



Ethox

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FORMULATION OF AN EGGHELL BASE PAINT USING ESPERSE 100 AND ESPERSE 506 AS DISPERSANTS/RHEOLOGICAL STABILIZERS

Often, the use of conventional nonionic surfactants as dispersants and wetting agents in latex paints is detrimental to proper rheological characteristics. Using Esperse 100 and 506 in a white latex paint formulation enhances pigment dispersion and contributes to the pseudoplastic character necessary in the formulation. Thickening agent levels may potentially be reduced, as a result. A basic formulation designed to identify performance differences between Esperse and other dispersants is shown below:

	<i>Formula 1</i>		<i>Formula 2</i>	
	<i>Batch</i>	<i>Percent</i>	<i>Batch</i>	<i>Percent</i>
<i>Grind:</i>				
Water	67.54	16.88	67.54	16.88
Competitive surfactant	4.09	1.02	0.00	0.00
Espere 100	0.00	0.00	2.00	0.50
Espere 506	0.00	0.00	2.09	0.52
AMP 95	1.11	0.28	1.11	0.28
Defoamer 31	3.71	0.93	3.71	0.93
Kaolin - Burgess #40	34.92	8.73	34.92	8.73
R 700 TiO2	84.42	21.11	84.42	21.11
Calcium Carbonate	34.17	8.54	34.17	8.54
Acti Gel 208	1.49	0.37	1.49	0.37
	231.46		231.46	
<i>Letdown:</i>				
Rhoplex AC 264	128.93	32.23	128.93	32.23
Acrysol RM 2020	10.57	2.64	10.57	2.64
TXIB	4.09	1.02	4.09	1.02
Water	23.10	5.77	23.10	5.77
Defoamer 31	1.86	0.46	1.86	0.46
	400.00	100.00	400.00	100.00

*Espere 100, Espere 506 and Defoamer 31 are trademarks of Ethox Chemicals, LLC
AMP 95 is a trademark of The Dow Chemical Company*

*TXIB is available from Eastman Chemical Company
Rhoplex AC 264 and Acrysol RM 2020 are trademarks of Rohm and Haas
Acti Gel 208 is a trademark of the Active Minerals Company*

PROPERTIES:

The Stormer viscosities of the two formulations are as follows. A commercially available high quality latex base is also shown for comparative purposes:

<i>Sample</i>	<i>Stormer Viscosity</i>
Formula 1	100.1
Formula 2	110.1
Commercial Paint	111.5

Brookfield viscosity profiles were also compared. The Esperse blend gave a similar profile to that of the commercially available base paint, without the use of cellulosic thickeners. The formula with the competitive dispersants (Formula 1) was low in viscosity and pseudoplasticity:

