ARKEMA

ENCOR 2438 Application Development in Industrial Coating

9/23/2024

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END USER NEEDS

→ High gloss.

→ Dry quickly, excellent anti-blocking

→ Adhesion on various substrates.

→ Good (early) water resistance.

→ Good acid and alkaline resistance.

→ Good salt spray resistance.

→ Good ageing-resistance.







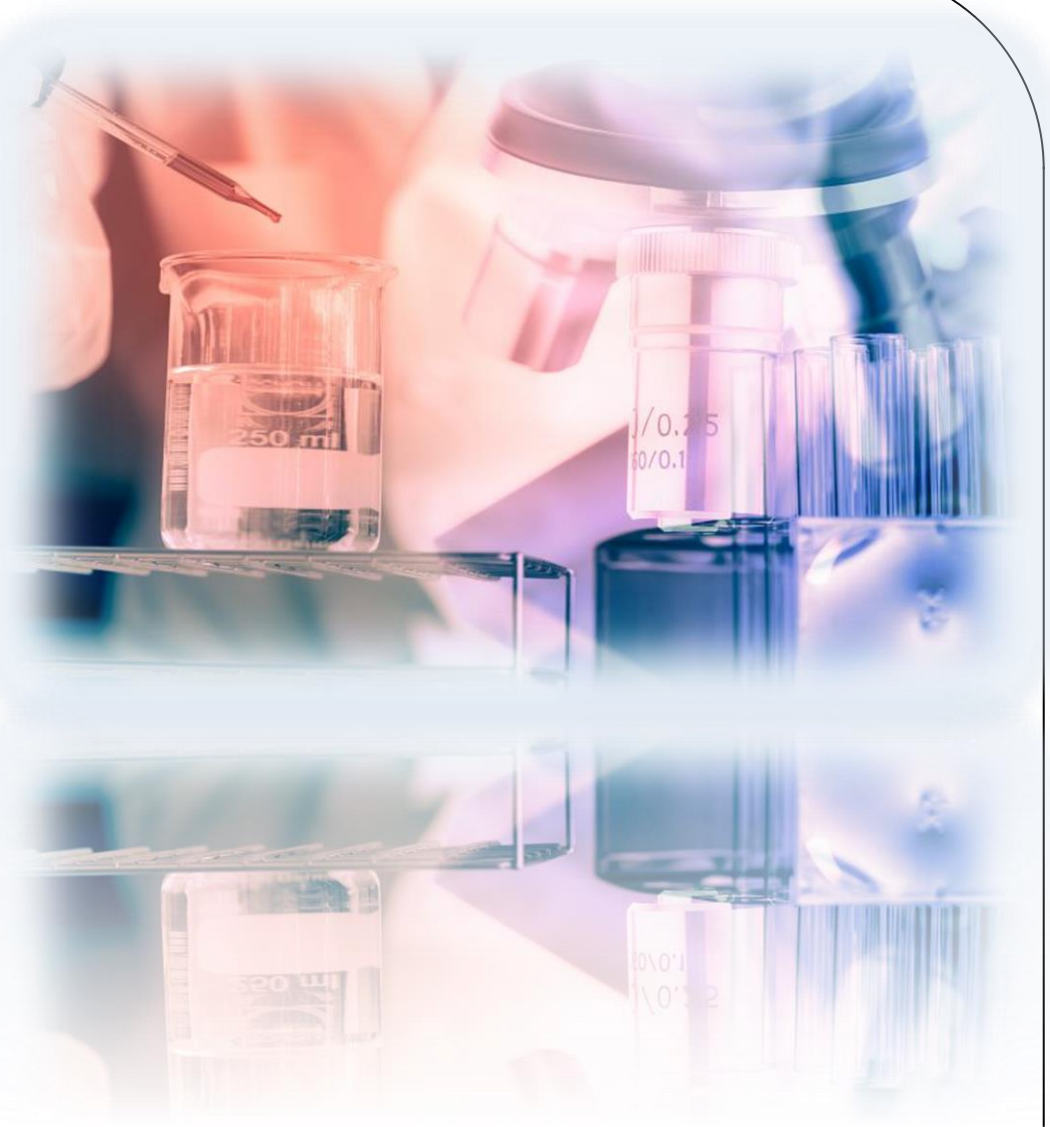
PRODUCT PROPERTY

→ Basic properties:

Chemistry	Styrene acrylic
Solid content,%	47.00~49.00
PH	8.0~10.0
Viscosity, @60RPM, cP	<2000
MFFT ,°C	20.0~22.0
Particle size, um	0.09

→ Features:

- High gloss.
- Adhesion on various substrates.
- Flexibility.
- Excellent water resistance, especially early water resistance.
- Some alkaline resistance, and good acid resistance.
- Good salt spray resistance.



