# Adhesives

Technical Data Sheet

# Acronal® 296 D na

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| ***Chemical Nature*** | **Aqueous styrene-acrylate copolymer dispersion for the manufacture of building adhesives and coatings** |

## Properties

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| ***Product specification*** | Solids content | % | 49.0 – 51.0 |
| | pH | | 7.5 – 8.5 |
| | Viscosity at 23 °C (Brookfield RV and Helipath Stand, Spindle TA, at 20 rpm) | mPa s | 6000 – 8500 |
| ***Other properties of the dispersion*** | Density | lbs/gal | ca. 8.68 |
| | | $g/cm^3$ | ca. 1.04 |
| | Average particle size | µm | ca. 0.1 |
| | Film-forming temperature | °F | ca. 68 min. |
| | | °C | ca. 20 min. |
| | Dispersion type | | anionic |
| | Plasticizer content | | free from plasticizer |
| | Filler/pigment acceptance | | very good |
| | Sensitivity to frost | °F | below 32 |
| | | °C | below 0 |
| ***Properties of the film*** | Density | $g/cm^3$ | ca. 1.08 |
| | Glass transition temperature (DSC) | °C | ca. 22 |
| | Water absorption (After 24 hours immersion in water) | % | ca. 10 |
| | Mechanical strength* | | |
| | Tensile strength | psi | ca. 1000 |
| | | $N/mm^2$ | ca. 7 |
| | Elongation at break | % | ca. 500 |
| | Appearance | | clear, transparent |
| | Surface | | tack free |
| | Flexibility | | good |
| | Resistance to aging | | good |

*This figure should be taken for comparison purposes only. They furnish only a rough comparison of film strengths.

***Compatible with***

*Polymer dispersions*

Acronal® 296 D na is miscible with many other nonionic and anionic aqueous polymer dispersion grades. Note that dried films of such mixtures often appear cloudy.

*Thickeners*

Polyacrylic acid-based materials (e.g., Latekoll® D), polyvinyl alcohols, cellulose ethers and others such as Collacral® VL and Collacral® PU, etc.

*Plasticizers*

Phthalate ester types (e.g., Palatinol®), higher molecular weight glycol ethers (e.g., Plastilit® 3060)

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| *Coalescents* | Texanol®, mineral spirits, diethylene glycol monobutyl ether, diethylene glycol monobutyl ether acetate. |
| *Fillers* | Amorphous and crystalline calcium carbonate, dolomite, silica flour, fine sand, clay, etc. The good compatibility of Acronal® 296 D na with pigments and fillers can be further improved by adding Pigment Disperser A or N alone or in combination with potassium polyphosphate. Compounds can be tinted with water-dispersible inorganic and organic pigment preparations (e.g., Luconyl®). |
| *Others* | Water-dispersable silanes. |

## Applications

***Fields of application***

Acronal® 296 D na is used as a base material for producing adhesives for a large variety of applications including ceramic tiles, plywood-lumber subfloor, cove-base, and flooring. The product is also used in the production of high-gloss to matt coatings for application on plaster, masonry, fibrous cement, concrete, wood, and other indoor and outdoor substrates. Acronal® 296 D na also shows great utility as an impregnating agent, primer, or binder for textured finishes.

Acronal® 296 D na is also employed in nonwovens and textile coating applications where it generally is applied by dipping, lick-roll, coating or spraying techniques.

***Processing***

High-speed forced circulation mixers are used in the production of building adhesives, filler compositions, textured finishes, and surfacing compounds, where a high viscosity and high solids content are desirable. In these applications, the polymer dispersion and auxiliaries are first added to the mixer to prepare a pigment paste of the fillers and pigments.

Coatings are generally produced in high-speed mixers (e.g., dissolvers) by predispersing the filler/pigment mixture, incorporating the auxiliaries, and adding the dispersion as the last component.

It is usually necessary to disperse the fillers and pigments with sufficient wetting and dispersing agents (Pigment Disperser A or N, water-soluble phosphates, etc.) in order to obtain products with adequate storage stability.

The film-forming temperature of Acronal® 296 D na can be easily reduced further by adding coalescents; for instance, mineral spirits, diethylene glycol monobutyl ether, diethylene glycol monobutyl ether acetate, butoxyethyl acetate, Texanol®, or mixtures of these materials. Diethylene glycol monobutyl ether and Texanol®, for example, simultaneously prolong the open assembly time.

Lower alcohols and glycols improve the resistance to frost, but generally do not reduce the film-forming temperature.

Although Acronal® 296 D na already exhibits high viscosity characteristics, a thickening agent is generally added for adjusting the viscosity of the end product. Polyacrylic acid types (e.g. Latekoll® D), Collacral® VL, Collacral® PU, cellulose ethers or other mineral thickening agents can be used for this purpose. These products not only increase the yield point, but also impart more or less pronounced pseudoplasticity to the end products.

In common with all dispersions of small particle size, Acronal® 296 D na has a tendency to foam, and it is generally necessary to add a conventional defoamer in proportions of 0.3-1%

Products containing Acronal® 296 D na should be blended with a preservative in order to protect them from the attack of microorganisms. The suitability of the preservative must be determined by trials and regular inspections.

## 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.

***Material Safety Data Sheet***

All safety information is provided in the Material Safety Data Sheet for Acronal® 296 D na.

## Storage

Acronal® 296 D na has a shelf life of six months from delivery date, provided it is stored in accordance with the “Handling and Storage of polymer dispersions” brochure. Technical information regarding the storage of BASF polymer dispersion products is available upon request.

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## Important

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