
Technical Information

TI/ED

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Coatings Raw Materials

Acronal[®] CN 18 ap

Aqueous polymer dispersion for the production of architectural finishes, indoor paints, textured finishes and smoothing fillers

Functional Polymers

**BASF**
The Chemical Company

Acronal CN 18 ap

Nature

Aqueous dispersion of a styrene acrylic copolymer

Properties

Acronal CN 18 ap is a formaldehyde free medium viscosity fine dispersion. The dispersion's compatibility with extenders and pigment binding properties are excellent. The film is clear, glossy, flexible and exhibits exceptional resistance to water and saponification.

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|---|--|-------------------|--------------|
| Product specification | Solids content (DIN ISO 1625-D) | % | 48±1 |
| | pH value (DIN ISO 976) | | 7.0 – 9.0 |
| Other properties of the Dispersion | Minimum film-forming temperature (ISO 2115) | °C | approx. 20 |
| | Mean particle size | µm | approx. 0.15 |
| | Density (ISO 2811) | g/cm ³ | approx. 1.04 |
| | Sensitivity to frost | °C | < 0 |
| | Type of dispersion | | anionic |
| | Apparent viscosity at 23 °C Brookfield LV, Sp. 2, 6 rpm (ISO 2555) | mPa·s | 200 –1500 |
| Properties of the film | Density (ISO 1183, DIN 53479) | g/cm ³ | approx. 1.08 |
| | Water absorption after 24 h immersion (ISO 62, DIN 53495) | % | approx. 10 |

Application

Fields of application

General-purpose binder, preferably for

- architectural finishes
- indoor paints
- textured finishes
- concrete protection coatings
- smoothing fillers

Processing

Emulsion paints are produced in the usual manner in a high-speed impeller mill. It is recommended that the pigments and extenders are dispersed in the presence of wetting agents and dispersants (eg, Pigment Dispersers A And N and water-soluble polyphosphates) in an alkaline medium before the dispersion is added. It is only when products with very high viscosity (eg, textured finishes and smoothing fillers) are to be produced in low-speed Mixers that Acronal CN 18 ap should first be mixed with the dispersing And wetting agents. More detailed information is given in our technical Information "Acronal 290 D and surfactants".

Acronal CN 18 ap exhibits very good compatibility with pigments and fillers, And has a high pigment binding capacity. Restrictions apply only to pigments That are difficult to wet (eg, carbon black) and to calcium sulfate And zinc oxide, which are liable to cause a marked rise in viscosity. The Degree of pigmentation can be varied widely. It depends essentially on the Intended application (exterior or interior), the properties required (eg, the Degree of gloss, flexibility, and wet abrasion resistance), the type of Substrate, and the binder demand (oil absorption) of the pigments and Fillers to be used.

In order to control the viscosity and processing properties of emulsion Paints and textured finishes, various types of thickeners may be added, eg, cellulose ethers, polyacrylate and diurethane thickeners (Latekoll® D, Collacral® P, Collacral PU 75 and PU 85) or bentonites and polysaccharides. The choice depends on whether the end product is to have good flow behaviour or more thixotropic properties.

In order to permit good film formation at temperatures below 20 °C, it is necessary to add suitable coalescing solvents (eg, white spirit, glycol ethers and their acetates, Lusolvan® FBH and PP) in amounts of about 2% in terms of the whole formulation. Lower alcohols or glycols improve the frost resistance of the finished products, but do not cause any reduction the film-forming temperature. The coalescing solvents should not be added to the dispersion direct, but should be incorporated into the pigment paste. Further details are given in our technical Information "Acronal CN 18 ap and coalescents".

If an exceptionally flexible film is required for special applications, plasticizers such as Plastilit® 3060, chlorinated paraffin or phthalates may be added. Another possibility is to mix Acronal CN 18 ap with softer polymer dispersions. For this purpose, acrylic/styrene dispersions, e. g. Acronal 567 D or Putty 109, which yield clear films, are commonly used. Pure acrylic and polyvinyl ester dispersions can also be mixed with Acronal CN 18 ap, but these mixtures generally produce dull films that have no technical advantages. The compatibility of Acronal CN 18 ap with other polymer dispersions can be improved by addition of Collacral VL, which acts as a protective colloid with an additional stabilizing effect.

For the subsequent tinting of products based on Acronal CN 18 ap, coloured pigments, usually in the form of pigment preparations such as BASF's Luconyl® grades, are used. Because combinations of these pigments with some thickeners may cause serum formation or pigment flocculation, compatibility and storage should always be carried out beforehand. Such problems can be eliminated by adding a nonionic surfactant. Small amounts of Lumiten N-OC 30 improve the compatibility with cement and lime and also the storage stability of highly extended indoor paints when very hard water is used, as well as making equipment easier to clean.

Like all small particle dispersions, Acronal CN 18 ap has a tendency to foam. It is therefore necessary to add a commercial defoamer in amounts of 0.3 –1%. Trials should be carried out to test the suitability and in particular the long-term efficiency of the defoamer.

Although Acronal CN 18 ap is protected from attack by microorganisms, it is necessary to add preservatives to the finished products in order to ensure good storage stability of these products. Trials should always be carried out to test the compatibility and efficiency of the preservatives to be used.

Manufacturers must carry out their own trials in developing products based on Acronal CN 18 ap, because the manufacture and use of such products are affected by a large number of factors (eg, compatibility of the components, mixing processes, adhesion to different substrates), which we cannot cover exhaustively in our own trials. The viscosity must also be checked to ensure it remains stable when the product is stored at temperatures around 50 °C.

Safety

General

Attention must be paid to the normal precautions for handling chemicals and to the measures prescribed in the local health regulations. The workplace must be well ventilated, skin care measures must be adopted, and

eye protection must be worn.

Safety Data Sheet

The Safety Data Sheet for Acronal CN 18 ap provides information on all the known safety data.

Airborne concentration

Acronal CN 18 ap contains technically unavoidable traces of volatile organic compounds. Further details are given in the Safety Data Sheet.

Industrial hygiene

According to the experience we have gained over many years and other information at our disposal, Acronal CN 18 ap does not pose any risk to health when it is used for the purpose for which it is intended and the principles of sound industrial practice are observed.

Prolonged contact may cause irritation of the skin and mucous membranes.

Labelling

According to the data at our disposal, Acronal CN 18 ap is not a hazardous product in the sense of the German regulations* or the "EC Guidelines for Classification, Packaging and Labelling of Dangerous Substances".

It contains no constituents that must be taken into account for labelling.

* *Gefahrstoffverordnung*

Storage

Acronal CN 18 ap must not be allowed to come into contact with metals that are likely to corrode. Drums must be kept tightly closed, and the air space in storage tanks should always be kept saturated with water vapour. Exposure to strong heat and frost must be avoided.

Acronal CN 18 ap is protected from attack by microorganisms during transportation. Additional preservative should be added to guard against microbial attack when the dispersion is being stored. Tank hygiene measures must be adopted (see our Technical Information "The handling and storage of polymer dispersions").

Acronal CN03 has a shelf life of approx. 12 months if stored at 10 – 30 °C,

Note

The information submitted in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.

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