

# VINNAPAS® EP 7000

## Product description

VINNAPAS® EP 7000 is a poly(vinyl alcohol) stabilized vinyl acetate-ethylene (VAE) copolymer dispersion with a glass transition temperature ( $T_g$ ) of approximately - 3 °C. It was developed as a high performance, ultra-high solids dispersion offering superior adhesion, wet tack and setting speed over conventional VAE dispersions.

## Properties

VINNAPAS® EP 7000 dispersion is manufactured to an ultra-high solids content of 71 percent while maintaining a viscosity range of 1200-2700 mPa.s. This combination of high solids and moderate viscosity allows formulators to prepare a very unique set of high solids products. This dispersion provides excellent wet tack, speed of set, machining characteristics, film clarity and adhesion. The dry film of VINNAPAS® EP 7000 is tackier, clearer and more water resistant than standard grade VAE dispersions.

VINNAPAS® EP 7000 dispersion does not thicken excessively on the addition of plasticizers, fillers or dispersible powders. Despite its high solids content, it can be applied on high-speed packaging machines using roll, extrusion or spray application equipment.

VINNAPAS® EP 7000 demonstrates a low environmental impact design.

- It does not use any surfactants or defoamers that contain alkylphenol ethoxylates (APEOs).
- It is manufactured without the use of any formaldehyde donors.
- The total free residual vinyl acetate monomer content is less than 1000 ppm.

## Application

VINNAPAS® EP 7000 copolymer dispersion can be used in numerous applications. For high-performance vinyl laminations, the product provides excellent adhesion, heat resistance and aesthetics with less warpage and reduced grain raise in wood-based substrates than standard solids dispersions. In clear film overprint laminations, VINNAPAS® EP 7000 dispersion yields excellent film clarity and water

resistance. For construction applications, VINNAPAS® EP 7000 provides the high filler acceptance needed to produce high-solids adhesives. VINNAPAS® EP 7000 dispersion can also be used in bottle labeling, bookbinding, and high speed packaging applications where its rheology and very fast setting speeds and extremely high wet tack offer unique performance characteristics.

## Processing

VINNAPAS® EP 7000 copolymer dispersion can be compounded in a manner similar to other VAE dispersions. It is compatible with many types of plasticizers, thickeners and resins. With the addition of plasticizer, VINNAPAS® EP 7000 dispersion demonstrates a moderate thickening response. This moderate thickening response allows the compounder to add a plasticizer and dilute the formulation with very little water to a satisfactory running viscosity without losing the benefits of high solids. The addition of plasticizer significantly increases the water resistance of the emulsion, and further improves adhesion to low-energy surfaces. The moderate viscosity of VINNAPAS® EP 7000 emulsion enables it to be further compounded to increase the solids and the tack values.

VINNAPAS® EP 7000 dispersion is compatible with many other poly(vinyl acetate) homopolymer, VAE and acrylic copolymer dispersions, epoxy resins and water-based urethane dispersions which adds to its versatility in formulating high performance adhesives and coatings.

## Storage

When VINNAPAS® EP 7000 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® EP 7000 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® EP 7000 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® EP 7000 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® EP 7000 is used in applications other than those mentioned, the choice, processing and use of VINNAPAS® EP 7000 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, Oven 130 °C, 30 min.	WACKER method	69,5 – 71,5 %
Viscosity, Brookfield RVF @20 RPM, 25°C	WACKER method	1200 - 2700 mPa.s
pH-Value	WACKER method	4,5 – 5,5
VAM by Head Space GC	WACKER method	999 ppm max
Grit 100 Mesh	WACKER method	50 ppm max.
<b>Typical general characteristics</b>	<b>Inspection Method</b>	<b>Value</b>
Density	WACKER method	1,05 g/cm <sup>3</sup>
Wet tack	WACKER method	Excellent
Mechanical Stability	WACKER method	Excellent
Thickening Response	WACKER method	Moderate
Freeze/Thaw Stability	WACKER method	Poor
Glass transition temperature DSC	WACKER method	approx. - 3 °C
Water Resistance	WACKER method	Very Good
Film Clarity	WACKER method	Clear
Dry Tack	WACKER method	Slight Tack
Flexibility	WACKER 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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