

# VINNAPAS® EZ222

## Product description

VINNAPAS® EZ222 is a hydroxyethyl cellulose/surfactant stabilized vinyl acetate-ethylene (VAE) copolymer dispersion with a glass transition temperature ( $T_g$ ) of +18.0°C. It was developed to offer excellent sprayability and clear, flexible, water-resistant films.

## Properties

VINNAPAS® EZ222 offers good wet tack and speed of set and is fast drying. It has low thickening response to plasticizers and solvents. The hydroxyethyl cellulose (HEC) stabilization, low viscosity, high solids content, and excellent mechanical stability allow this product to have excellent sprayability. VINNAPAS® EZ222 exhibits good adhesion to polar and nonpolar surfaces. It also heat seals to paper and packaging films at lower temperatures than VINNAPAS® 400. The dried film is clear, flexible, and exhibits very good water resistance. The total free residual vinyl acetate monomer content is less than 1,000 ppm and is manufactured without the use of any surfactants or defoamers that contain alkylphenol ethoxylates.

## Application

VINNAPAS® EZ222 has the ability to adhere to a wide variety of surfaces which makes it particularly well suited for many flocking, packaging and laminating applications. VINNAPAS® EZ222 can be used in adhesives to bond films such as polyvinyl chloride, polyvinylidene chloride, cellulose acetate, polystyrene, and cellophane to porous substrates. It can also be used to bond such widely diversified substrates as leather, paper, cloth (made from natural or synthetic fibers), urethane foam and many types of coated paperboard — notably SBR-coated board and acrylic-coated board.

## Other Applications

VINNAPAS® EZ222 can be used in flat to mid-sheen DIY architectural coatings applications. It provides excellent scrub resistance and the large particle size provides good flow and leveling.

## Processing

VINNAPAS® EZ222 is compatible with dextrin and does not coagulate in the presence of borax. VINNAPAS® EZ222 is compatible with other VINNAPAS® VAE dispersions, poly(vinyl acetate), and vinyl acrylic copolymer dispersions. VINNAPAS® EZ222 can also accept high levels of various additives, including rubber lattices, while maintaining a workable viscosity.

Plasticizers and tackifying resins generally used with VAE and poly(vinyl acetate) and copolymer dispersions can be used with VINNAPAS® EZ222. The thickening response of VINNAPAS® EZ222 to solvents and plasticizers is low. Thickening can be accomplished using such materials as hydroxyethyl cellulose or polyacrylic acid-acrylamide copolymer resins. VINNAPAS® EZ222 will accept high loadings of such fillers as calcium carbonate and clay without appreciably changing the viscosity.

## Storage

When VINNAPAS® EZ222 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® EZ222 has a shelf life of 9 months from the date of manufacture. 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® EZ222 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® EZ222 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® EZ222 is used in applications other than those mentioned, the choice, processing and use of VINNAPAS® EZ222 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).

**Product data**

Specification data	Inspection Method	Value
Solids content	specific method	54.0 - 56.0 %
Viscosity, dynamic at 25 °C	specific method	100 - 1000 mPa.s
Measurement condition for the method	Brookfield, spindle 2 / 20 rpm	
pH-Value	specific method	4.0 - 5.0
Residual monomer (vinyl acetate)	GC	< 0.1 %
Grit 100 Mesh	specific method	max. 100 ppm

**Typical general characteristics**

Typical general characteristics	Inspection Method	Value
Density	specific method	1.09 g/cm <sup>3</sup>
Predominant particle size	specific method	approx. 400 nm
Glass transition temperature DSC	specific method	approx. 18 °C
Wet tack	specific method	moderate
Mechanical stability	specific method	excellent
Thickening response	specific method	moderate
Freeze thaw stability	specific method	poor
Water resistance	specific method	excellent
Film clarity	specific method	clear
Dry tack	specific method	none
Flexibility	specific method	excellent

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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