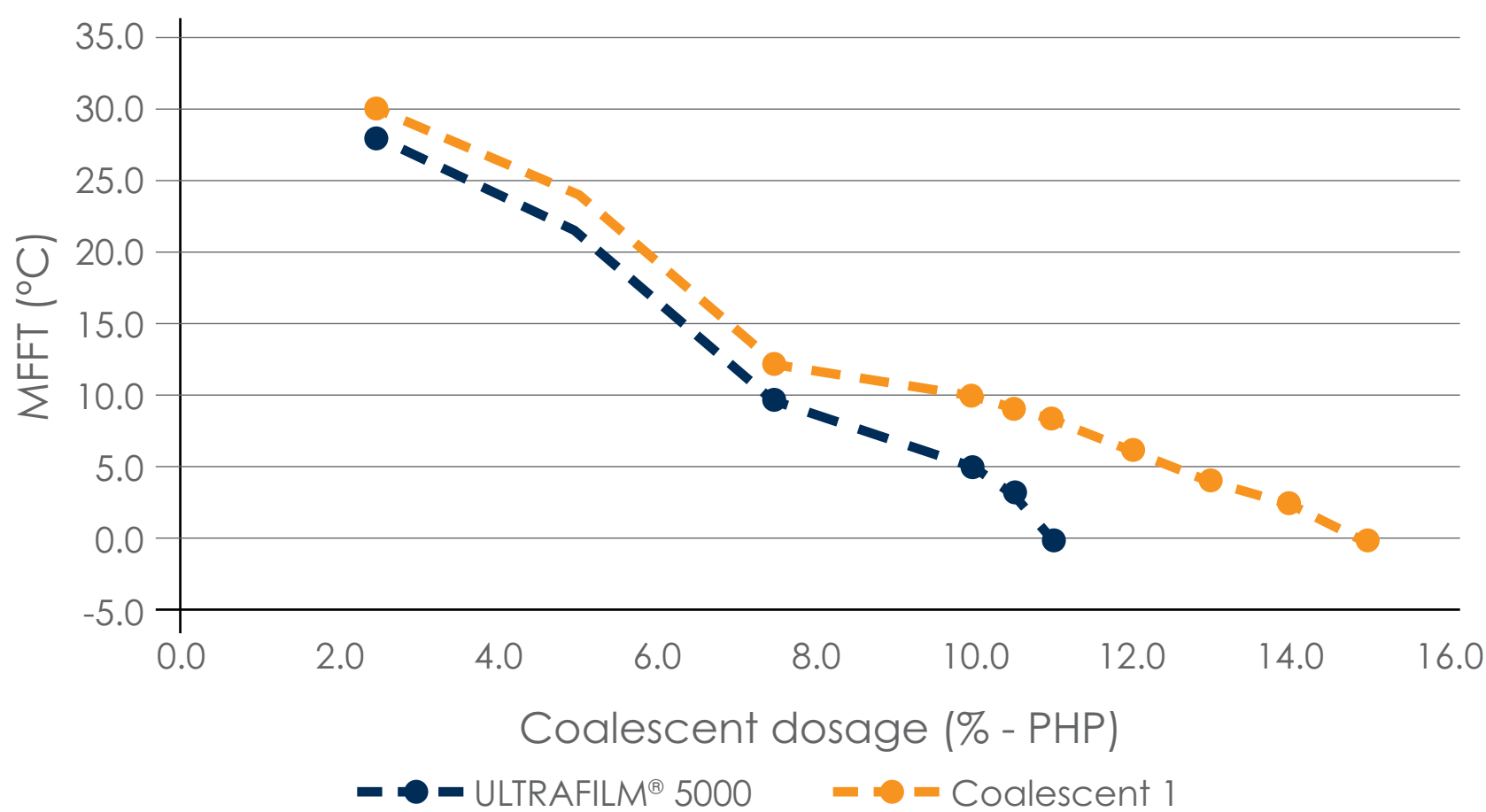
PERFORMANCE TESTS

MFFT reduction efficiency

STYRENE ACRYLIC LATEX, $T_g \sim 30^\circ\text{C}$, MFFT $\sim 23^\circ\text{C}$



MODIFIED ACRYLIC, $T_g \sim 50^\circ\text{C}$, MFFT $\sim 45^\circ\text{C}$



Test condition: Performed according to ASTM D2354

Coalescent 1: Boiling point @ 254°C

ULTRAFILM® 5000 is highly efficient for reducing MFFT of different latexes

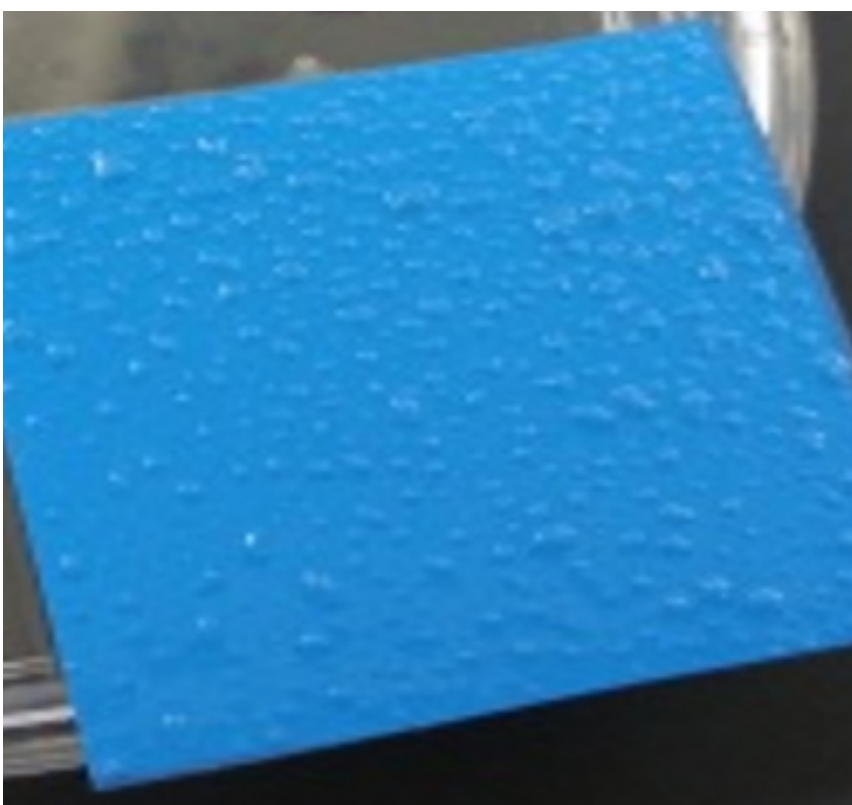


COATINGS

INDORAMA
VENTURES

PERFORMANCE TESTS

Water Absorption



**STYRENE-ACRYLIC
PAINT + 10PHP OF
COALESCENT 1**



**STYRENE-ACRYLIC
PAINT + 10PHP OF
ULTRAFILM® 5000**



- Lower blistering
- Lower water absorption

Tested latex: Styrene-Acrylic (MFFT ~ 21 °C | Tg ~ 28 °C).

Test condition: 55% PVC blue paint cast on Leneta chart and dried @ 5 ± 2 °C, 60% R.H. for 1 day and immersed in distilled water for 4h.

Coalescent 1: boiling point @ 254 °C.



