

## *Product Data*

**NUMBER 4200**

### **AQUAFLOW<sup>®</sup> NLS-200 Rheology Modifier For Waterborne Architectural Coatings**

**AQUAFLOW<sup>®</sup> NLS-200** rheology modifier is a nonionic associative polymer solution designed to build stiffer viscosity and provide superior flow and leveling in latex paints.

Aquaflow NLS-200 is compatible with acrylic, styrene-acrylic and vinyl-acrylic latexes, and can be used in interior and exterior formulations.

#### **Typical Properties<sup>(a)</sup>**

Chemical type .....	hydrophobically modified polyether
Appearance .....	hazy white liquid
Solids, weight % .....	25
Carrier .....	80/20 water/diethylene glycol monobutyl ether
Viscosity as supplied, cP .....	3,000-4,500
Density, lbs/gal .....	8.73

<sup>(a)</sup>The above is a brief description of the typical properties and should not be considered product specifications.

#### **Benefits**

- Cost effective
- Superior flow and leveling
- Excellent spatter resistance
- Full gloss development
- pH insensitive
- Biostable

#### **Applications**

Aquaflow NLS-200 can be used in a variety of paint formulations, and is fully compatible with other rheology modifiers. For example, using Aquaflow NHS-300 with Aquaflow NLS-200 will increase high-shear viscosity. Adding Natrosol<sup>®</sup> Plus modified hydroxyethylcellulose can enhance sag resistance and color development

The performance of Aquaflow NLS-200 in an eggshell, semigloss and high-gloss paint is summarized in Table 1. Complete paint formulations are in Table 2.

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**Table 1  
Aquaflow® NLS-200 Rheology Modifier Performance**

<b>Rheology Modifier</b>	<b>Efficiency, dry lbs/100 gal</b>	<b>Stormer Viscosity, KU</b>	<b>ICI, poise</b>	<b>Leveling, Leneta</b>	<b>Spatter Resistance</b>	<b>Sag Resistance, mils</b>	<b>Gloss, 20°/60°/85°</b>
<b>36% PVC Vinyl-Acrylic Eggshell</b>							
Aquaflow NLS-200	5.3	96	2.0	9	9	6	-/10/28
Aquaflow NLS-200/ Natrosol® Plus 330	3.3/1.3	93	1.5	9	9	10	-/11/26
<b>24% PVC Interior Acrylic Semigloss</b>							
Aquaflow NLS-200/ Aquaflow NHS-300	0.3/6.9	97	1.5	9	9	10	44/75/-
<b>19% PVC Styrene-Acrylic High-Gloss Enamel</b>							
Aquaflow NLS-200/ Aquaflow NHS-300	0.9/5.4	101	1.7	10	9	8	58/81/-

**Incorporation**

In vinyl-acrylic paints, Aquaflow NLS-200 should be added to the letdown before the latex. When Aquaflow NLS-200 and NHS-300 are used together in small particle size latex paints, Aquaflow NHS-300 should be added first.

In some formulations, diluting Aquaflow NLS-200 aids incorporation. The recommended procedure is to dilute Aquaflow NLS-200 to 12.5% solids with an 80/20 water/diethylene glycol monobutyl ether (butyl Carbitol® solvent) mixture.

**Product Safety**

Please read and understand the MSDS before using this product.

**Table 2**  
**Paint Formulations**  
**36% PVC Vinyl-Acrylic Eggshell**

<u>Materials</u>	<u>Pounds</u>	<u>Gallons</u>
Water	231.2	27.75
<b>Natrosol® Plus 330</b>	<b>1.3</b>	<b>0.11</b>
<i>Nuosept 145</i>	2.3	0.25
<i>Tamol 731A</i>	9.2	1.00
<i>Triton N-57</i>	2.3	0.25
<i>AMP 95</i>	1.0	0.13
Propylene glycol	51.8	6.00
<i>Colloid 643</i>	1.9	0.25
<i>Tronox CR-800</i>	225.0	6.54
<i>Optiwhite</i>	100.0	5.46
<i>Burgess No. 98</i>	25.0	1.15
<b>Grind to Hegman 5+, then let down slowly as follows:</b>		
<i>Texanol</i>	11.9	1.50
<i>Butyl Carbitol</i>	11.9	1.50
<b>Aquaflow® NLS-200</b>	<b>13.2</b>	<b>1.53</b>
<i>Ucar Latex 367 (55%)</i>	418.2	46.21
<i>Colloid 643</i>	2.8	0.37
<b>Total</b>	<b>1,109.0</b>	<b>100.00</b>
PVC — 35.6%		
NVV — 37.6%		
NVW — 53.4%		
pH — 8.2		
Stormer Viscosity, initial — 90 KU		
Gloss, 60°/85° — 9/25		

**24% PVC Interior Acrylic Semigloss**

Propylene glycol	65.0	7.51
<i>Tamol 731A</i>	13.6	1.48
<i>Foamaster VL</i>	1.0	0.13
<i>Kathon LX 1.5%</i>	1.8	0.22
<i>Ti-Pure R-900</i>	268.0	8.04
Water	12.0	1.44
<b>Grind to Hegman 7+, then let down slowly as follows:</b>		
Water	88.0	10.56
<i>Rhoplex SG-10M (50%)</i>	489.2	55.47
<i>Texanol</i>	24.5	3.09
<i>Foamaster VL</i>	1.0	0.13
<b>Aquaflow NHS-300</b>	<b>34.5</b>	<b>4.0</b>
<b>Aquaflow NLS-200</b>	<b>1.2</b>	<b>0.14</b>
Water	64.9	7.79
<b>Total</b>	<b>1,064.7</b>	<b>100.00</b>
PVC — 23.7%		
NVV — 34.0%		
NVW — 48.6%		
pH — 8.8		
Stormer Viscosity, initial — 95 KU		
Gloss, 60°/20° — 73/42		

Note: All marks in italics are registered trademarks.



**Table 2 (Continued)  
Paint Formulations**

**19% PVC Styrene-Acrylic High Gloss**

<u>Materials</u>	<u>Pounds</u>	<u>Gallons</u>
Water	55.0	6.61
<i>Tamol</i> 1124 (50%)	9.8	1.00
<i>Kathon</i> LX 1.5%	2.0	0.24
<i>Dehydran</i> 1293	2.0	0.27
Propylene glycol	20.3	2.35
<i>AMP</i> -95	0.2	0.02
<i>Tronox</i> CR-828	210.6	6.18
<b>Grind to Hegman 8, then let down slowly as follows:</b>		
<i>Rhoplex</i> HG-74P (42%)	568.5	66.03
<i>Dehydran</i> 1293	1.0	0.13
<i>Dowanol</i> DPnB	22.8	3.00
Propylene glycol	10.1	1.17
<b>Aquaflow® NHS-300</b>	<b>27.0</b>	<b>3.13</b>
<b>Aquaflow® NLS-200</b>	<b>3.6</b>	<b>0.41</b>
Water	78.8	9.46
<b>Total</b>	<b>1,011.70</b>	<b>100.00</b>
PVC — 19.0%		
NVV — 33.5%		
NVW — 45.6%		
pH — 8.1		
Stormer Viscosity, initial — 95 KU		
Gloss, 60°/20° — 80/60		