



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 | EUROPE

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.

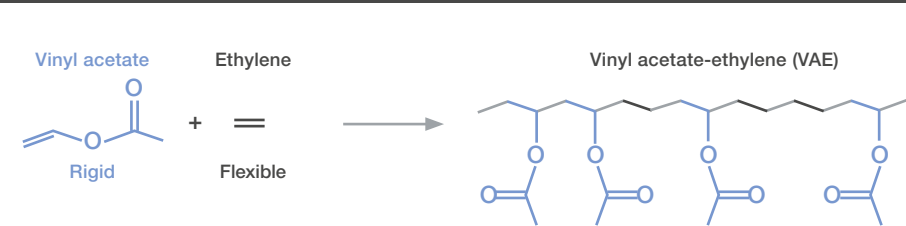
Ethylene contributes permanent flexibility to the VAE polymer. No external plasticizer is thus necessary in VAEs.

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



Polymer Properties Provided by Ethylene:

- Softness (T_g approx. $-125\text{ }^\circ\text{C}$)
- Non-polar, hydrophobic
- Permanent flexibility
- High saponification resistance
- Form ideal copolymers with vinyl acetate

Vinyl Acetate:

- Hardness (T_g approx. $32\text{ }^\circ\text{C}$)
- 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_g range from approx. $-35\text{ }^\circ\text{C}$ to approx. $30\text{ }^\circ\text{C}$, depending on ethylene content