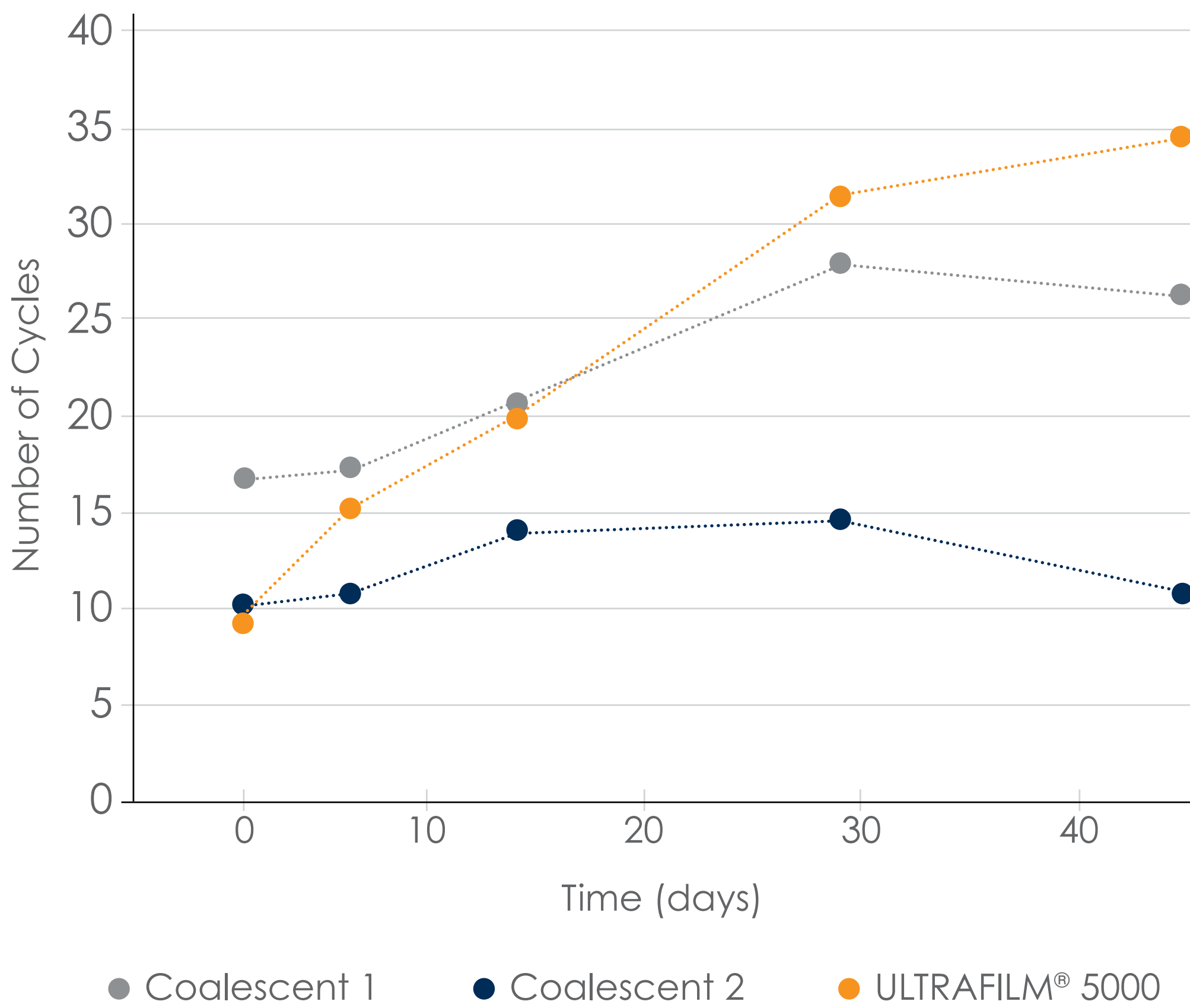


COATINGS

INDORAMA
VENTURES

PERFORMANCE TESTS

Hardness Evolution - ASTM D4366



Coalescent 1: boiling point @ 254 °C.

Coalescent 2: boiling point @ 344 °C.

