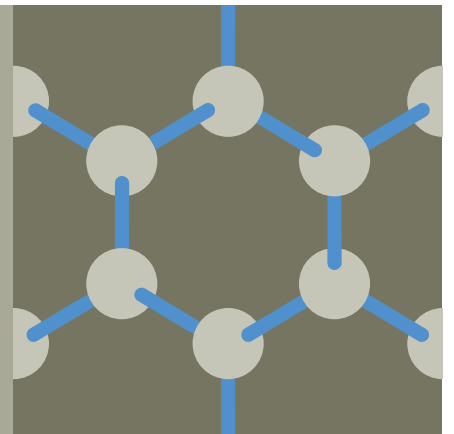




Veova
**Latices for Solvent-Free
and Low-Odor Paints**



Veova™ Monomer 10

Veova10™ monomer is the vinyl ester of *Versatic™* acid 10, a highly branched carboxylic acid containing 10 carbon atoms.

Veova10 monomer has a unique hydrophobic bulky structure and is used in the production of a broad range of high quality latex polymers. Veova10 monomer can be used as co-monomer with vinyl acetate, ethylene and various (meth)acrylates for the production of aqueous coating binders.

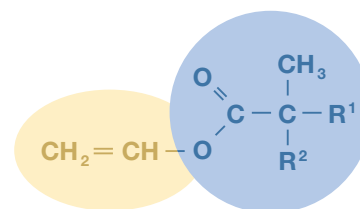
Structure and Properties:

Vinyl Ester:

Easily copolymerisable with various monomers such as vinyl acetate, ethylene, acrylates and methacrylates.

Versatic 10:

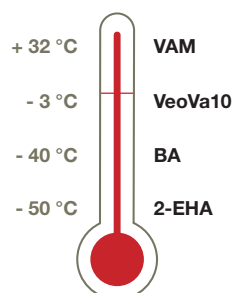
- Hydrophobic
- UV resistant
- Hydrolytically stable



Vinyl Ester of Versatic 10
R¹ + R² = 7 carbon atoms

Low VOC coatings

There is an increasing demand for paints with virtually no emission of volatile organic compounds (VOC). In emulsion paints coalescing solvents by far represent the largest part of the VOC in the paint. To formulate solvent free paints the latex needs to have an MFFT of about 0 – 5 °C. Emulsion polymers with the desired MFFT can be prepared by copolymerization of low T_g flexibilizing monomers.



Homopolymer T_g

VAM

Cheap but hard monomer

Veova10

Flexibilizing and hydrophobic monomer

Soft acrylates

Highly flexibilizing co-monomers

VAM / Veova10 / Acrylic Terpolymers

Copolymer latices of vinyl acetate and Veova10 have been successfully used to formulate traditional high quality emulsion paints. Incorporation of an additional soft acrylate such as BA or 2-EHA sufficiently reduces the MFFT to produce solvent-free paints.

Suitable VAM / Veova10 / acrylic terpolymers can be made with various monomer ratios and prepared as either colloid-free or colloid stabilized latices.

These latices perform very well in a wide range of low-VOC decorative paints. They can be made in standard emulsion reactors and unlike ethylene modified VAM (VAE) polymers do not require high pressure conditions.

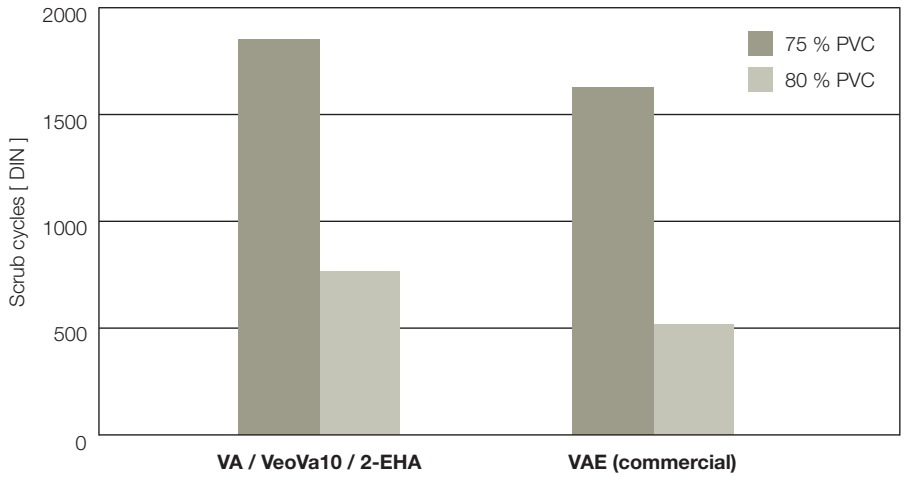
VAM / Veova10 / Acrylic Terpolymers		
Polymer Type	Monomer Ratio	MFFT
Colloid-free latices		
VAM / Veova10 / BA	60 / 20 / 20	5 °C
VAM / Veova10 / BA	55 / 15 / 30	0 °C
Colloid-stabilised latices		
VAM / Veova10 / EHA	55 / 20 / 25	0 °C
VAE	-	0 °C

Matt interior paints

One of the most important properties for interior wall paints is their scrub resistance. In general the elimination of coalescing agents and use of low MFFT latices leads to a poorer scrub resistance compared to conventional paints.

