

Eastman **ADVANTEX™**
neutralizing amine additive

Advantex™ provides flash rust protection benefits

Eastman Advantex multifunctional neutralizing amine enables a variety of benefits to architectural coatings, including superb pigment dispersion, excellent emulsion stability, and outstanding syneresis control.

Flash rust protection

Advantex offers a unique level of protection against flash rust, when compared to other amine additives. The ideal film-forming properties of Advantex allow for enhanced corrosion protection. For the high gloss white paint formulation below, flash rust testing was conducted.

Formulation – high gloss white paint



Table 1					
	High gloss white DTM			Supplier	Product ID
	A	B	C		
	Pounds per 100 gallons				
Water	50.0	50.0	50.0	—	—
Tamol 681	11.3	11.3	11.3	Dow	Dispersant
Surfynol CT-111	2.0	2.0	2.0	APCI	Surfactant
Drewplus L 493	1.0	1.0	1.0	Ashland	Defoamer
Ammonia (28%)	7.0	7.0	—	—	Buffer
Advantex	—	—	4.0	Eastman	Buffer
TiPure R-706	220.0	220.0	220.0	Chemours	TiO ₂
Grind					
Avanse MV-100	540.0	540.0	540.0	Dow	Resin
Water	138.9	138.9	138.9	—	—
Add grind					
Texanol	11.0	11.0	11.0	Eastman	Coalescent
Dow DPM	24.0	24.0	24.0	Dow	Coalescent
15% NaNO ₂ (aq)	—	9.0	—	—	—
Acrysol RM 8W	3.0	3.0	3.0	Dow	Thickener
Water	8.2	—	12.0	—	—
TOTAL	1016.4	1017.2	1017.2		
PVC = 17.7%,VS = 37.8%,VOC=98 g/L					

Products may be discontinued or offered under a different name.

A paint sample was applied by drawdown on Q-Panel S-612 cold rolled steel panels to a uniform thickness of 4 mils. The film was allowed to dry for 24 hours at 75°F, 75% relative humidity. The panels were rated for flash rust resistance using the pictorial standards from ASTM D610 Standard Practice for Evaluating the Degree of Rusting.

*This graphic is based on formulas that are nitrite free. With different paint formulas, the results are the same.

Flash rust testing results – high gloss white paint

Advantex™-based paints do not exhibit flash rust in nitrite-free formulas.

Table 2			
	High gloss white DTM		
	A	B	C
Amine	28% NH ₃ (aq)	28% NH ₃ (aq)	Advantex
Level / 100 gallons	7.0	7.0	4.0
Sodium nitrite	—	9.0	—
pH	8.95	8.85	8.91
Viscosity ,KU	105	102	99
Contrast ratio, 3 mils	0.982	0.984	0.981
Reflectance	95.0	95.0	94.9
Gloss 20 degrees	58.3	60.0	63.4
Gloss 60 degrees	79.5	80.5	81.6
Adhesion, cold rolled steel			
7 days dry	5B	5B	5B
Flash rust (10 =no rust,0 =heavy rust)			
24 hours dry, 75°F, 50% RH	6	10	10

Formulation – flat enamel

Table 3					
	Flat enamel			Supplier	Product ID
	A	B	C		
Pounds per 100 gallons					
Water	275.5	275.5	275.5		
Natrosol Plus 330	2.5	2.5	2.5	Ashland	Thickener
Mix					
28% NH ₃ (aq)	11.0	11.0			Buffer
Advantex			4.0	Eastman	Buffer
Acticide BW 20	1.1	1.1	1.1	Thor Products	Biocide
FoamStar A-38	1.5	1.5	1.5	BASF	Defoamer
Tamol 1124	7.0	7.0	7.0	Dow	Dispersant
Carbowet DC 01	2.0	2.0	2.0	APCI	Surfactant
Tronox CR 826	235.0	235.0	235.0	Tronox	TiO ₂
#10 White	35.0	35.0	35.0	Imerys	Extender
Minex 4	35.0	35.0	35.0	Unimin Corp	Extender
Optiwhite MX	150.0	150.0	150.0	Burgess Pigment	Extender
Grind					
Water	33.2	33.2	33.2		
EcoVAE 401	350.0	350.0	350.0	Celanese	Resin
15% NaNO ₂ (aq)	—	9.0	—		
Polyphobe TR116	9.0	9.0	9.0	Arkema	Thickener
FoamStar A-38	1.5	1.5	1.5	BASF	Defoamer
Water	12.2	4.0	20.6		
TOTAL	1161.5	1162.3	1162.9		
PVC = 47.5%,VS = 38.8%,wcalculated VOC=<5g/L					

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Flash rust testing results – flat enamel

Advantex-based paints do not exhibit flash rust in nitrite-free formulas.

Table 4			
	Flat enamel		
	A	B	C
Amine	28% NH ₃ (aq)	28% NH ₃ (aq)	Advantex
Level / 100 gallons	8.5	8.5	4.0
Sodium nitrite	—	9.0	—
pH	8.61	8.48	8.59
Viscosity ,KU	106	108	108
Contrast ratio, 3 mils	0.974	0.978	0.976
Reflectance	92.4	92.1	92.0
Gloss 85 degrees	3.4	3.4	3.5
Adhesion, cold rolled steel			
7 days dry	4B	3B	4B
Flash rust (10 =no rust,0 =heavy rust)			
24 hours dry, 75°F, 50% RH	6	10	10

Note: amines should not be used with nitrites

To learn more about Advantex, visit
www.eastman.com

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The results of insight™

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