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ACS Epoxol™ CA 118 provides improved Dirt Pick-Up and Water Resistance in Semi-Elastomeric Masonry Coating

ACS Epoxol™ CA118 was evaluated in a semi-elastomeric masonry coating as a 100% replacement for a traditional high VOC fugitive coalescent. Test results showed improved resistance to water swelling and Dirt Pick-Up resistance.

Table 1. Formulation Semi-Elastomeric Masonry Coating

SEMI-ELASTOMERIC MASONRY COATING
MODEL FORMULATION CST AE-960 (<50 g/l Formulation))

Material	Pounds	Gallons	Kilograms	Liters	Use
		Charge emulsion to letdown tank:			
	482.0	56.70	218.6	214.7	Elastomeric Latex
Carboset AE960					
Water	55.0	6.60	25.0	25.0	********
DrewPlus® L-475	3.0	0.39	1.40	1.5	Defoamer
					In a separate tank, high speed
		disperse the following items to a 7+ Hegman			
Water	120.0	14.65	54.6	54.5	********
Ethylene Glycol	10.0	1.09	4.5	4.0	Cosolvent
Natrosol® 250 MBR	1.5	0.14	0.7	0.5	Rheology Modifier
Tamol® 850	10.0	1.09	4.5	4.3	Dispersant
Triton® CF10	6.0	0.72	2.7	2.5	Surfactant
Drew Plus® L-475	2.0	0.26	0.9	1.0	Defoamer
Acticide® MBS	2.0	0.21	0.9	0.9	In-Can Preservative
DuPont® R706	100.0	3.00	45.4	11.4	White Pigment
Optiwhite®	100.0	4.70	45.4	17.6	Pigment
Imsil® A15	80.0	3.62	36.3	13.7	Pigment
Atomite™	60.0	2.76	27.2	10.5	Pigment
Texanol®	10.0	1.26	4.5	4.8	Cosolvent
Water	5.5	0.66	2.5	2.5	
		Pump grind to letdown tank, adding to emulsion with moderate agitation.			
		Add the next two items with good agitation:			
Water	5.0	0.60	2.3	2.3	**********
DrewPlus® L475	4.0	0.53	1.8	2.0	Defoamer
Acrysol® RM8W	1.6	0.20	0.7	0.7	Rheology Modifier
Ammonia	2.0	0.22	0.9	0.8	pH Control
		Add the next item with good agitation:			
0-VOC Film Preservative	6.0	0.60	2.7	0.60	Film Preservative
Total	**1065.6**	**100.0**	**483.5**	**375.8**	

* For interior use do not add film preservative.

Formula Constants:		Typical Properties:	
Non-volatile (Wt. %)	58.8	Viscosity – Stormer, KU	105 -120
Non-volatile (Vol. %)	47.3	Viscosity – ICI, poise	0.8 – 1.1
Density, g/l	1.3	pH	8.8 – 9.2
Wt./Gal., lbs.	10.7		
VOC – g/liter	48.5		
VOC – lbs/gallon	0.4		
PVC, (%)	32.0		
Pigment to Binder Ratio	1.3		

