

## Wetting and Dispersing Agents

### GENERAL INFORMATION

NUOSPERSE® FX 504 and NUOSPERSE® FX 505 are low foaming polymeric pigment dispersing agents that work effectively for many hydrophilic pigments and extenders, used in aqueous coatings. Both products contain the same active ingredients and differ only in concentration.

NUOSPERSE® FX 504 contains 30 % and NUOSPERSE® FX 505 contains 50 % active matter.

### PHYSICAL PROPERTIES

#### NUOSPERSE FX 504

Appearance : clear liquid  
 Active matter : 30%  
 pH  
 (ASTM D 1172): 7.0-8.5  
 Density, 20 °C  
 (DIN 53217/3) : 1130 kg/m<sup>3</sup>  
 Viscosity, 25 °C  
 (DIN 53015) : max. 40 mPa.s  
 Colour  
 (DIN-EN 1557) : max. 3 Gardner  
 Solubility : soluble in water  
 Flash point : > 100 °C  
 Composition: ammonium salt of a polymeric carboxylic acid

#### NUOSPERSE FX 505

Appearance : clear liquid  
 Active matter : 50 %  
 pH  
 (ASTM D 1172): 7.0 - 8.5  
 Density, 20 °C : approx. 1220 kg/m<sup>3</sup>  
 Viscosity, 25 °C  
 (DIN 53015) : max. 1000 mPa.s  
 Colour  
 (DIN-EN 1557) : max. 4 Gardner  
 Solubility : soluble in water  
 Flash point : > 100 °C  
 Composition : ammonium salt of a polymeric carboxylic acid

### APPLICATION AND PROPERTIES

NUOSPERSE® FX 504 and FX 505 are applicable to practically all types of aqueous coatings based on polymeric binders, e.g. PVAC-, PAC-, PSB-, PSAC dispersions, terpolymers and latices etc.

They also show excellent compatibility with those polymeric binders commonly used in aqueous formulations, e.g. paper coatings, adhesives, carpet backings and plastics etc.

NUOSPERSE® FX 504 and FX 505 are applied as dispersing agents in many hydrophilic pigments and extenders in aqueous mediums such as titanium dioxides, calcium carbonate, barium sulphate, iron oxides etc. The products are strongly adsorbed onto these pigments and extenders and reduce the viscosity of the milling paste. If strongly hydrophobic pigments are used such as most organic types, it is recommended to use NUOSPERSE® FX 504 or FX 505 in combination with a wetting agent, e.g. NUOSPERSE® FN 1566 or NUOSPERSE® FN 265.

NUOSPERSE® FX 504 and FX 505 counteract flocculation, floating, flooding and pigment settling. They do not cause foam formation, nor do they depolymerise upon storage. As a result coatings with improved performance and excellent stability are contained.

NUOSPERSE® FX 504 and FX 505 also avoid the viscosity increase which usually occurs during storage with coatings formulated with less chemically stable dispersing agents such as most polyphosphates and various copolymeric dispersing agents.

(continued)

FX 504, FX 505 (E).doc161204

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Feature	Consequence
<ul style="list-style-type: none"> <li>• Narrow distribution of molecular mass of the polymer</li> </ul>	<ul style="list-style-type: none"> <li>- optimal effectivity</li> <li>- enhanced pigment dispersion</li> <li>- less flocculation</li> <li>- best opacity</li> </ul>
<ul style="list-style-type: none"> <li>• No foaming</li> </ul>	<ul style="list-style-type: none"> <li>- reduces required amount of defoamer</li> <li>- no bubbles or craters</li> </ul>
<ul style="list-style-type: none"> <li>• Insensitive to hydrolysis</li> </ul>	<ul style="list-style-type: none"> <li>- provides longterm stability of the paint</li> </ul>

## HANDLING AND SAFETY

More detailed information on handling and safety for each product is included in the relevant material safety data sheet, available for each product.

## QUALITY ASSURANCE

Since 1992 the company is a holder of the ISO 9001 certificate, which guarantees that all operations are conducted according to the stipulated standards.

## DOSAGE

NUOSPERSE<sup>®</sup> FX 504 and FX 505 are to be added prior the dispersion stage. The quantity is very dependent on the composition of the paste and should be determined experimentally. It is advised to determine the "viscosity curve" by measuring the viscosity of pastes with various amounts of the product: use in the paint formulation  $\pm$  1.5 times the amount of NUOSPERSE<sup>®</sup> FX 504/FX 505, which gives the lowest viscosity at the viscosity curve determination.

In general, a concentration of between 0.1 - 1.0 % of NUOSPERSE<sup>®</sup> FX 504 - or an equivalent amount of NUOSPERSE<sup>®</sup> FX 505 - calculated on the total quantity of pigment and extender will be sufficient.

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