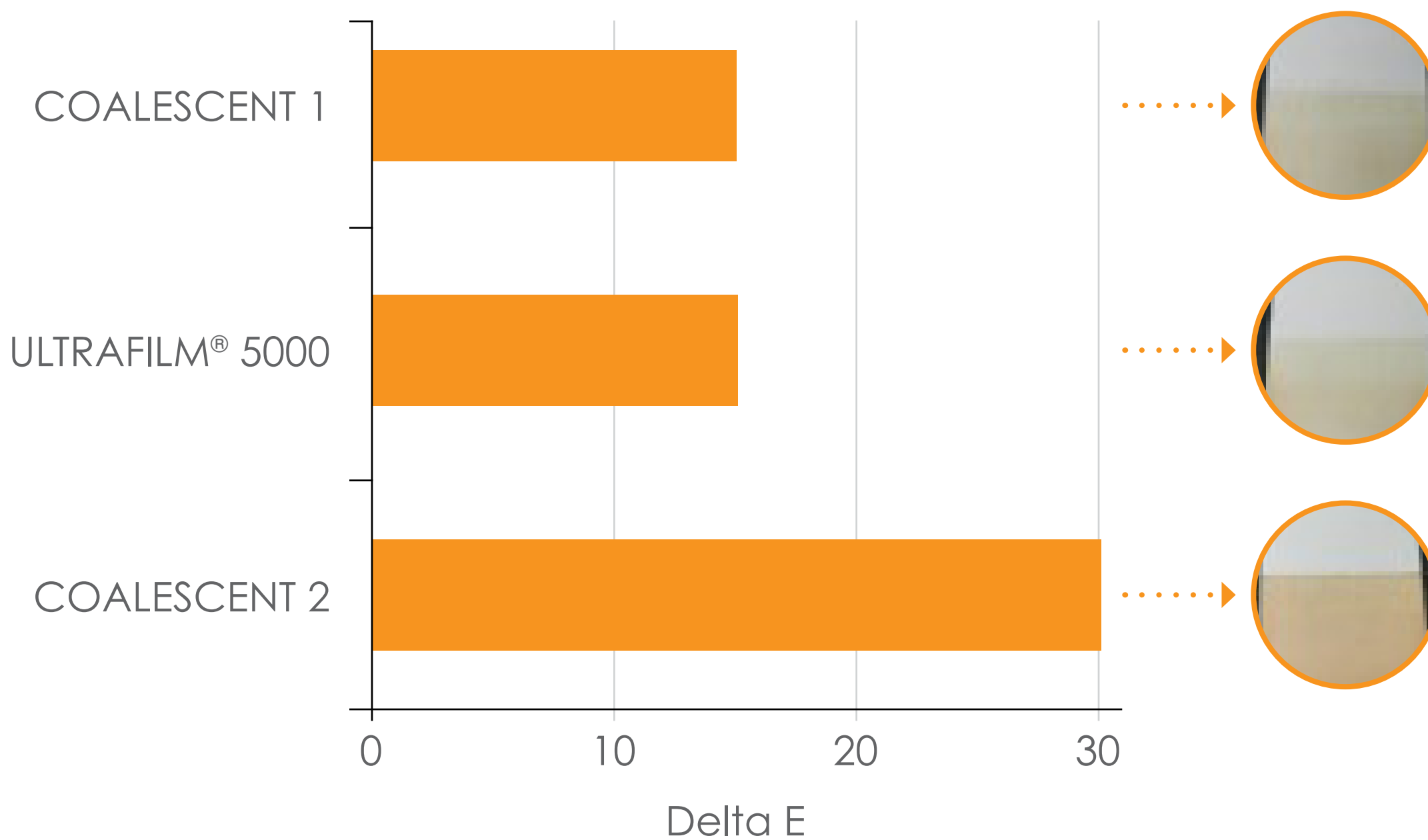




PERFORMANCE TESTS

Dirt pick-up

PAINTS DRIED FOR 40 DAYS, 25 °C, 60% RH



Instrumental test: Indorama Ventures' Internal Method for Dirt Pick-up.

Tested latex: Styrene-Acrylic (MFFT ~ 21 °C | Tg ~ 28 °C).

Test condition: 30% PVC paint cast on Leneta chart and dried @ 25 ± 5 °C, 60% R.H. Dirty was applied on the 40th day of drying.

Coalescent 1: boiling point @ 254 °C.

Coalescent 2: boiling point @ 344 °C.

