

CAULKS & SEALANTS | EMEA |
VINNAPAS® EP 7860, VINNAPAS® EAF 7868, VINNAPAS® EF 7865

MAKE THE MOVE TO VAE

Binders for Flame-Retardant Caulking Applications

Vinyl acetate-ethylene (VAE) technology offers an outstanding balance of performance, sustainability, and economic advantages – and thus is often the technology of choice for many different applications. As core-strength binders in caulk and sealant formulations, VINNAPAS® VAE dispersions offer numerous benefits such as high filler acceptance and excellent adhesion to many substrates. Their low odor and low formaldehyde content make them ideal for indoor applications.

Benefits of VINNAPAS® VAE for Caulk and Sealant Formulations

- High filler acceptance
- Good adhesion to a variety of substrates (e.g. concrete, metal, wood, plastics)
- Low odor, low formaldehyde
- Produced without APEO surfactants
- Can be formulated without the use of plasticizers
- Paintable
- Easy application and cleaning
- Derived from low-volatile C1/C2 value streams

Optimum Solution for Formulating Sealants and Assembly Adhesives

VINNAPAS® EP 7860, VINNAPAS® EF 7865, VINNAPAS® EAF 7868 offer high filler acceptance and are ideal for formulating sealants and assembly adhesives. Additionally, VINNAPAS® EAF 7868, which has a low glass transition temperature, is an excellent choice when the use of external plasticizers is not desired.

Properties of VINNAPAS® EP 7860, VINNAPAS® EAF 7868, VINNAPAS® EF 7865

	VINNAPAS® EP 7860	VINNAPAS® EAF 7868	VINNAPAS® EF 7865
Polymer base	VAc-E	VAc-E-A	VAc-E
SC [%]	59–61	58–62	56–58
T _g [°C]	10	-35	-10
pH value	4–6	4–5	4–5
Viscosity [mPa.s]	4,500 ± 1,500	7,000 ± 3,000	1,750 ± 1,250
Description	<ul style="list-style-type: none"> • Versatile, high T_g grade • Special extension recovery properties at high filler levels 	<ul style="list-style-type: none"> • Very low T_g • Recommended for use where plasticizers are not desired 	<ul style="list-style-type: none"> • Medium T_g to minimize plasticizer use • Recommended for flame-retardant caulks

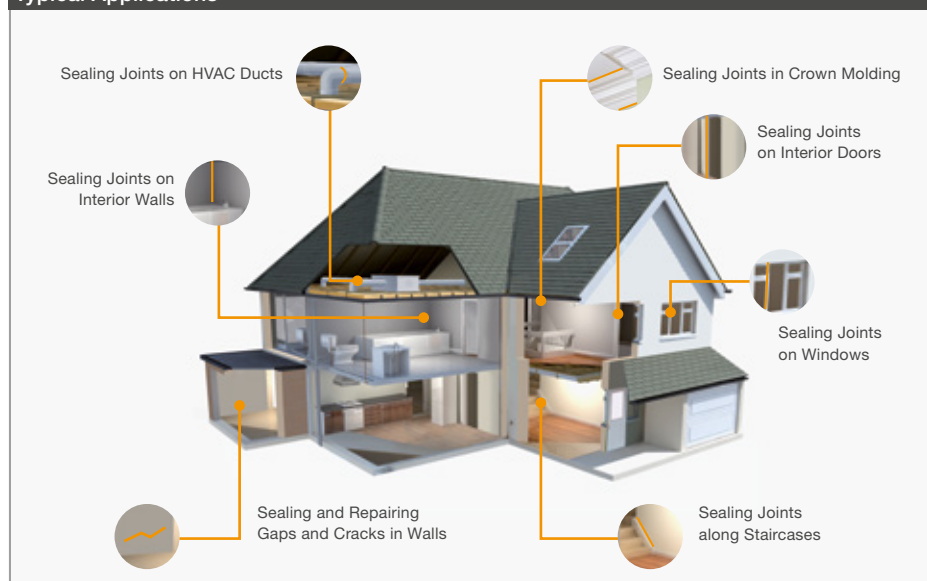
Perfect Results for Diverse Applications

VINNAPAS® VAE dispersions are used as binders in high-performance products for sealing gaps, cracks, and holes in walls, ceilings, floors, and duct work. They are especially suitable for indoor applications and, thanks to their easy workability and cleanability, are ideal for both professional and DIY applications.

Wide Range of Applications with VINNAPAS® VAE

- Gap and crack filling
- Caulks
- Construction adhesives
- Flame-retardant caulks
- Repair products
- Duct work sealant

Typical Applications

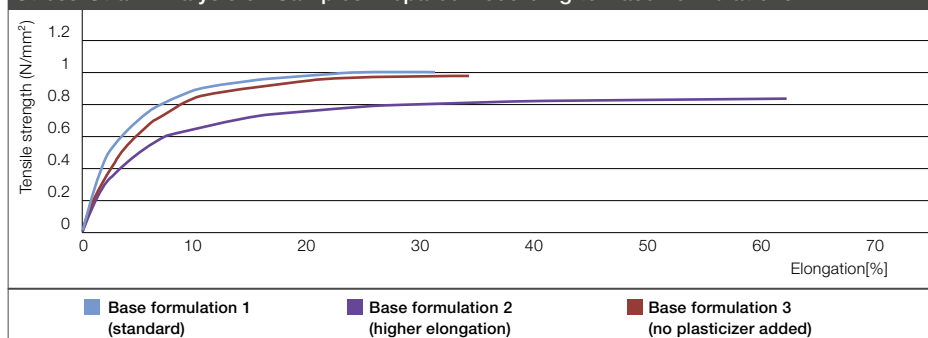


Guide Formulation and Performance Results

		Base Formulation 1 (Standard) VINNAPAS® EP 7860	Base Formulation 2 (Higher Elongation) VINNAPAS® EP 7860	Base Formulation 3 (No Plasticizer Added) VINNAPAS® EAF 7868
Ingredient	Product	Quantity (Parts)	Quantity (Parts)	Quantity (Parts)
Dispersion		39	42.6	44
Filler	Omya BL	55	51	54
Plasticizer	Benzoflex 2088	4	4.4	0
Dispersing agent	Dispex A 40	1	1	0,8
Thickener	Borchigel L75N	~1*	~1*	~1*
Test		Performance	Performance	Performance
Tensile strength [N/mm ²] DIN 53504		1	0.8	1
Elongation at break [%] DIN 53504		31	62	34
Recovery after 1h (60% elongation) [%]		29	24	17
Recovery after 24h (60% elongation) [%]		61	59	37

*Thickener may need to be varied.

Stress-Strain Analysis on Samples Prepared According to Base Formulations



Stress-strain analysis performed at the WACKER laboratory in Burghausen, Germany using films prepared according to base formulations and cut into dumbbell shapes.

Typical stress-strain curves show how formulations with VINNAPAS® VAEs can be enhanced to reach the desired properties.

Flame Test with an Exposure Time of 15 Seconds

Results show that even with a very low concentration of a flame-retarding agent such as ATH (ratio 9:1*), sealant formulations with VINNAPAS® show no flame propagation. In comparison, a formulation based on styrene acrylics burns down completely even at much higher flame-retarding agent concentrations (ratio 4.6:1*).

*The ratio (filler/flame-retarding agent) indicates the amount of filler over the amount of flame-retarding agent used in the formulation.

Formulation of Flame-Retardant Sealants

When formulating flame-retardant caulks and sealants on the basis of VINNAPAS® VAE dispersions, the amount of flame-retarding agents can be reduced significantly compared to alternative binder technologies.

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