PERFORMANCE COMPARISON

Latex data comparison

Property	ENCOR 2438	A	B
Solid content，%	48.14	47.53	47.91
PH	8.86	7.75	8.71
Viscosity，@60RPM	558.1	425.3	48.7
MFFT, °C	21.8	24.6	26.3
Particle size，nm	94	101	86

PERFORMANCE COMPARISON

Adhesion to different substrates

Substrates	ENCOR 2438	A	B
PC	○	○	○
ABS	○	○	○
PC+ABS	○	○	○
Tinplate	○	△	△
Aluminium	○	×	○
CRS	○	○	○
SUS 304	○	○	○
Galvanized sheet	×	×	×
Glass	○	○	○
Clear coat, DFT 20~30um，Baking 60℃*60min			

○-good △-medium ×-bad

PERFORMANCE COMPARISON

Key tests

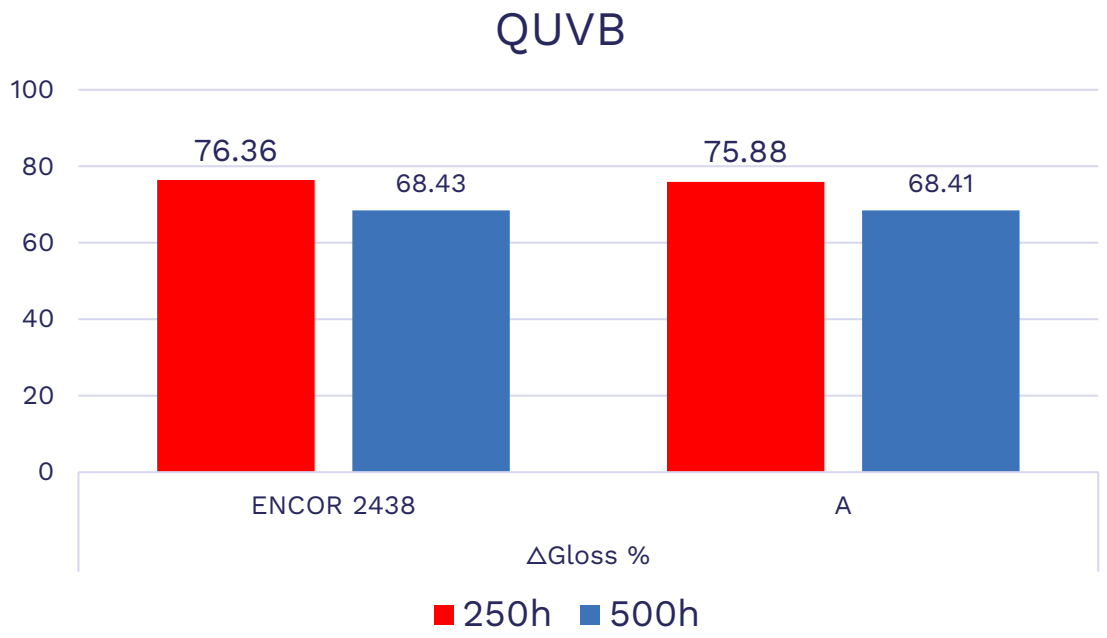
Performance		ENCOR 2438	A	B	Test method
Gloss (°)	20°	59.4	75.4	13.0	GB/T 1743-1979
	60°	89.1	94.8	57.3	
	85°	96.9	97.6	88.5	
TFT （mins）		25-30	25-30	>30	
Anti-blocking		2	2	2	
Early-RT Water Resistance		>240h	>240h	>240h	GB / T 1733-1993
RT Water Resistance		>240h	>240h	>240h	
Hot-Water Resistance (40℃)		>240h	>240h	>240h	
5% NaOH solution		>48h	>48h	8~24h	GB/T 9274-1988
5% H2SO4 solution		>240h	>240h	<24h	

