

VINNAPAS[®] EN 428



Polymer Dispersions

VINNAPAS[®] EN 428 is a self-crosslinking, plasticizer-free, aqueous polymer dispersion produced from the monomers vinyl acetate and ethylene.

Properties

- VINNAPAS[®] EN 428 offers a unique balance of soft handle, high wet strength and broad formulation flexibility.
- Due to the particular soft character of the film it forms VINNAPAS[®] EN 428 is ideally suited as a binder for personal hygiene nonwovens and as a coating and finishing agent for woven and knitted goods.

Technical data

Specification

Property	Condition	Value	Method
Solids content	-	51 - 53 %	DIN EN ISO 3251
Viscosity, dynamic	23 °C	50 - 350 mPa·s	DIN EN ISO 2555
pH	-	4 - 6	DIN/ISO 976

General Characteristics

Property	Condition	Value	Method
Density	23 °C	approx. 1.04 g/cm ³	DIN EN ISO 2811-3
Minimum film forming temperature	-	approx. 0 °C	DIN ISO 2115
Frost resistance	-	protect against freezing	specific method
Protective colloid / emulsifier system	-	nonionic emulsifiers	-
Appearance of the dispersion film	-	clear	Visual
Surface of the dispersion film	-	slightly sticky	-
Elongation at break ⁽¹⁾	-	approx. 1500 %	DIN EN ISO 527, part 1 - 3
Glass transition temperature	-	approx. -15 °C	specific method
Predominant particle size	-	approx. 0.2 - 0.3 µm	specific method
Tensile strength ⁽²⁾	-	approx. 4.5 N/mm ²	DIN EN ISO 527, part 1 - 3

¹(Crosslinked)

²(Crosslinked)

These figures are only intended as a guide and should not be used in preparing specifications.

All the information provided is in accordance with the present state of our knowledge. Nonetheless, we disclaim any warranty or liability whatsoever and reserve the right, at any time, to effect technical alterations. The information provided, as well as the product's fitness for an intended application, should be checked by the buyer in preliminary trials. Contractual terms and conditions always take precedence. This disclaimer of warranty and liability also applies particularly in foreign countries with respect to third parties' rights.

Applications

- Dimensional Stability
- Flame retardant coatings
- Tabletop Nonwovens
- Textile Printing
- Wash & Abrasion Resistance

Application details

Processing

Polymer Dispersions

VINNAPAS® EN 428 is miscible with most anionic and/or nonionic aqueous polymer dispersions especially with the self-crosslinking VINNAPAS® AN 214. This imparts a harder handle and increases the film strength. However, the compatibility of the mixture should be tested by carrying out storage tests.

VINNAPAS® EN 428 can be used in permanently water-repellent coatings based on Wacker® Si Finish CT 19E to impart handle to textile materials used for rain and sportswear, tents and camping goods etc. It is usually also possible to combine VINNAPAS® EN 428 (CGN) with curable or fibre crosslinking synthetic resin precondensates and/or other reactive resins. The pH value of VINNAPAS® EN 428 is usually sufficient for optimum crosslinking, but in exceptional cases the addition of 0.1–1.0 % diammonium phosphate can accelerate the process. VINNAPAS® EN 428 crosslinks at temperatures above 130 °C, but 150 °C is necessary for optimum durability.

Fillers and Pigments

If, for coating applications, VINNAPAS® EN 428 is to be pigmented, only pH-value neutral fillers and pigments should be used since they would otherwise interfere with the crosslinking process which takes place in the acid pH range.

Defoaming Agents

Suitable defoaming agents are, for example, 1)SILFOAM® SE1662 or 2)FOAMASTER® WO 2310 and 3)AGITAN® 352. Their efficacy and compatibility in the formulation chosen should always be checked.

1) SILFOAM® is a trademark of Wacker Chemie AG

2) FOAMASTER® is a trademark of BASF SE

3) AGITAN® is a trademark of Münzing Chemie GmbH

Thickening Agents

Thickeners should be pH-value neutral products e.g. cellulose derivatives, polyvinyl alcohol or polyurethane based. VINNAPAS® EN 428 crosslinks under acidic conditions so that if an alkali thickenable acrylic acid copolymer is to be employed, the pH-value should be adjusted with ammonia. Their compatibility and efficacy need to be checked.

Additional information

If the product is used in applications other than those mentioned, the choice, processing and use of the product is the sole responsibility of the purchaser. All legal and other regulations must be complied with.

For questions concerning food contact status according the chapter 21 CFR (US FDA) and German BfR, please feel free to contact us.

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Packaging and storage

Storage

When the dispersion is stored in tanks, proper storage conditions must be maintained. The product has a shelf life of 6 months starting from the date of receipt if stored in the original, unopened containers at temperatures between 5 and 30 °C. Any longer periods for the maximum storage period that may be described in the Certificate of Analysis which accompanies each shipment of the product, take preference over this suggestion in which case the time period stated in the Certificate of Analysis shall be solely authoritative. Iron or galvanized iron containers and equipment are not recommended. Corrosion could result in discoloration of the dispersion or blends made from it in further processing. We therefore recommend the use of containers and equipment made of ceramic, rubberized or enameled materials, appropriately finished stainless steel, or plastic (rigid PVC, polyethylene or polyester resin). As polymer dispersions may tend to superficial film formation, skins or lumps may be formed during storage or transportation. A filtration process is thus recommended prior to utilization of the product.

Preservation for Transport, Storage and further Processing

The product 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.

Measures should also be taken to ensure cleanliness of the tanks and pipes. In unstirred tanks, a layer of preservative-containing water should be sprayed onto the surface of the dispersion to prevent the formation of unwanted skin and possible attack by microorganisms. The thickness of this water layer should be < 5 mm for low viscosity dispersions and up to 10–20 mm for high viscosity products. Proper procedures – periodic tank cleaning and sanitization – must be set up in order to prevent microbial attack. Contact your biocide representative/supplier for further plant hygiene recommendations. Measures should be taken to ensure that only clean air enters the tank when the dispersion is removed. 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.

Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. These are available on request from WACKER sales offices or may be downloaded from the WACKER Web site www.wacker.com/vinnapas.

QR Code VINNAPAS® EN 428



For technical, quality or product safety questions, please contact:

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