

Acronal[®] V 210 na

Chemical Nature

Aqueous acrylate copolymer dispersion intended for the production of pressure-sensitive flooring adhesives.

Properties

Typical Properties

Solids Content	%	~ 69.0
Apparent viscosity at 23 °C (Brookfield RV, Spindle #3, at 50 rpm)	cps	~ 320 – 1200
pH		~ 5.0

Other properties of the dispersion

Density at 20 °C	lbs/gal	8.4
Average Particle Size	µm	ca. 0.6
Coagulum, 120 mesh	%	≤ 0.01
Emulsion type		anionic
Freeze-thaw stability		not resistant

Properties of the film

Glass transition temperature (DSC)	°C	-40
Mechanical Properties at 23°C *		
Tensile Strength	psi	ca. 25
Elongation at break	%	ca. 1750
Water Absorption (after 24 hrs immersion in water)	%	13
Appearance		clear, transparent
Surface		tacky

* This data is to be used for comparative purposes.

Characteristics

Acronal V 210 na exhibits the following traits:

- High tack and cohesion
- High solids/low viscosity
- Low odor, no added formaldehyde
- High degree of product consistency
- FDA CFR 21 Section 175.105 compliance
- Very good low-temperature performance
- Good shear stability (sprayable)

Compatible with

Polymer Emulsions

Acronal V 210 na is compatible with the following BASF water-based acrylic emulsion products:

- Acronal 81 D, Acronal A 220, Acronal 3432, and Acronal V 275.

Tackifier Resins

Acronal V 210 na possesses an excellent inherent balance of tack and cohesion. Enhancement of adhesion and tack may be achieved by the use of resins in the form of solutions or dispersions. The desired tackifier level will vary depending on the tackifier and the application involved. In all cases, preliminary trials must be carried out to test the compatibility.

Wetting Agents

Wetting of Acronal V 210 na formulations during processing can be enhanced by modifying with 0.5 - 1.5% of a standard anionic or nonionic surfactant, such as Lumiten[®] I-RA (dioctyl sodium

sulfosuccinate) or Iconol® NP-40 (ethoxylated nonyl phenol). Contact a BASF Technical Service Representative for additional information and recommendations.

Defoamers

Recommendations for defoaming agents will be influenced by the physical properties of the formulation ingredients, the application method and the configuration of the coating line involved. Generally, the addition of 0.05 - 0.5% of commercial defoamers, e.g., Lumiten® EL, based on total wet weight of adhesive is adequate.

Mechanical Stabilizers

The use of mechanical stabilizers to improve the stability of Acronal V 210 na formulations during processing is generally not required. When compounded with other materials such as tackifier dispersions, however, the addition of <0.5% of a high HLB ethoxylated octyl or nonyl phenol, such as the Iconol® OP and NP products, on wet weight of adhesive may be necessary. Small amounts of Collacral® VL also improve stability.

Thickeners

Acronal V 210 na is compatible with the following BASF thickeners:

- Collacral® VL: Polyvinyl pyrrolidone thickener and mechanical stabilizer; slight pseudoplastic rheology; FDA regulation 21 CFR Sections 175.105 and 176.180 compliant.
- Latekoll® D: Polyacid acrylate; pseudoplastic rheology.
- Sterocoll® FD: Polyacid acrylate; pseudoplastic rheology; FDA regulation 21 CFR Sections 175.105, 176.170 and 176.180 compliant.

The proper adjustment of the viscosity and rheology of the adhesive system is critical to realize optimum coating performance. The choice of modifier will depend on the adhesive system and the coating method.

Plasticizers

Acronal V 210 na is compatible with the following plasticizers:

- Plastilit® 3060: Polypropylene glycol alkylphenyl ether
- Plastilit® 3431: (2-hydroxyethyl) phenyl ether
- Phthalate types

Solvents

Aliphatic and aromatic hydrocarbons and esters in amounts required to incorporate tackifier resins may be used.

Fillers and Colorants

Kaolin®, chalk, colloidal silica and powdered quartz are suitable fillers. For coloring, the Dispers® or Luconyl® preparations (inorganic and organic pigments) are compatible with Acronal V 210 na.

* The above values should not be taken as specification.

Application

Fields of Application

Acronal V 210 na is intended for the production of pressure-sensitive adhesives for the following applications:

- Flooring adhesives
- Construction adhesives
- Various high tack applications

Advantages

Adhesives formulated with Acronal V 210 na possess an excellent balance of adhesion, tack and cohesion. Acronal V 210 na also has excellent tackifier response, further increasing its adhesion to a variety of surfaces while maintaining greater cohesion than competitive products.

Acronal V 210 na based adhesives develop very good adhesion on low energy surfaces such as rigid and filmic HDPE and LDPE, rigid and plasticized PVC films and polyester films.

Processing

Acronal V 210 na may be blended with other polymers and compounded with a range of additives to modify adhesive properties and machinability.

Due to the anionic nature of Acronal V 210 na, increasing the pH of formulations is generally advisable to insure trouble-free formulating and processing. The pH of Acronal V 210 na should be adjusted to 7.0 - 7.5 before adding other polymers, tackifier resins and auxiliary ingredients. The pH of the final formulation should be 7.5 - 8.5.

The use of dilute (10 - 15%) solutions of ammonium hydroxide, sodium hydroxide or potassium hydroxide is recommended when adjusting pH. The use of organic amines is not recommended due to their slow release from the adhesive.

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State and Local health and safety regulations, thorough ventilation of the workplace, good skin care and wearing of protective goggles.

Safety Data Sheet

All safety information is provided in the Safety Data Sheet for Acronal S 735 P.

Storage

Please refer to the "Handling and Storage of Polymer Dispersions" brochure.

Important

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BASF Corporation
Dispersions and Resins
11501 Steele Creek Road
Charlotte, North Carolina 28273
Phone: (800) 251 – 0612
Email: CustCare-Charlotte@basf.com
Email: edtech-info@basf.com
www.basf.us/formulation-additives