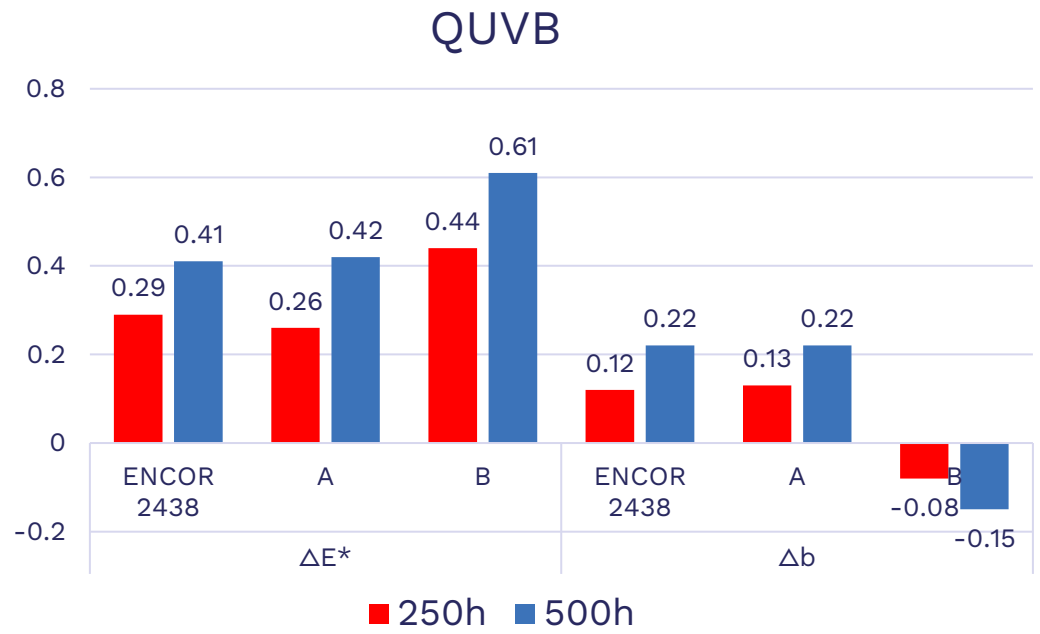
White coat（Without anti-rust pigment, P/B 0.6）, Baking 80℃*2h, DFT 40~50um, Cold Rolled Steel with polished

Anti-blocking: 5-good 1-bad

PERFORMANCE COMPARISON

QUV Test





- White coat（Without anti-rust pigment, P/B 0.6）Cold Rolled Steel / drying 80℃*2h / DFT 40~50um

PERFORMANCE COMPARISON

Early-RT Water Test

ENCOR 2438	A	B

- White coat（Without anti-rust pigment, P/B 0.6）
  Cold Rolled Steel / drying rt*2h / DFT 40~50um
- Early-RT Water for 7ds

PERFORMANCE COMPARISON

RT Water Test

ENCOR 2438	A	B

- White coat（Without anti-rust pigment, P/B 0.6）
  Cold Rolled Steel / drying 80℃*2h / DFT 40~50um
- RT Water for 7ds

PERFORMANCE COMPARISON

Salt Spray Test

ENCOR 2438	A	B
		

- White coat（Without anti-rust pigment, P/B 0.6）
  Cold Rolled Steel / drying 80℃*2h / DFT 50~60um
- Salt Sprat Test for 7ds