VA / VeoVa10 / 2-EHA colloid-stabilized terpolymers containing a small amount of a cross-linkable silane monomer exhibit a very good mud-cracking resistance and scrub resistance especially at very high pigmentation (PVC) levels. They outperform VAE polymers with a similar MFFT.

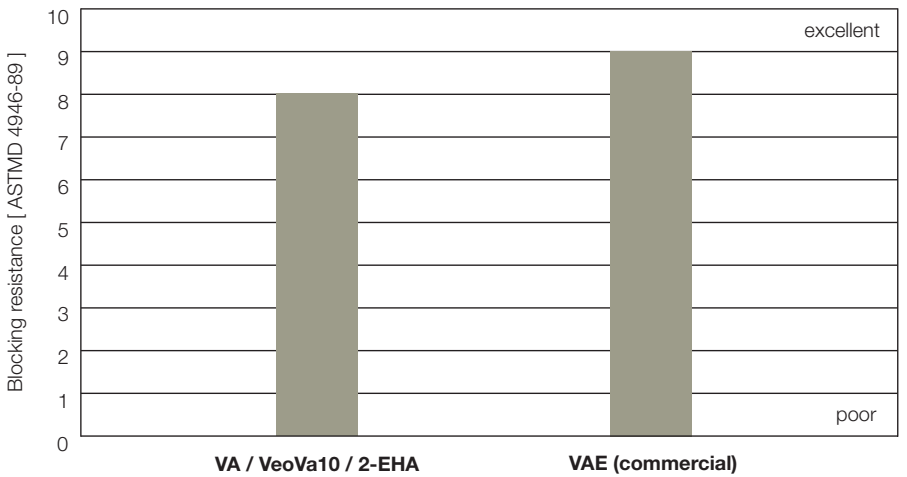
Scrub resistance of matt paints



Silk paints

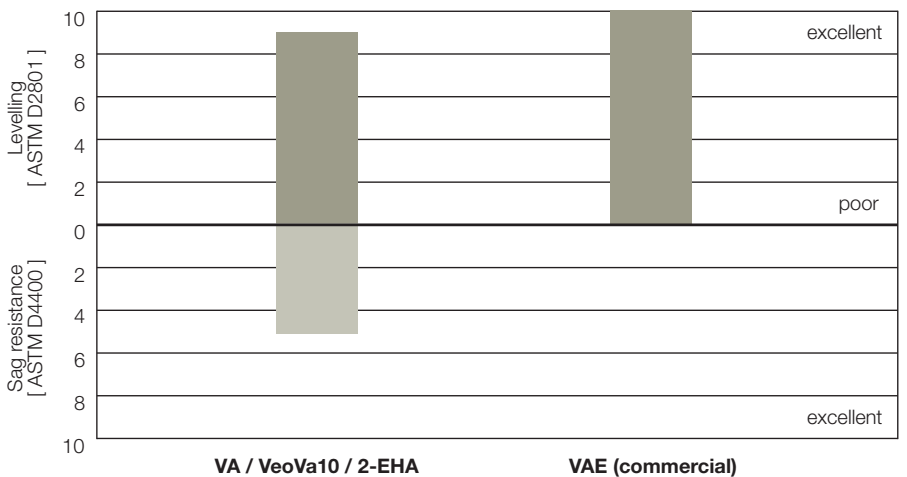
The typical gloss level of silk paints is achieved at around 25 % to 45 % PVC. The relatively high polymer content makes the paints more sensitive to blocking. The silane containing VA / VeoVa10 / 2-EHA terpolymer described above exhibits a very good blocking resistance comparable to that of VAE polymers. VeoVa10 furthermore contributes to make the coating resistant to water and household chemicals.

Blocking resistance of 35 % PVC silk paint



To maximize the gloss potential of these silk paints a delicate balance between sagging and levelling is necessary. Whereas many emulsion paint binders can only offer a good levelling at the expense of bad sag resistance, the VeoVa10 binders are well known for their balanced rheological performance. In addition the colloid-stabilized nature of the polymer leads to an increased open-time of the paints compared to acrylic and styrene / acrylic based polymers.

Sag resistance and levelling of 35 % PVC silk paint



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