

Information Sheet

Veova[™] 10 Vinyl Ester

Weatherability For Exterior Paints



Weather Resistant Veova Copolymers

Vinyl Acetate/Veova vinyl ester copolymers

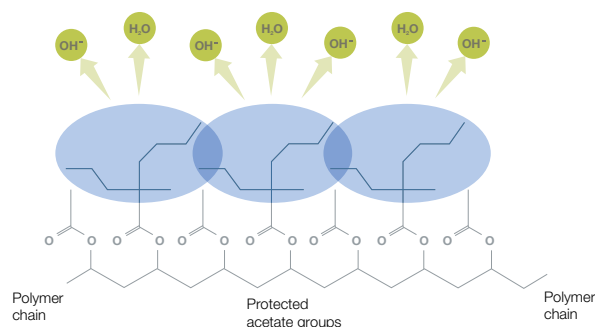
Veova vinyl ester has reactivity similar to that of vinyl acetate making it very easy to copolymerize and produce a random copolymer. Such vinyl acetate/Veova vinyl ester (VA/VV) copolymers are very suitable for exterior wall paint applications. Starting formulations can be obtained upon request.

Key Properties

Veova vinyl ester protects the polymer backbone

Veova 10 vinyl ester provides a branched tertiary structure with bulky and hydrophobic hydrocarbon groups that protect the neighboring vinyl acetate molecules from saponification. VA/VV copolymer systems exhibit a much higher degree of alkali and water resistance than typical vinyl-acetate/butyl-acrylate copolymers.

Umbrella effect of the bulky structure of Veova vinyl ester



Vinyl acetate/Veova vinyl ester copolymer properties for exterior use

- Excellent water resistance and dirt pick up resistance
- Inherent UV stability and outdoor durability
- Improved adhesion on construction substrates
- Improved alkaline resistance

Hydrophobicity and Alkali Resistance

Solubility in water

Veova vinyl ester is the most hydrophobic monomer as measured by solubility (see table).

Monomer	Water solubility at 20 °C (g/100mL)	Carbon / Oxygen (C/O) Ratio
Veova 10 vinyl ester	< 0.001	6
Butyl acrylate	0.16	3.5
Methyl methacrylate	1.5	2.5
Vinyl acetate	2.5	2

Alkali resistance

The below test results demonstrate the improved alkali resistance of the VA/VV copolymer compared to commercial vinyl acetate/acrylic (VA/Acrylic) copolymers and commercial all acrylic and styrene/acrylic (Sty/Acrylic) systems.

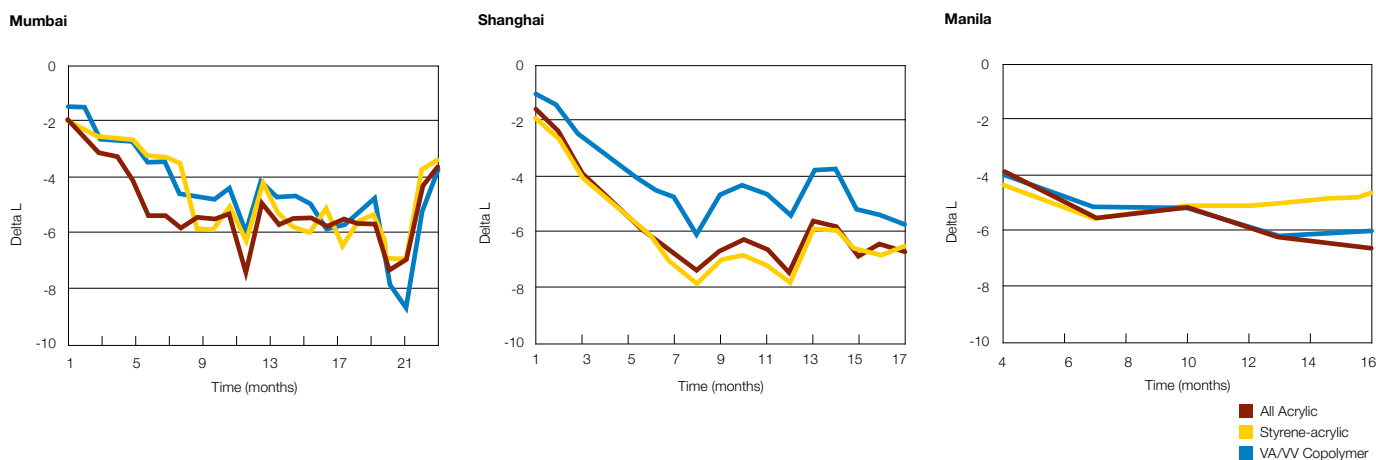
Alkali extractable of clear latex film (%m/m; in-house test method)

Commercial VA/Acrylic	Commercial Sty/Acrylic 1	Commercial All Acrylic	Commercial Sty/Acrylic 2	VA/VV Copolymer
5.6%	3%	< 3%	< 3%	< 3%

Veova vinyl ester imparts a high level of water and alkali resistance to vinyl systems due to its hydrophobic nature.

Exterior Exposure Performance (DPUR)

Depending on local climate and weather conditions, VA/VV copolymer performs either similarly or better in dirt pick-up resistance (DPUR) in three cities in Asia than the styrene/acrylic and all-acrylic systems that were tested as benchmarks.



Summary

Veova vinyl ester can be copolymerized with vinyl acetate to produce VA/VV vinyl ester copolymers for exterior paints. The Hexion Versatics team determined an optimum Veova content that makes such copolymers highly suitable for exterior weather conditions that perform as well as all acrylics in terms of durability, alkali/water resistance and dirt pick-up resistance, and better than styrene/acrylics in terms of yellowing and chalk resistance.

Reach our Global Customer Service network at:

E-mail: service@hexion.com or enter a request on our website www.hexion.com under "contact us"



World Headquarters

180 East Broad Street
Columbus, OH 43215-3799

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