

VINNAPAS® EP 400 E

Very-Low-Formaldehyde VAE Binder for Paper & Packaging Adhesives

VINNAPAS® EP 400 E is a vinyl acetate-ethylene copolymer (VAE) ideally suited for the formulation of very-low-formaldehyde paper & packaging adhesives with excellent performance attributes.

Making a Good Product Portfolio Even Better

The development of VINNAPAS® EP 400 E is our answer to the reclassification of the carcinogenic and mutagenic potential of formaldehyde as of January 1, 2016. As a result of this updated regulation, mixtures containing 0.1% formaldehyde or more are required to be labeled as carcinogenic.

WACKER's traditional dispersion portfolio of paper & packaging binders already boasts a low formaldehyde level and does not exceed the above mentioned 0.1% threshold either. Consequently, reclassification does not entail any product relabeling.

However, in line with WACKER's commitment to Responsible Care®, the introduction of VINNAPAS® EP 400 E additionally provides a solution that enables our customers to even formulate adhesives with a very low formaldehyde content.

Formaldehyde Level of VINNAPAS® Dispersions for Paper & Packaging Adhesives

VINNAPAS® dispersion	Formaldehyde level
VINNAPAS® EP 400	< 300 ppm
Very-low-formaldehyde VINNAPAS® dispersion	Formaldehyde level
VINNAPAS® EP 400 E	< 20 ppm

Keeping Pace with the Requirements of Paper & Packaging Adhesives

The success of VINNAPAS® EP 400 as a well-established dispersion for paper & packaging adhesives dates back to the 1990s. VINNAPAS® EP 400 E has therefore been designed to fully match the technical specifications of VINNAPAS® EP 400 with regard to solids content, viscosity, glass transition temperature and pH.

Besides these key properties, our new very-low-formaldehyde binder VINNAPAS® EP 400 E also features other performance criteria that are at the level of VINNAPAS® EP 400 or even outperform it in the case of setting speed.

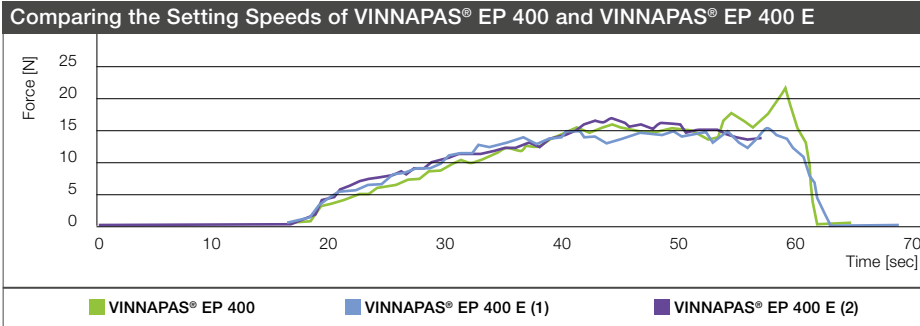
What's more, tougher demands on high-speed packaging equipment make machinability performance tests an essential factor during new-product development.

Properties of VINNAPAS® EP 400 E and VINNAPAS® EP 400

Solids [wt. %]	55 ± 1
Tg [°C] mid point	+5
MFFT [°C]	0
Stabilizing system	PVOH
Viscosity [mPa s]	2,400 ± 400
pH	4 – 5



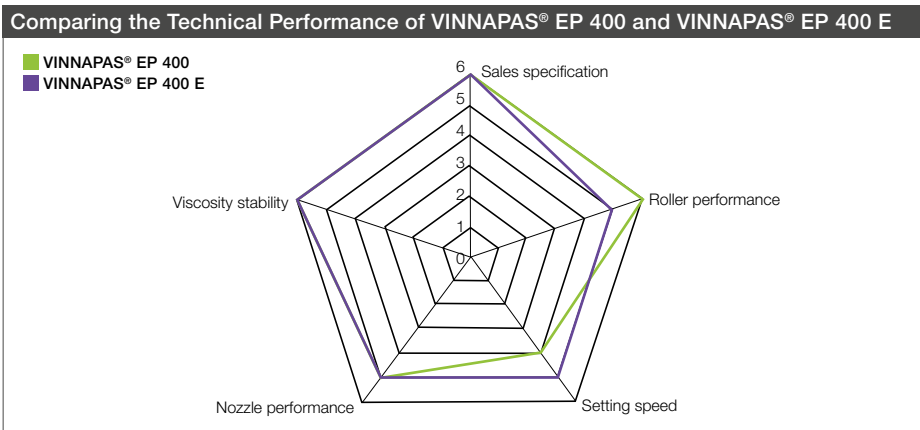
Setting speed test equipment in a WACKER laboratory.



Meeting All Relevant Performance Criteria

The results of testing key properties of paper & packaging adhesives show that VINNAPAS® EP 400 E fulfills the most relevant performance criteria for binders used in a variety of paper & packaging adhesives.

For various methods, such as roller and nozzle application, the performance of VINNAPAS® EP 400 E is similar to that of VINNAPAS® EP 400. The setting speed of VINNAPAS® EP 400 E has been found to be even higher. Together with its very low formaldehyde content and good machinability, VINNAPAS® EP 400 E is the perfect choice for very low formaldehyde adhesive formulations whenever state-of-the-art packaging machines are used.



- At a Glance: Properties of VINNAPAS® EP 400 E**
- Very low formaldehyde content (< 20 ppm)
 - Excellent machinability
 - Improved setting speed (compared to VINNAPAS® EP 400)

VINNAPAS® Plus – The Plus for Your Market

VINNAPAS® Plus dispersions are designed to meet the latest trends and are select, cutting-edge solutions for more advanced, high-end applications. Find out more at www.wacker.com/value-classes



Wacker Chemie AG, 81737 München, Germany
 Tel. +49 89 6279-1741, info@wacker.com, www.wacker.com/move-adhesives
www.wacker.com/socialmedia



The data presented in this medium 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 medium 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 information provided by us does 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 product for a particular purpose.