

# VINNAPAS® EF8001

## Product description

VINNAPAS® EF8001 is an aqueous dispersion of a vinyl acetate-ethylene (VAE) copolymer. It was developed as an environmentally friendly, higher performance replacement for vinyl acrylic copolymers.

## Properties

As a broad application binder for architectural coatings, VINNAPAS® EF8001 provides a variety of benefits for the coatings formulator.

The use of the word “green” has become very common to describe things that are environmentally friendly. VINNAPAS® EF8001 is designed to meet all foreseeable “green” requirements for the coatings industry.

- It is alkylphenol ethoxylate (APEO) free meaning it does not use any surfactants or defoamers that contain APEO.
- It does not contain any formaldehyde sources or formaldehyde donors.
- It is extremely low in residual vinyl acetate monomer (VAM) at <0.05%, and also low in overall volatile organic compounds (VOCs).
- It has a low glass transition temperature ( $T_g$ ) and minimum film formation temperature (MFFT) which provide the polymer with a very low to no cosolvent demand for proper film formation.

VINNAPAS® EF8001 continues the standard for scrub resistance set by VAE copolymers as evidenced by evaluations of several different formulations that show it outperforming both conventional and low VOC latexes. This allows paint formulators to develop paints with extremely high levels of scrub resistance.

A key requirement for contractor flat paints involves the property of touch-up, which is characterized as maintaining a visually uniform appearance of a film surface upon repainting after the initial coat of paint has been applied. While the choice of pigments used in the formulation can also have a significant effect on this property, the choice of polymer has a major impact on low temperature touch-up, particularly in lower VOC systems. VINNAPAS® EF8001 exhibits excellent ambient and low temperature touch-up properties in general, which is characteristic of many VAE polymers.

VINNAPAS® EF8001 exhibits excellent thickener response with a number of different thickener types, including hydrophobically modified cellulosics (HMHEC), hydrophobic ethoxylated urethanes (HEUR), and hydrophobic alkali-swelling emulsions (HASE).

With the ever-tightening restrictions on the permissible level of VOCs in coatings, it is becoming more important that the polymers used in formulations can be formulated at lower solvent levels without sacrificing performance. Many commercial binders used today, especially conventional vinyl acrylics, suffer significantly in performance when formulated at lower solvent levels. VINNAPAS® EF8001 requires little to no coalescing solvent, which allows formulators to develop high performance coatings even at 0 VOC. The reduction in solvent provided by formulating with VINNAPAS® EF8001 compared with conventional vinyl acrylics can deliver additional raw material cost savings.

## Application

VINNAPAS® EF8001 represents the next in a line of VAEs that is positioned to broadly replace vinyl acrylics in the architectural coatings industry. It has application in contractor and Do-it-Yourself (DIY) products and is recommended for flat through mid-sheen finishes. With the environmentally friendly design of VINNAPAS® EF8001, it is compliant with any major “green” requirements foreseeable in the coatings industry.

VINNAPAS® EF8001 is also very compatible with other latex dispersions and can be blended with other polymers such as high  $T_g$  pure acrylics to provide improved block resistance and wet adhesion, properties which are necessary in higher end and higher gloss/sheen coatings.

Exterior performance of VINNAPAS® EF8001 has not been determined yet. It will be fully evaluated with exposures on the Wacker test fence in Allentown, PA starting in the Spring of 2009

## Processing

Specific formulating tips are available upon request and in the future will be available in the *Formulation Guidelines* bulletin on the WACKER web-site.

### Storage

When VINNAPAS® EF8001 dispersion is stored in tanks, proper storage conditions must be maintained. If stored in the original, unopened containers at cool (below 30 °C), but frost-free temperatures VINNAPAS® EF8001 dispersion has a shelf life of 6 months. Iron or galvanized-iron equipment and containers are not recommended because the dispersion is slightly acidic. Corrosion may result in discoloration of the dispersion or its blends when further processed. Therefore the use of containers and equipment made of ceramics, rubberized or enameled materials, appropriately finished stainless steel, or plastic (e.g. rigid PVC, polyethylene or polyester resin) is recommended.

### Preservation for Transport, Storage and further Processing

VINNAPAS® EF8001 is adequately preserved during transportation and storage if kept in the original, unopened containers. However, if it is transferred to storage tanks, the dispersion should be protected against microbial attack by adding a suitable preservative package.

To maintain proper storage conditions appropriate measures should also be taken to ensure cleanliness of the tanks and piping. In a storage tank in which VINNAPAS® EF8001 is not stirred, it is advisable to contact your biocide representative/supplier. Proper procedures must be set up in order to prevent microbial attack between necessary periodic tank cleaning and sanitization. These procedures will vary, since loading and unloading practices in each storage

situation will differ slightly.

Finished products manufactured from polymer dispersions usually also require preservation. The type and scope of preservation will depend on the raw materials used and the anticipated sources of contamination. The compatibility with other components and the efficacy of the preservative should always be tested in the respective formulation. Preservative manufacturers will be able to advise you about the type and dosage of preservative required.

### Additional information

If VINNAPAS® EF8001 is used in applications other than those mentioned, the choice, processing and use of VINNAPAS® EF8001 is the sole responsibility of the purchaser. All legal and other regulations must be complied with.

For questions concerning food contact status according to chapter 21 CFR (US FDA) and German BfR, please contact:

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### Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER sales offices or may be printed via WACKER web site [www.wacker.com/vinnapas](http://www.wacker.com/vinnapas).

<b>Product data</b>		
<b>Specification data</b>	<b>Inspection Method</b>	<b>Value</b>
Solids content	WACKER method	54.0 - 56.0
Viscosity, Brookfield LVF #3 @ 60 rpm	WACKER method	150 – 650 cPs
pH-Value	WACKER method	4.0 – 5.0
VAM by Head Space GC	WACKER method	<0.05% max.
<b>Typical general characteristics</b>	<b>Inspection Method</b>	<b>Value</b>
Density*	WACKER method	1.07 g/cm <sup>3</sup>
Predominant particle size*	WACKER method	approx. 190 – 260 nm
Glass transition temperature DSC*	WACKER method	approx. +6 °C

\*These figures are only intended as a guide and should not be used in preparing specifications.

The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose.

The management system has been certified according to DIN EN ISO 9001 and DIN EN ISO 14001

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For technical, quality, or product safety questions, please contact:

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