

CIMBAR

Performance Minerals

VISTROL PL™

Quaternary/Clay Complex

This product is produced from carefully selected naturally occurring minerals, and high quality quaternary ammonium chloride compounds.

VISTROL PL For Plastic Laminates

Cimbar's VISTROL PL organoclays are a new generation of rheology modifiers developed by the company that first produced organoclays in the 1950's. By combining nearly 50 years of production experience with newly developed technology, Vistrol PL organoclays have been designed specifically to replace fumed silica in unsaturated polyester resin systems. In comparison with fumed silica and previous organoclays, Vistrol PL organoclays offer a number of advantages.

Benefits

- Stable viscosity
- Low bulk density
- Good color in laminates
- Contains no chlorides
- Excellent Thix Index
- Low dusting
- Easily incorporated and excellent Rheology

Incorporation:

- Vistrol PL organoclays are incorporated into polyester resin formulations by high-speed dispersion or as a concentrated pre-gel as high as 20% in styrene
- The gel is prepared by incorporating Vistrol PL organoclays into styrene with medium speed mixing
- The pre-gel can be incorporated at any time during manufacture of an un-saturated polyester formulation
- Typical usage levels are 0.3-1.0% by weight of the resin; full gel strength is achieved by the incorporation of the BYK 605 dispersing aid (from BYK Chemie)
- Thorough dispersion is essential to achieve ideal separation stability

VISTROL PL Organoclays For High Solid Epoxy and Liquid Non-Solvent Coatings.

Vistrol PL organoclays are designed for use in many thermo set resin systems. Included in these systems are amines or amide cured epoxies. The benefits of using Vistrol PL organoclays in coatings are: efficient rheology control, requires no polar activator; excellent sag control – reported to be up to 40% more effective than fumed silica or castor wax, low dusting, improved pigment suspension and easy add - lower addition shear than most rheological additives.

Applications:

- Polyester laminates
- Gelcoats
- Auto and marine putties
- Epoxy resin coatings
- Liquid non-solvent paints and coatings

TYPICAL PHYSICAL PROPERTIES

Weight Loss @ 1000°C	35%
Moisture Content average	2.0%
Color	Light Cream
Form	Fine Powder
Dispersed Particle size	25 microns
Specific Gravity	1.1

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RESULTS IN A TYPICAL RESIN LAMINATE FORMULATION

RESIN TYPE	Vinyl ester 60% NV		DCPD 70% NV		PET/Blend 70% NV		Orthophthalic 68% NV		Orthophthalic 60% NV	
INGREDIENT	Weight %		Weight %		Weight %		Weight %		Weight %	
Resin	50.00		50.00		50.00		50.00		65.00	
Defoamer – BYK A-555	0.15		0.10		0.20		0.20		0.15	
Start mixer at low speed, then add:										
Rheological additive	0.25		0.50		0.80		0.50		0.60	
Mix at moderate speed for 10 mins, then add:									Disperse in 8 mins add	
Resin	40.80		34.60		35.10		32.58		22.30	
Styrene	8.50		14.60		13.70		16.70		11.60	
Suitable Promoters	0.20		0.10		0.20		0.10		0.26	
Mix at high speed for 20 mins, then add:										
Byk R-605	0.10		0.10		0.10		0.10		0.09	
									0.06 *	
Mix well									*Byk R-605 Tween 20 for Fumed Silica	
PROPERTIES	Vistrol PL	Fumed Silica	Vistrol PL	Fumed Silica	Vistrol PL	Fumed Silica	Vistrol PL	Fumed Silica	Vistrol PL	Fumed Silica
Initial Viscosity Brookfield RTV										
5rpm	2,100	2,400	1,300	-----	1,800	-----	3,600	-----	2,800	2,300
50rpm	920	1,300	350	-----	670	-----	1,000	-----	920	990
Thix Index	2.28	1.85	3.71	-----	2.69	-----	3.60	-----	3.04	2.32
Viscosity after 24 hrs									Viscosity after 1 week	
5rpm	3,000	2,600	1,400	-----	1,800	-----	4,000	-----	3,000	2,500
50rpm	1,100	1,850	360	-----	680	-----	1150	-----	1,000	1,150
Thix Index	2.73	1.41	3.88	-----	2.65	-----	3.49	-----	3.00	2.17
	Competitive Organoclay		Competitive Organoclay		Competitive Organoclay		Competitive Organoclay		Competitive Organoclay	
Initial Viscosity										
5rpm	-----		1,500		2,000		3,600		-----	
50rpm	-----		430		780		990		-----	
Thix Index	-----		3.49		2.56		3.64		-----	
Viscosity after 24 hrs										
5rpm	-----		1,600		1,900		4,000		-----	
50rpm	-----		450		770		1,100		-----	
Thix Index	-----		3.56		2.47		3.64		-----	