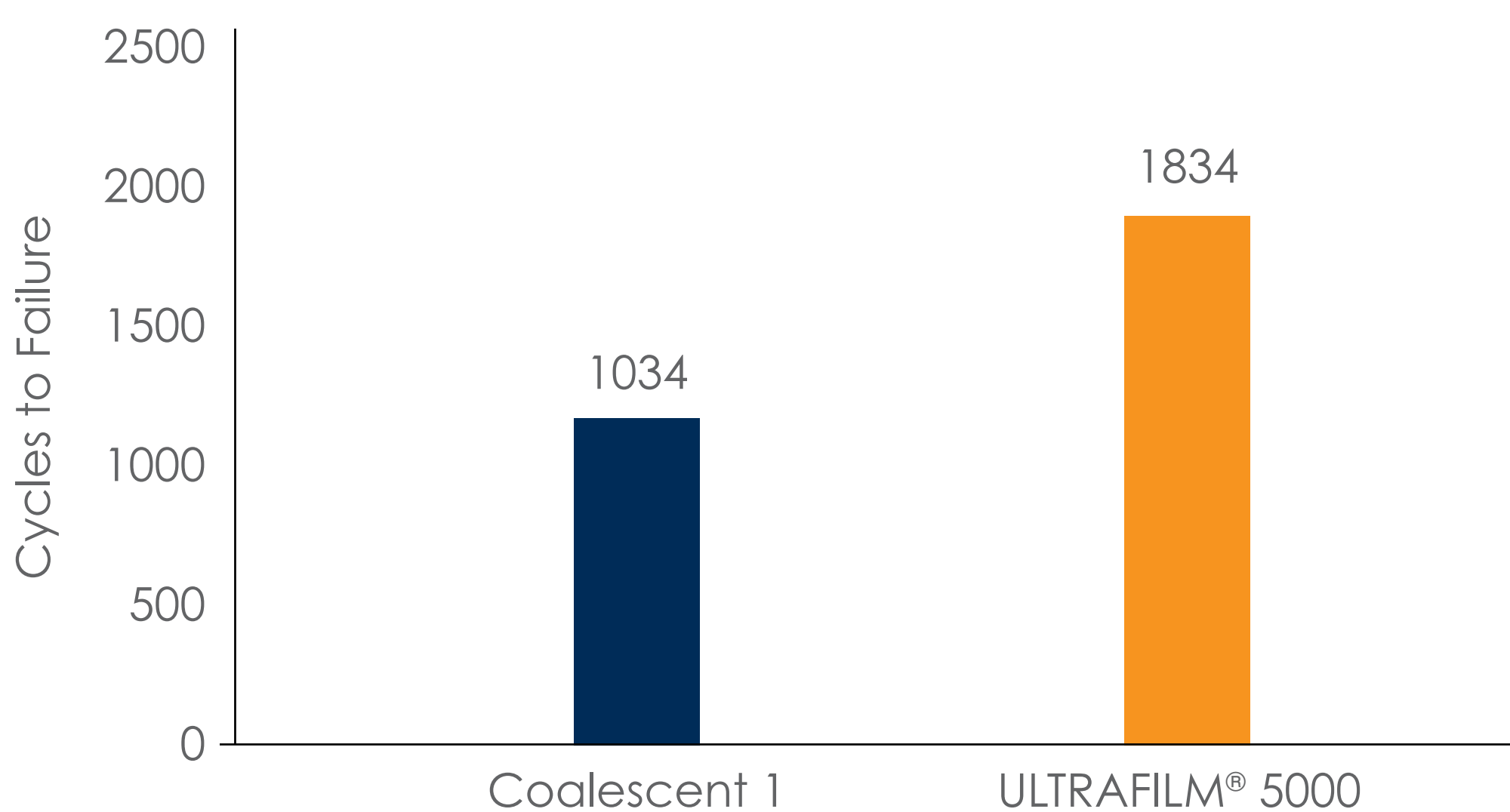


COATINGS

INDORAMA
VENTURES

PERFORMANCE TESTS

Wet Scrub resistance



● Increased wet scrub resistance



Tested latex: Styrene-Acrylic (MFFT ~ 21 °C | Tg ~ 28 °C).

Test condition: 38% PVC paint tested according to ASTM D2486, method A.

Coalescent 1: boiling point @ 254 °C.

If you are looking for better film
formation **ULTRAFILM® 5000**
is what you need!
Contact us and request a sample.

INDORAMA
VENTURES