



Paper-to-board  
folder



Paper-to-film  
folded boxes



Paper-to-film  
bags



Paper-to-film  
envelopes



Film-to-wood



Film-to-wood  
(HPM lamination)



Wood-to-wood  
D2 to D4



Flooring  
installation



Wood manufactured  
building  
(manufactured  
housing)



Textile  
lamination



Tapes & labels



Car interiors

ADHESIVES | POLYMER BINDERS | GREATER CHINA

# PRODUCT OVERVIEW VINNAPAS® DISPERSIONS

# VINNAPAS® VAE – THE HIGH-PERFORMANCE SOLUTION

Success in the adhesives market often depends on choosing the right binder. VINNAPAS® vinyl acetate-ethylene (VAE) technology offers outstanding benefits in terms of performance, safety and versatility.

VINNAPAS® VAE dispersions are water-based co- and terpolymers mainly based on vinyl acetate and ethylene as comonomers.

Ethylene contributes permanent flexibility to the VAE polymer. No external plasticizer is thus necessary in VAEs.

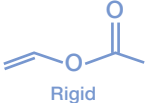
## Diverse Applications

VINNAPAS® VAE dispersions can be formulated into adhesives for various applications:

- Paper packaging (e.g. food packaging, envelope manufacturing, film lamination onto paper)
- Wood (e.g. film lamination onto wood, 3D membrane pressing, EPI systems)
- Flooring installation (e.g. textile flooring, flexible coverings)
- Car interiors (e.g. door paneling)
- Tapes & labels

**Two Monomers Creating Best-in-Class Performance**


Vinyl acetate



Rigid

+

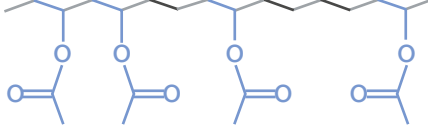
Ethylene



Flexible

→

Vinyl acetate-ethylene (VAE)



**Polymer Properties Provided by Ethylene:**

- Softness (T<sub>g</sub> approx. -125 °C)
- Non-polar, hydrophobic
- Permanent flexibility
- High saponification resistance
- Form ideal copolymers with vinyl acetate

**Vinyl Acetate:**

- Hardness (T<sub>g</sub> approx. 32 °C)
- Polar, hydrophilic
- Rigid

**VAE Copolymer and Terpolymer Dispersion Properties:**

VINNAPAS® VAE dispersions can be formulated into adhesives that provide outstanding benefits:

- Excellent adhesion to a wide variety of substrates
- High heat resistance
- Very fast setting
- Excellent machinability and re-emulsification properties
- Very good cost / performance ratio
- T<sub>g</sub> range from approx. -35 °C to approx. 30 °C, depending on ethylene content

# PRODUCT OVERVIEW

VINNAPAS® Product		Technical Data <sup>1</sup>							Product Benefit			Performance Attributes														VINNAPAS® Product											
Product Source	Base Polymer <sup>2</sup>	Solids Content (DIN EN ISO 3251) (± 1%)	Viscosity BF 20 at 25 °C at 20 rpm [mPa s] (ISO 2555)	pH (ISO 976)	Glass Transition Temperature Onset Point [°C] (approx.)	Minimum Film-Forming Temperature (MFFT) (DIN ISO 2115) [°C] (approx.)	Film Surface	Stabilizing System <sup>4</sup>	Performance Attributes														VINNAPAS® Product														
									Paper Packaging				Wood to Wood				Film to Wood				EPI			Flooring Installation		Tapes & Labels		Car Interiors									
									Adhesion (for e.g. film to paper)	Cohesion / Heat Resistance	Setting Behavior	Roller / Wheel Application	Nozzle Application	Cleanability	Water Resistance	D3 (EN 204) ≥ 2 N/mm <sup>2</sup>	D4 (EN 204) ≥ 4 N/mm <sup>2</sup>	Watt 91 (EN 14257) [N/mm <sup>2</sup> ] (approx.)	Low Wood Discoloration	Setting Behavior	Adhesion	Water Resistance	Heat Resistance	Setting Behavior	D3 in EPI Formulations (15% MDI)	D4 in EPI Formulations (15% MDI)	Workability	Overall Adhesion	Heat Resistance	Setting Behavior	Tack	Shear Resistance	Adhesion	Suitability	VINNAPAS® Product		
<b>VINNAPAS® Products VAE Technology (Copolymers and Terpolymers)</b>																			<b>VINNAPAS® Products VAE Technology (Copolymers and Terpolymers)</b>																		
VINNAPAS® EP706K	China or Korea	VAc-E	55.5	4,400 – 5,400	4 – 6	0	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-wood lamination. A high-viscosity version of VINNAPAS® EP706. Especially suitable for nozzle (HHS) applications.	●●	●●	●●	●●●	●●	●●	●●					●●	●●	●	●●	●●●	●								VINNAPAS® EP706K			
VINNAPAS® EP707K	China or Korea	VAc-E	55.5	1,300 – 2,000	4 – 6	0	Slightly tacky	PVOH	Low viscosity with rapid setting speed and flexibility. Excellent elongation and water resistance.	●●	●●	●●	●●	●	●●	●●●					●●	●●	●●	●●	●									VINNAPAS® EP707K			
VINNAPAS® EP708	China	VAc-E	55.5	6,000 – 7,500	4 – 6	0	Slightly tacky	PVOH	High-viscosity version of VINNAPAS® EP706K with efficient thickening response to plasticizer / solvent.	●●	●●	●●	●●●	●	●●	●●					●●	●●	●	●●	●●●	●									VINNAPAS® EP708		
VINNAPAS® EP710	China	VAc-E	55.5	4,400 – 5,400	4 – 6	0	Slightly tacky	PVOH	Cleaned version of VINNAPAS® EP706K.	●●	●●	●●	●●●	●●	●●	●●					●●	●	●●	●●	●										VINNAPAS® EP710		
VINNAPAS® EP756***	China	VAc-E	55	600 – 2,000	4 – 6	0	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-board lamination. Especially suited for nozzle applications.	●●	●●	●●	●●	●●●	●●	●●					●●	●	●●	●●	●										VINNAPAS® EP756		
VINNAPAS® EP758***	China	VAc-E	60.5	3,500 – 5,000	3.5 – 5.5	17	Slightly tacky	PVOH	Features high solids content & high shear thinning. Suitable for high-speed processing.	●●	●●●	●●	●●●	●	●●	●●					●●	●●	●	●●	●●●	●									VINNAPAS® EP758***		
VINNAPAS® EP3588	China	VAc-E	62.5 – 64	200 – 800	6 – 7.5	6	Slightly tacky	PVOH/ST	Low-viscosity profile that allows for high filler loading. Good adhesion to a wide variety of film substrates and fast setting speed.	●●	●	●●	●●	●	●●	●●●					●●	●●	●	●●	●●	●									VINNAPAS® EP3588		
VINNAPAS® 320KR	ST*	VAc-E	55	1,800 – 2,700	4 – 6	14	Tack-free	PVOH	Excellent adhesion to coated paper surfaces and some plastic films. Unique compatibility with both fully and partially hydrolyzed polyvinyl alcohol.	●●	●●	●●	●●●	●	●●	●					●●	●	●●	●●	●										VINNAPAS® 320KR		
VINNAPAS® EP645	Korea	VAc-E	55	5,000 – 10,000	4 – 6	5	Tack-free	PVOH	Good compatibility with PUD and acrylic. Modified VAE for difficult-to-bond substrates, with good wet tack, setting speed and machinability.	●●	●●	●●	●●	●	●●	●●					●●	●	●●●	●●	●											VINNAPAS® EP645	
VINNAPAS® EP701K	Korea	VAc-E	55	2,000 – 4,000	4 – 6	-10**	Tacky	PVOH	Excellent adhesion to difficult-to-bond surfaces. Suitable for laminating films (polyester, polyethylene terephthalate, polyvinylidene chloride and polystyrene) to coated or uncoated papers.	●●●	●	●●	●●	●	●	●●					●●●	●●	●	●●	●											VINNAPAS® EP701K	
VINNAPAS® EP705A	Korea	VAc-E	55	1,900 – 2,800	4 – 6	0	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-wood lamination.	●●	●●	●●	●●●	●	●●	●●					●●	●●	●	●●	●●●	●										VINNAPAS® EP705A	
VINNAPAS® EP705K	Korea	VAc-E	55	2,900 – 3,900	4 – 6	0	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-wood lamination. Especially suitable for nozzle (HHS) applications.	●●	●●	●●	●●●	●●	●●	●●					●●	●●	●	●●	●●●	●									VINNAPAS® EP705K		
VINNAPAS® EP706	Korea	VAc-E	55	3,500 – 4,500	4 – 6	0	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-wood lamination.	●●	●●	●●	●●●	●●	●●	●●					●●	●	●●	●●	●										VINNAPAS® EP706		
VINNAPAS® EP709	Korea	VAc-E	55	2,700 – 3,700	4 – 6	7	Slightly tacky	PVOH	Excellent cohesion strength and water resistance. Excellent compatibility with inorganic fillers. Good bonding to hard surfaces.	●●	●●	●●	●●●	●	●●	●●●					●●	●	●●	●●	●											VINNAPAS® EP709	
VINNAPAS® EP724	Korea	VAc-E	55	1,500 – 2,500	4 – 6	19	Tack-free	PVOH	Excellent tensile & cohesion strength and heat resistance. Blending with PVAc homopolymers yields better initial bonding strength, setting speed and water resistance.	●●	●●●	●●	●●●	●	●●	●					●●	●	●●	●●	●											VINNAPAS® EP724	
VINNAPAS® EP760	Korea	VAc-E	60	2,000 – 3,000	4 – 6	0	Slightly tacky	PVOH	High-solids VAE with an excellent balance of cohesion and adhesion. Stronger bonds and faster setting compared to commodity products.	●●	●●	●●	●●●	●	●●	●●					●●	●	●●	●●	●●	●										VINNAPAS® EP760	
VINNAPAS® EP6420	Korea	VAc-E	55	3,500 – 5,500	4 – 6	2**	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-wood lamination. Especially suitable for nozzle (HHS) applications.	●●	●●	●●	●●●	●●●	●●●	●					●●	●	●●	●●	●											VINNAPAS® EP6420	
VINNAPAS® EAF 68	Germany	VAc-E-A	58 – 62	4,500 – 9,500*	4 – 5	-35**	Tacky	ST	Pressure-sensitive emulsion designed for high-shear resistance. Excellent adhesion to difficult-to-bond substrates, such as OPP, PET and UV coatings, very good cohesion.	●●●	●	●	●	●	●	●					●●	●	●	●●	●●●	●●	●●●	●●	●●●	●●	●●●	●●	●●●	●●●		VINNAPAS® EAF 68	
VINNAPAS® 920	USA	VAc-E	55	800 – 2,000	4.2 – 5.2	-20	Tacky	PVOH	A carboxylated VAE. Excellent flow, wet-out and adhesion to various difficult-to-bond surfaces.	●●●	●	●●	●●	●	●	●●					●●●	●●	●	●	●●●	●●	●●	●●	●●●	●●	●●	●●				VINNAPAS® 920	
VINNAPAS® 6300	USA	VAc-E	63	600 – 1,500	4.3 – 5.3	0	Slightly tacky	PVOH	High solids content and carboxylic acid functionality create unique physical properties, such as excellent metal and film adhesion, wide-ranging compounding flexibility, and alkaline, aqueous clean-up. High solids content provides good setting speed.	●●●	●	●●	●●	●	●●	●					●●	●	●	●●												VINNAPAS® 6300	
VINNAPAS® 7000	USA	VAc-E	70.5	1,200 – 2,700	4.5 – 5.5	-3	Slightly tacky	PVOH	Highest-solids VAE with fastest setting speed. High filler loading and high adhesion.	●●	●●	●●●	●●	●	●●	●●●					●●●	●●	●●●	●●●	●●	●●									VINNAPAS® 7000		
<b>VINNAPAS® Products PVAc Technology</b>																			<b>VINNAPAS® Products PVAc Technology</b>																		
VINNAPAS® DPN 15	Germany	VAc	52	12,000 – 18,000*	2.5 – 3.5	28**	Tack-free	PVOH	D3 1C wood adhesive								Yes	No	> 7	●	●●●			●●											VINNAPAS® DPN 15		
VINNAPAS® DPN 16	Germany	VAc	52 ± 2	10,000 – 14,000*	2.5 – 3.5	28**	Tack-free	PVOH	D3 1C wood adhesive, reduced discoloration								Yes	No	> 7	●●	●●●			●●												VINNAPAS® DPN 16	
VINNAPAS® DPN 17	Germany	VAc	48	9,000 – 13,000*	2.5 – 3.5	28**	Tack-free	PVOH	D3 1C wood adhesive, longer open time								Yes	No	> 7	●	●●●			●●												VINNAPAS® DPN 17	
VINNAPAS® DPX 271	Germany	VAc	46 ± 2	6,000 – 14,000*	5 – 7	30**	Tack-free	PVOH	D3 1C wood adhesive, low formaldehyde, discoloration-free	●	●●●	●●	●	●	●●	●●	Yes	No	5	●●●	●●●	●	●●	●●●	●●											VINNAPAS® DPX 271	
<b>VINNOL® Product VC Technology (Copolymer)</b>																			<b>VINNOL® Product VC Technology (Copolymer)</b>																		
VINNOL® CEN8752	Germany	VC-E	50 ± 1	50 – 350*	5 – 7.5	10**	Tack free	ST	D4 2C wood adhesive								Yes	Yes						●●●	●●●										VINNOL® CEN8752		

<sup>1</sup> These figures are intended as a guide only and should not be used in preparing specifications.  
<sup>2</sup> VAc = Vinyl acetate  
A = Acrylic ester  
E = Ethylene  
VC = Vinyl chloride  
<sup>3</sup> PVOH = Polyvinyl alcohol  
ST = Surfactant  
<sup>4</sup> All products produced without the use of APEO surfactants  
Legend for performance attributes  
●●● Excellent ●● High ● Medium  
\* BF 20 at 23 °C at 20 rpm  
\*\* Midpoint  
\*\*\* Technical specifications provisional

# YOUR QUALITY CHOICE – MADE EASY

Our VINNAPAS® dispersions are specially designed to address the continuously changing needs of the modern adhesives industry, offering up-to-date solutions for the latest end-user requirements and market trends.

VINNAPAS® dispersions set the industry benchmark in product quality, performance and reliability. With our product portfolio you benefit from:

- Consistently high quality
- 80 years' experience in vinyl acetate based dispersion technology
- Properties such as adhesion, heat resistance, bonding to a wide range of different substrates, fast setting speed, high wet tack, reliable machinability, and broad formulation possibilities

## Technical Support



WACKER is one of the most research-intensive chemical corporations worldwide. Our VINNAPAS® grades for adhesives applications are produced in five manufacturing plants across Europe, the Americas, China and the Asia-Pacific region. To support adhesives manufacturers, we also operate dedicated state-of-the-art adhesives laboratories and technical centers around the globe, where we carry out extensive tests to develop formulations for new products or optimize those of existing products.



Paper-to-board folder



Paper-to-film folded boxes



Paper-to-film bags



Paper-to-film envelopes



Film-to-wood



Film-to-wood (HPM lamination)



Wood-to-wood D2 to D4



Flooring installation



Wood-manufactured building (manufactured housing)



Textile lamination



Tapes & labels



Car interiors

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7249e/03.21 replaces 7249e/09.20

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