VINNOL® 728

Product description

VINNOL® 728 is an aqueous dispersion of a vinyl-acetate-ethylene-vinyl chloride terpolymer designed for high performance, low VOC architectural coatings applications.

Properties

The combination of vinyl chloride polymerized with vinyl acetate and ethylene provides VINNOL® 728 with unique performance properties including:

- Tremendous elongation (>1000%) with good recovery
- Low minimum film forming temperature (MFFT) of 0°C
- Low MVTR due to the hydrophobic nature of vinyl chloride
- Excellent pigment binding power

Ethylene is the ideal internal plasticizer for vinyl acetate monomer as it provides main chain plasticization. This main chain plasticiziation provides vinyl acetate/ethylene containing polymers with very low MFFTs, which relates to the film forming ability of the polymer. The lower the MFFT, the easier it is for the latex to form a film without the use of coalescing aids.

Due to it's composition and relatively small particle size (average size of 0.17 microns), VINNOL® 728 has excellent pigment binding capability. This makes it ideal for use in heavily pigmented systems where it is critical for the binder to be able to maintain physical integrity and performance in the system.

Application

Because of the unique performance properties of VINNOL® 728, when properly formulated, it is ideal for a variety of coatings applications such as:

- Fresh masonry (high pH cementitious substrates) including primers and topcoats
- Roof coatings
- Texture coatings
- Other specialty type coatings such as vapor barriers and fire retardants
- High PVC interior coatings

When formulated into masonry coatings, VINNOL® 728 offers superior efflorescence and alkaline hydrolysis resistance versus vinyl acetate/butyl acrylate copolymers, and offers equal to better efflorescence resistance versus pure acrylics. With the increase in usage of cementitious substrates in the U.S., VINNOL® 728 is well positioned to provide excellent performance in a variety of coatings types.

Emulsion-based reflective roof coatings have been used in southern and southwestern portions of the U.S. for years to reduce air conditioning costs by lowering heat absorption. Binders used for this type of application typically require good flexibility, adhesion to metal, alkali resistance, and good weathering characteristics. VINNOL® 728 can be used as the sole binder in these types of coatings where performance requirements aren't as demanding (i.e., pitched roofs where there is no chance of ponding water in warmer climates). For flat roofs and areas of extreme cold that require high flexibility, VINNOL® 728 can be blended with small amounts of a pure acrylic to provide the necessary performance.

The superior fusion characteristics of vinyl acetate-ethylene containing polymers such as VINNOL® 728 allow the products to perform effectively in low to 0 VOC systems. Paints using VINNOL® 728 can be formulated without the addition of coalescing solvents or glycols, providing good film formation at application temperatures above 50 °F. For optimal results, especially in high PVC systems or for maximum efflorescence resistance, small amounts of coalescing solvent are recommended (between 2–5% on latex solids).

In high PVC interior flat coatings, excellent pigment binding is necessary to achieve good scrub resistance. VINNOL® 728 provides a significant increase in wet abrasion resistance versus vinyl acetate-butyl acrylate copolymers which typically have a larger particle size. In fact, it may be possible for the formulator to reduce the cost of the paint without sacrificing the quality of the paint by increasing the PVC when using VINNOL® 728.

A texture coating is a highly filled aggregate type of coating such as a block filler, synthetic stucco, or elastomeric texture. These types of coatings are supplied at extremely high weight solids (>80%) creating unique binder requirements. VINNOL® 728 provides the good

mechanical and shear stability and good pigment binding efficiency necessary for these types of coatings.

VINNOL® 728 is considered to be a "fabricated product" as defined under Part 191 0.93q of Title 29, Code of Federal Regulations. As a result, monitoring for vinyl chloride monomer is not required. Work practices and conditions necessary for handling VINNOL® 728 polymer are no more or less stringent than those necessary for other paint and emulsion products. Since normal coating processing involves no "mass melting," neither VINNOL® 728 polymer nor coatings made from it require any special handling or labeling.

Processing

Specific formulating tips are available upon request and can be found in the *Formulation Guidelines* bulletin on the WACKER web-site.

Storage

When VINNOL® 728 dispersion is stored in tanks, proper storage conditions must be maintained. If stored in the original, unopened containers at cool (below 30 °C), but frost-free temperatures VINNOL® 728 dispersion has a shelf life of 6 months. Iron or galvanized-iron equipment and containers are not recommended because the dispersion is slightly acidic. Corrosion may result in discoloration of the dispersion or its blends when further processed. Therefore the use of containers and equipment made of ceramics, rubberized or enameled materials, appropriately finished stainless steel, or plastic (e.g. rigid PVC, polyethylene or polyester resin) is recommended.

Preservation for Transport, Storage and further Processing

VINNOL® 728 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.

To maintain proper storage conditions appropriate measures should also be taken to ensure cleanliness of the tanks and piping. In a storage tank in which VINNOL® 728 is not stirred, it is advisable to contact your biocide representative/supplier. Proper procedures must be set up in order to prevent microbial attack between necessary periodic tank cleaning and sanitization. These procedures will vary, since loading and unloading practices in each storage situation will differ slightly.

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.

Additional information

If VINNOL® 728 is used in applications other than those mentioned, the choice, processing and use of VINNOL® 728 is the sole responsibility of the purchaser. All legal and other regulations must be complied with.

For questions concerning food contact status according to chapter 21 CFR (US FDA) and German BfR, please contact:

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Safety notes

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

Product data		
Specification data	**Inspection Method**	**Value**
Solids content	WACKER method	51 - 55 %
Viscosity, Brookfield LVF #2 @ 60 rpm, 25°C	WACKER method	100 – 500 mPa.s
pH-Value	WACKER method	5,0-6,5
VAM by Head Space GC	WACKER method	<0,5%
Residual Vinyl Chloride Monomer	WACKER method	<4.2 ppm

Typical general characteristics	**Inspection Method**	**Value**
Density	WACKER method	1,08 g/cm^3
Minimum film forming temperature	WACKER method	0 °C
Mechanical stability	WACKER method	Excellent
Predominant particle size	WACKER method	approx. 150-190 nm
Glass transition temperature DSC	WACKER method	approx. 0 °C

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

The data presented in this leaflet 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 leaflet 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 recommendations do 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 products for a particular purpose.

The management system has been certified according to DIN EN ISO 9001 and DIN EN ISO 14001

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

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