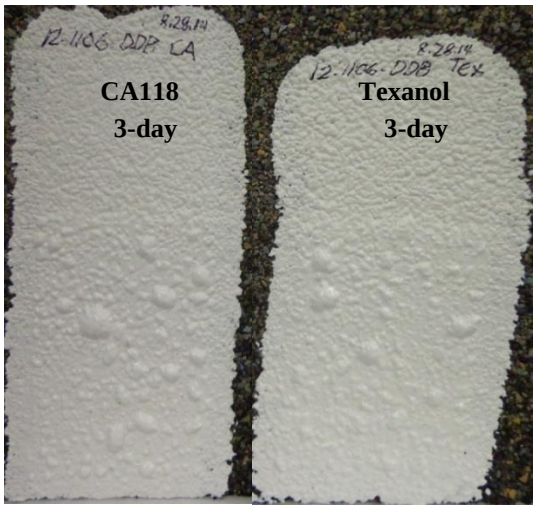

Fig 1. Blister Resistance – 12-1106-DDB

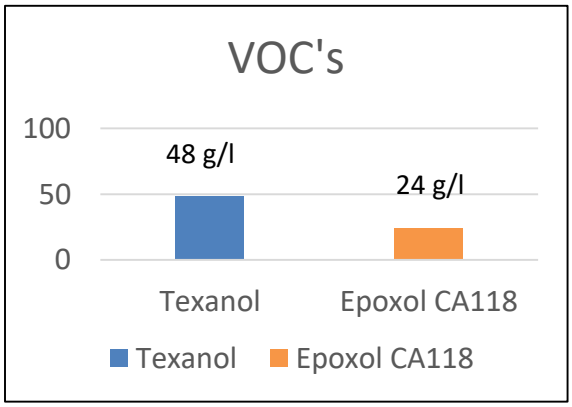

Fig. 2 Reduction of VOC's – 12-1106-DDB

Epoxol™ CA 118 is an Ultra-Low VOC Bio-Based Coalescent that can help formulators meet regulatory requirements without compromising finished coating performance. If you are interested in learning more ACS products, please contact your ACS Representative.

Conclusion: Epoxol™ CA118 improved blister resistance and water swelling vs. Texanol in this elastomeric coating formulation.

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ACS Epoxol™ CA 118 in Semi-Elastomeric Masonry Coating

Properties / Results

Table 2. Test Results / Property

Test / Property	Texanol Formulation	Epoxol™ CA118 Formulation
Blister Resistance[6] 3-Day	#2 MDense	#2 MDense
Blister Resistance[6] Delamination	None	None
% Water Swelling[3]	37.48%	35.28%
Dirt Pick-Up Resistance[8], %Y Reflect. Retained (Dow Meth)	39.0	40.8
Viscosity, KU,Initial	131.6 Ku	131.7 Ku
Heat Aged Stability, Viscosity Final Ku, 4 Weeks @140°F	138.6 Ku Stable	135.6 Stable
In-Can Condition after Aging	Clear yellow syneresis	Clear yellow syneresis
Height of Syneresis	5/16”	3/16”
pH	8.68	9.04
Gloss @ 60° / 85°	6.7 / 13.0	7.2 / 15.3
Opacity	97.62	98.11
Yellowing	5.94	5.95
Reflectance	91.13	91.15
Low Temperature Flexibility[5] -18°C	Pass	Pass
Low Temperature Flexibility[5] -26°C	Pass	Pass

Dirt Pick-Up Resistance

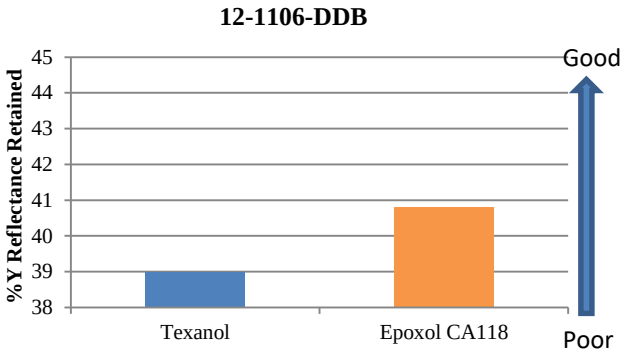

Fig. 3 Dirt pick-up Resistance – 12-1106-DDB

Water Swelling Resistance

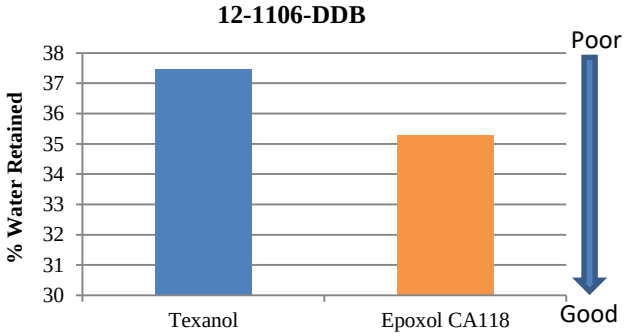

Fig. 4 Water Swelling – 12-1106-DDB