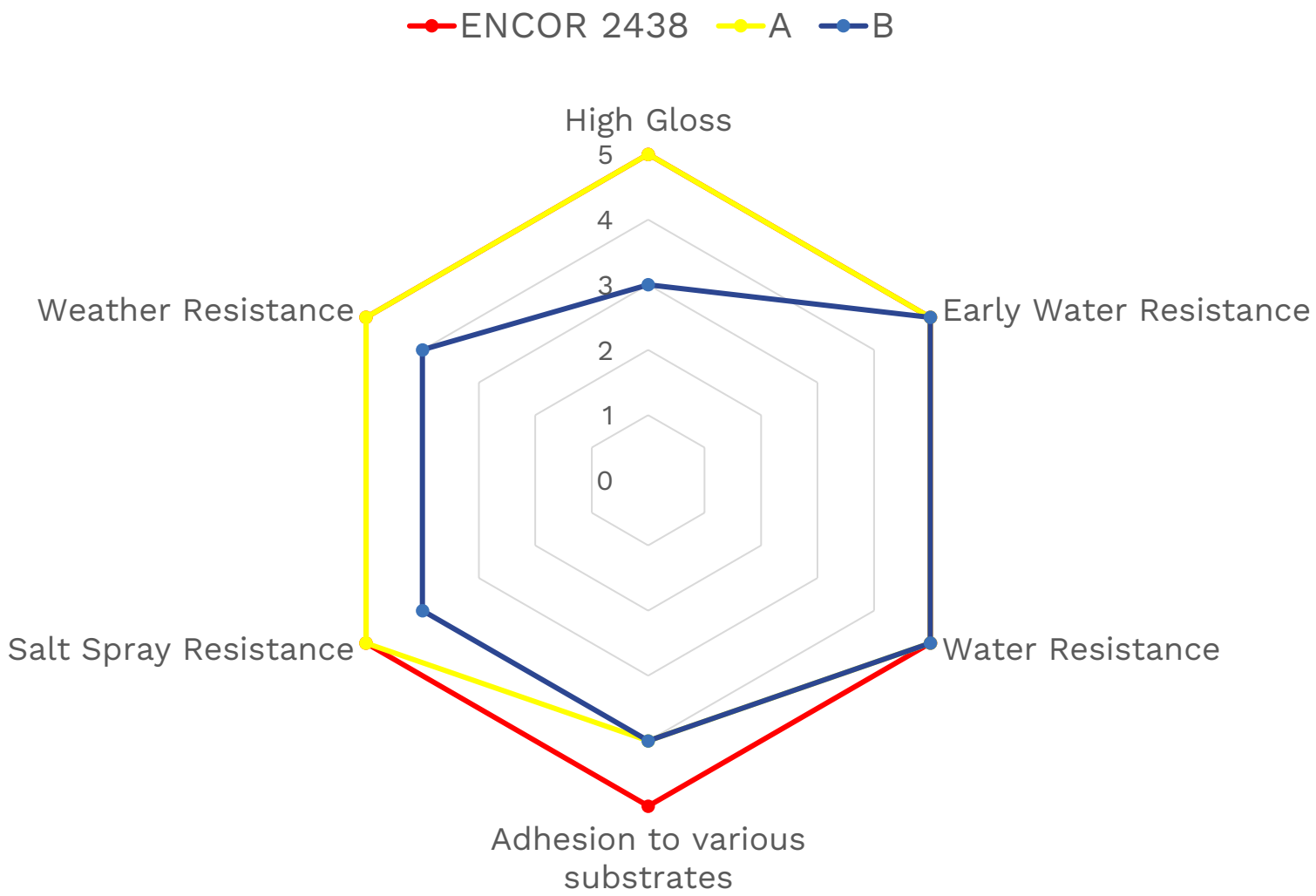
PERFORMANCE COMPARISON

Test formula

Line No	Code	Type	Qty	Note
1	ENCOR 2438	Resin	60.30	
2	Water	DI water	11.20	
3	BYK-024	Defoamer	0.15	premix
4	DPnB	Cosolvent	1.55	
5	DPM	Cosolvent	2.60	
6	byk 333	Levelling agent	0.15	
7	104DPM	Surfactant	0.20	
8	CK-35	Anti-falsh rust agent	0.30	
9	50% Coapur 2025（DPM）	Thixotropic agent	0.30	premix
10	50% Coapur XS83（DPM）	Thixotropic agent	0.20	
11	H2O	DI Water	4.50	pregrind
12	Coadix 790	Wetting Dispersant	1.15	
13	R 706	Titanium Dioxide	10.40	
14	BaSO4 (1250 mesh)	Filler	6.90	
15	BYK-024	Defoamer	0.10	
	Total		100	

Anti-rust pigment (%)	0.00
Resin Solid Content (%)	28.81
Powder Solid Contnet (%)	17.30
PWC (%)	37.51
P/B	0.60
NVW (%)	46.11

PERFORMANCE COMPARISON



Summary

→ ENCOR 2438 can be used in industrial coating (DTM and top-coat) with high gloss, which has good anti-corrosion properties and (early) water resistance.

→ ENCOR 2438 can be used in mono-coat and primer for various substrates, including plastic (PC/ ABS/ PC+ABS), metal (tinplate/ SUS/ Aluminium/ CRS) and Glass.

→ For baking coating,1K coating and 2K coating, ENCOR 2438 can be mixed with certain amount, because of good adhesion to various substrates.

THANKS

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