PRODUCT OVERVIEW

VINNAPAS® Product	Technical Data ¹									Product Benefit	Performance Attributes																VINNAPAS® Product	
	Base Polymer ²	Solids Content (DIN EN ISO 3251) (± 1%)	Viscosity BF 20 at 23 °C at 20 rpm [mPa s] (ISO 2555)	pH (ISO 976)	Glass Transition Temperature Midpoint [°C] (approx.)	Minimum Film-Forming Temperature (MFFT) (DIN ISO 2115) [°C] (approx.)	Film Surface	Stabilizing System ^{3,4}	Performance Attributes																			
									Paper Packaging				Wood to Wood				Film to Wood				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 ²	D4 (EN 204) ≥ 4 N/mm ²	Watt 91 (EN 14257) [N/mm ²] (approx.)	Low Wood Discoloration	Setting Behavior	Adhesion	Water Resistance	Heat Resistance	Setting Behavior	Workability	Overall Adhesion	Heat Resistance	Setting Behavior	Tack	Shear Resistance	Adhesion	Suitability					
VINNAPAS® Products VAE Technology (Copolymers and Terpolymers)																												
VINNAPAS® EAF 67	VAc-E-A	60 ± 2	7,000 ± 2,500	4 – 5	-35	0	Tacky	ST	Low T _g grade for flooring adhesives or tapes & labels.	●●●	●	●	●	●	●	●	●●	●	●	●●	●●●	●●●	●●●	●●●	●●●	●●●	VINNAPAS® EAF 67	
VINNAPAS® EAF 68	VAc-E-A	58 – 61	7,000 ± 2,500	4 – 5	-35	0	Tacky	ST	Low T _g grade for flooring adhesives with excellent dimensional stability.	●●●	●	●	●	●	●	●	●●	●	●	●●	●●●	●●●	●●●	●●●	●●●	●●●	VINNAPAS® EAF 68	
VINNAPAS® EF 8860	VAc-E	57	1,500 ± 1,000	4 – 5	-10	0	Slightly tacky	ST	Medium-soft binder for flooring adhesives with good plasticizer resistance and high cohesion. Water resistant glue line.	●●	●	●	●	●	●	●	●●	●	●	●●	●●●	●●	●●●	●●	●●●	●●	VINNAPAS® EF 8860	
VINNAPAS® EP 1	VAc-E	50	9,000 ± 3,000	4 – 5	1	0	Slightly tacky	PVOH / ST	Good compatibility with PUD. Water resistant glue line.	●●	●●	●●	●●●	●	●●●	●●●	●●	●●	●●	●●	●	●●	●●	●			VINNAPAS® EP 1	
VINNAPAS® EP 11	VAc-E	50	5,000 ± 1,000	4 – 5	3	0	Slightly tacky	PVOH	Universal binder for paper packaging and high cohesion.	●●	●●	●●	●●●	●	●●●	●●	●●	●●	●●	●●	●	●●	●●●	●			VINNAPAS® EP 11	
VINNAPAS® EP 14	VAc-E	55	5,500 ± 1,500	4 – 5	3	0	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-wood lamination.	●●	●●	●●	●●●	●	●●●	●●	●●	●●	●●	●●	●	●●	●●●	●			VINNAPAS® EP 14	
VINNAPAS® EP 17	VAc-E	60	3,800 ± 1,000	4 – 5	3	0	Slightly tacky	PVOH / ST	Good compatibility with PUD, also recommended for automotive applications.	●●	●●	●●	●●	●	●	●	●●	●●	●●	●●	●	●●	●●●	●			VINNAPAS® EP 17	
VINNAPAS® EP 24	VAc-E	57	12,000 ± 3,000	4 – 5	3	0	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-wood lamination. High viscosity.	●●	●●	●●	●●●	●●	●●●	●●	●●	●●	●●	●●	●	●●	●●●	●			VINNAPAS® EP 24	
VINNAPAS® EP 400	VAc-E	55	2,400 ± 400	4 – 5	5	0	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-wood lamination.	●●	●●	●●	●●●	●●	●●●	●	●●	●	●●	●●	●	●●	●●●	●			VINNAPAS® EP 400	
VINNAPAS® EP 401	VAc-E	55	2,500 ± 800	4 – 5	-7	0	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-wood lamination. Higher adhesion level compared to VINNAPAS® EP 400.	●●●	●●	●●●	●●●	●●●	●●●	●	●●	●	●●	●●	●	●●	●●●	●			VINNAPAS® EP 401	
VINNAPAS® EP 441	VAc-E	55 ± 2	4,000 ± 1,000	4 – 5	5	0	Slightly tacky	PVOH	Universal binder for paper packaging applications / film-to-wood lamination. Especially suitable for nozzle (HHS) applications.	●●	●●	●●	●●●	●●●	●●●	●	●●	●	●●	●●	●	●●	●●●	●			VINNAPAS® EP 441	
VINNAPAS® EP 8010	VAc-E	58 – 61	6,000 ± 2,000	4 – 5	-10	0	Slightly tacky	PVOH / ST	Excellent adhesion to various difficult-to-bond surfaces, also recommended for automotive applications.	●●●	●●	●●●	●●	●	●●●	●●	●●●	●●	●●	●●	●	●●●	●●	●			VINNAPAS® EP 8010	
VINNAPAS® EPN 865	VAc-E	62 ± 2	2,500 ± 1,500	4 – 5	20	6	Slightly tacky	PVOH	Higher T _g , functional monomers for crosslinking under heat.	●	●●●	●●	●●●	●	●●●	●	●	●	●●●	●●	●	●	●●●	●			VINNAPAS® EPN 865	
VINNAPAS® Products PVAc Technology																												
VINNAPAS® DP 55	VAc	55 ± 2	3,000 ± 1,500	4 – 5	33	14	Tack-free	PVOH	Low-viscosity PVOH-stabilized homopolymer.	●	●●●	●●	●●	●	●●●	●	No	No	5	●●●	●●●	●	●	●●●	●●			VINNAPAS® DP 55
VINNAPAS® DP 500	VAc	50 ± 2	35,000 ± 5,000	4.5 – 5.5	33	14	Tack-free	PVOH	Very low sedimentation, excellent plasticizer response.	●	●●●	●●	●●	●	●●●	●	No	No	5	●●●	●●●	●	●	●●●	●●			VINNAPAS® DP 500
VINNAPAS® DP 600	VAc	60 ± 2	35,000 ± 6,000	4 – 5.5	33	14	Tack-free	PVOH	Very low sedimentation, excellent plasticizer response.	●	●●●	●●	●●	●	●●●	●	No	No	5	●●●	●●●	●	●	●●●	●●			VINNAPAS® DP 600
VINNAPAS® DPN 15	VAc	52	15,000 ± 3,000	2.5 – 3.5	28	5	Tack-free	PVOH	D3 1C wood adhesive.							Yes	No	> 7	●	●●●							VINNAPAS® DPN 15	
VINNAPAS® DPN 16	VAc	52 ± 2	12,000 ± 2,000	2.5 – 3.5	28	5	Tack-free	PVOH	D3 1C wood adhesive, reduced discoloration.							Yes	No	> 7	●●	●●●							VINNAPAS® DPN 16	
VINNAPAS® DPN 17	VAc	48	11,000 ± 2,000	2.5 – 3.5	28	4	Tack-free	PVOH	D3 1C wood adhesive, longer open time.							Yes	No	> 7	●	●●●							VINNAPAS® DPN 17	
VINNAPAS® DPN 47	VAc	50 ± 2	18,000 ± 4,000	4.5 – 5.5	19	3	Tack-free	PVOH	D4 2C wood adhesive.							Yes	Yes	> 7	●	●●●							VINNAPAS® DPN 47	
VINNAPAS® DPX 271	VAc	46 ± 2	10,000 ± 4,000	5 – 7	30	5	Tack-free	PVOH	D3 1C wood adhesive, low formaldehyde, discoloration-free.	●	●●●	●●	●	●	●●	●●	Yes	No	5	●●●	●●●	●	●●	●●●	●●			VINNAPAS® DPX 271
VINNAPAS® H 65	VAc	65	30,000 ± 10,000	4 – 5	40	14	Tack-free	PVOH	PVOH-stabilized homopolymer with outstanding setting speed.	●	●●●	●●●	●●	●	●●●	●	No	No	5	●●●	●●●	●	●	●●●	●●			VINNAPAS® H 65

1 These figures are intended as a guide only and should not be used in preparing specifications.
 2 VAc = Vinyl acetate
 A = Acrylic ester
 E = Ethylene
 3 PVOH = Polyvinyl alcohol
 ST = Surfactant
 4 All products produced without the use of APEO surfactants
 Legend for performance attributes
 ●●● Excellent ●● High ● Medium

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

WACKER

Wacker Chemie AG
Hanns-Seidel-Platz 4
81737 Munich, Germany
Phone: +49 89 6279-1741
www.wacker.com/contact

www.wacker.com

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7252e/03.21 replaces 7252e/06.20

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