BASF
The Chemical Company

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Acronal® TA 754

Aqueous polymer dispersion for use in a wide range of emulsion paints and textured finishes

Chemical nature

Aqueous dispersion of copolymer of acrylic and methacrylic acid esters

Properties

Acronal® TA 754 is a finely divided polymer dispersion with a medium viscosity. Its compatibility with the usual pigments and extenders is good, and it has high binding power for pigments. It forms films that are tough, flexible and tack-free at temperatures in the region of 20 °C. Films formed by Acronal® TA 754 have high water resistance and high lightfastness, and they are very resistant to saponification and weathering. They have very little tendency to blush, even if they are exposed to water for long periods.

Product specification

Solids content (DIN EN ISO 3251, T. 2-D)	%	48 ± 1
pH (ISO 976)		7.5 – 8.5
Viscosity at 23°C (ISO 3219), shear rate 100 s^{-1}	mPa·s	200 –900

The aforementioned data shall constitue the agreed contractual quality of the product at the time of passing of risk. The data are controlled at regular intervals as part of our quality assurance program. Neither these data nor the properties of product specimens shall imply any legally binding guarantee of certain properties or of fitness for a specific purpose.
No liability of ours can be derived therefrom

Other properties of the dispersion

Density (ISO 2811-1)	g/cm^3	approx. 1.05
Average particle size	µm	approx. 0.1
Minimum film-forming temperature (ISO 2115)	°C	approx. 17
Low-temperature stability		Sensitive to frost
Ionic charge		Anionic

Film properties

Density (ISO 1183, DIN 53479)	g/cm^3	approx. 1.10
Glass transition temperature Tg (DSC)	°C	approx. 22
Water absorption after 24 h immersion (ISO 62, DIN 53495)	%	approx. 6
Tensile strength*	N/mm^2	approx. 12
Elongation at break*	%	approx. 200

**Derived from ISO 1184, DIN 53445*

The information presented here on the properties of the product and the films that it forms is only intended as a guide to processing. It does not constitute the agreed product quality or a guarantee of certain properties. These properties are not monitored regularly as part of our quality assurance procedures

Application

Areas of application

Acronal® TA 754 is mainly used as a binder for aggregate coatings, wood stains, wood paints, emulsion paints with a gloss or satin gloss finish, and plastic paints. It is also very effective for use in all-acrylic satin matt architectural coatings with a pigment volume concentration of ca. 40 %.

Processing

These coatings can be mixed in the usual manner in a high-speed impeller mill such as a Dissolver or in a heavy-duty mixer. Pigments and extenders need to be dispersed with sufficient amounts of wetting and dispersing agents, such as Pigment Disperser A in combination with polyphosphates, to ensure that the viscosity of the coating remains stable over long periods in storage.

Various thickeners can be added to adjust the viscosity and flow of coatings and to enhance their workability. All types of cellulose ether can be used, either alone or in combination with polyurethane thickeners. Combinations of cellulose ether and Collacral® DS 6256 can be used to formulate aggregate coatings that are easy to apply and have little tendency to bloom even after prolonged exposure to water.

Inorganic substances such as montmorillonite and finely divided silica can also be employed as thickeners. We would particularly recommend polyurethane-based thickeners such as Collacral® PU 75, Collacral® PU 85 or Collacral® LR 8990 in order to obtain good levelling. Hydroxyethyl cellulose has proved to be effective either alone or in combination with other thickeners, because it inhibits the formation of a supernatant liquid and it does not cause chromatic pigments such as those contained in BASF's Luconyl® pigment preparations to flocculate. Adding a small amount of nonionic surfactants such as our Lumiten® N grades can also help in this respect. Compatibility tests and storage stability trials should always be performed.

Like all finely divided polymer dispersions, Acronal® TA 754 has a tendency to foam. It is therefore necessary to add a commercial defoamer at the rate specified by the manufacturer (usually 0.3 - 1 %). Trials should be carried out in advance to test the suitability of the defoamer.

A small amount of coalescent solvent needs to be added in order to enable the polymer to form a coherent film at temperatures below 14 °C. Glycol ethers such as diethylene glycol monobutyl ether or Solvenon®DPnB, glycol ether acetates, aromatic white spirit and Lusolvan® FBH, either alone or in combination with each other, are particularly effective. It is usually sufficient to add a maximum of 2 % solvent, expressed as a proportion of the total formulation. Hydrophilic solvents that are miscible in all proportions with water, such as short-chain alcohols or glycols, cannot be used to lower the film-forming temperature, but they do improve the resistance of formulations to frost. High-boiling hydrophilic solvents such as propylene glycol and diethylene glycol monobutyl ether help to prolong the wet-edge time, but they also impair the water resistance of the coating and its initial resistance to blocking.

Solvents and thickeners should not be added direct to the polymer dispersion because they can cause localized coagulation. They should either be mixed with the pigment paste or diluted with water before they are added.

We would recommend adding preservatives to products formulated with Acronal® TA 754 to protect them from being attacked by microorganisms over long periods in storage. Trials should always be carried out to test the compatibility and efficacy of the preservatives. The rate at which preservatives are added depends on the manufacturer's recommendations and the climatic conditions to which the products are stored.

Customers have to carry out their own trials when developing and processing products based on Acronal® TA 754. The compatibility of Acronal® TA 754 with other ingredients of formulations, its effect on mixing processes and its adhesion on different substrates etc., are affected by a variety of factors which are too numerous for us to take into account in our own trials. This also includes testing formulations to ensure that their viscosity remains stable when they are stored at temperatures of ca. 50 °C. The weathering resistance of formulations must be tested in advance under practical conditions if Acronal® TA 754 is employed in unpigmented products, e. g. clear aggregate coatings, for use in very hot, sunny regions such as the southwestern United States.

Safety

General

The usual safety precautions when handling chemicals must be observed. In particular, the place of work must be well ventilated if large quantities are being processed, the skin should be protected, and safety glasses should be worn at all times.

Safety Data Sheet

A Safety Data Sheet is available for Acronal® TA 754 which conforms to the Safety Data Sheet Directive 2001/58/EC and which contains up-to-date information on all questions relevant to safety.

Labelling

According to all the data at our disposal, Acronal® TA 754 is not a dangerous substance or preparation as defined in the German *Gefahrstoffverordnung* and the current European Community guidelines on classification and labeling.

Storage

Acronal® TA 754 must not be allowed to come into contact during storage with metals or alloys that are susceptible to corrosion. It is important to ensure that containers are kept tightly sealed, and the headspace of bulk storage tanks must be kept saturated with water vapour. This product must not be exposed to high temperatures, and it must be protected from frost.

Acronal® TA 754 has a shelf life of six months at 10 - 30 °C, provided due attention is paid to the hygiene of tanks and storage facilities.

We would recommend treating this product with a biocide in order to prevent problems with microorganisms from occurring during storage and processing. Further details are given in our leaflet on "The handling and storage of polymer dispersions".

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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