Technische Information

Ciba

Productname CIBA®DISPEX®A40/DISPEX®N40

Dispersing Agent

A Product of Ciba Specialty Chemicals

General

Dispex â A40 and Dispex â N40 are derivatives of a family of highly effective, low viscosity dispersing agents for water-borne coating systems. The products are especially suited for the dispersion of inorganic pigments. Compared with other dispersing agents Dispex â GA40 and Dispex â N40 allow formulation of high-gloss / low pigment volume concentration coatings in addition to standard matt formulations.

Chemical Nature

Dispex â N40 is solution of a sodium salt of an acrylic copolymer in water.Dispex â A40 is a solution of an ammonium salt of an acryl polymer in water. Both belong to a family of products which are based on an acrylic copolymer. The copolymer is manufactured to a relatively narrow molecular weight distribution thus resulting in a consistent product quality with maximum effectiveness.

Physical Properties

(typical values)

	Dispex â A40	Dispex â N40
Appearance	straw coloured liquid	straw coloured liquid
pH	8.0	7.5
Solid Content	43%	45%
Active Content	40%	40%
Viscosity at 25°C (Brookfield 20 rpm)	400 mPa.s	400 mPa.s
Density at 20°C	1.16 g.cm3	1.30 g.cm3

Applications

Dispex â A40 and the Dispex â N40 are ideal dispersing agents for a wide range of water-borne coatings. Dispex â A40 and Dispex â N40 can be used as supplied. The neutralising alkali used in conjunction with the acrylic polymer can significantly impact the properties of the final coating. Dispex â A40 releases ammonia during the drying process and therefore has little impact on water and alkaline resistance of the dry film while the sodium-based Dispex â N40 often contributes slightly negatively to the coating propertiesDispex â N40 is effective over a pH range 5-12 and up to temperatures in excess of 100°C. Use of Dispex â A40 should be limited to pH 5-10.5 and temperatures lower than 70°C due to potential loss of volatile ammonia. Compared with inorganic dispersing agents, e.g. polyphosphate products, the organic polymer based Dispex â A40 and Dispex â N40 provide improved storage stability of both, the pigment dispersion and the formulated paint. There is little or no adverse reaction to high temperatures or pH changes as indicated in the graphs below, which are examples showing the accelerated effects.

Incorporation of Dispex â A40 or Dispex â N40

It is recommended to add the pigment to heavily stirred water containing the dispersing agent as opposed to addition of the dispersing agent to a pigment slurry. In general, the pH of the final preparation should be in the region of 8.5 to obtain optimum dispersing efficiency. The optimum amount of dispersing agent required to form a stable dispersion strongly despends on the pigment´s chemical nature, the particle surface and shape. The polymer base of the latex also plays a very important part in the stability equation. In general, significant overdosing may deteriorate the coatings properties (e.g. water resistance) and also generates an economic disadvantage. Likewise insufficient dispersing agent will lead to instability on storage. In common with other dispersing agents, because of the batch-to-batch variations of the demands of a specific pigment or latex type it is recommended that the formulator uses

1.5 – 2.0 times the determined optimum level of the dispersing agent. Ciba Specialty Chemicals holds a database with information on recommended dosage levels for a variety of commonly used pigments in selected latex preparations. A more detailed explanation of dispersing agent evaluation is contained in the “Rheology Performance Brochure” which is also available from Ciba Specialty Chemicals.

Recommended concentration

0.5 – 2.0% Dispex â A40 or Dispex â N40
(based on pigment weight)

Safety and Handling

Dispex â A40 and Dispex â N40 should be handled in accordance with good industrial practice. Detailed information is provided in the Safety Data Sheet. Although Dispex â A40 and Dispex â N40 are freeze stable it is recommended to store the products at temperatures above 5°C to enable easy handling of the product.

Trademark

Dispex â is a registered trademark.

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