



# Flexisperse™ 1000N

Detergent polymer

## Overview

- Aqueous, fully neutralized sodium polyacrylate
- Multi-Functional ingredient enhances the performance and efficiency of cleaning formulations
- Sequesters hardness ions allowing for optimum surfactant performance
- Stable builder in high alkaline/bleach Industrial & Institutional cleaners
- Allows the end user to receive product at the highest % actives while conforming to DOT regulations
- Used in the manufacturing/processing of powdered laundry detergents as a slurry viscosity reducer, dispersing agent and powder structurant.

## Applications

- Co-Builder in Household and Institutional powder laundry detergents
- Performance additive for Auto Dish formulations
- Formulary additive for hard surface, bottle wash, ware washing and other I&I cleaning formulation applications
- Textile sour additive for dyeing and finishing of textiles
- General purpose dispersant for inorganic pigments and fillers including  $\text{CaCO}_3$  and  $\text{TiO}_2$

## Technical Information

Flexisperse 1000N is a fully neutralized sodium polyacrylate homopolymer sequesterant, dispersant, deflocculant and rheology modifier, optimized with an average molecular weight of 10,000 for use in warewashing, fabric wash and commercial detergent formulations.

Specifically designed for use in detergent formulations as a detergent co-builder, Flexisperse 1000N contributes to the slowing of the build-up of fats and proteins on surfaces, increases the solubility of precipitating salts, and by forming an ion complex with hard water ions, limits the formation of scale and hard water deposits.

With high caustic and hypochlorite stability, and the ability to bind destabilizing metals, and reduce filming on surfaces, Flexisperse 1000N is ideal for use as a sequestering agent in powdered warewash and CIP cleaning formulations.

## Formulary

Typically added to formulations at 2-4% actives, the anionic character of the polymer serves to prevent the redeposition of particulate soil onto the washed garment and retards the encrustation of  $\text{CaCO}_3$  from soda ash built formulations.

## Typical Properties

PROPERTY	VALUE
Appearance	Clear to slightly hazy liquid
Color	Water white to pale amber
Odor	Mild
Ionic character	Anionic
Water solubility	Soluble
Average molecular weight (Mw)	10,000-12,000
Viscosity @25°C (Brookfield), MPa·s/cps	600-1400
Total solids, %	40.0±2.0
pH (as is)	7.0±1.0
Density@25°C	1.3±0.1 g/ml
Boiling Point	100°C
Flash point	None (aqueous)
Storage	Freeze/thaw stable
Shelf life	12 months

## Packaging and Handling

Flexisperse 1000N is available in:  
Bulk (44,000 lbs)  
275 gallon totes (Net Wt. 2750 lbs)  
55 gallon plastic drums (Net Wt. 550 lbs)  
5 gallon pails (Net Wt. 40 lbs).

Refer to the Safety Data Sheet (SDS) for information on the safe use, handling, and disposal of this product.

DOT Classification: Non-Regulated

Whether you're looking for a replacement product or an ingredient for a specific attribute, give us a call. We can provide assistance based upon your particular formulation requirements and composition; please feel free to contact us.

*Please refer to back page for important information*

## Flexisperse 1000N Formulation Guidance

### Clean-In-Place formulations

When formulated into Clean-In-Place cleaning formulations, Flexisperse 1000N contributes to the slowing of the build-up of fats and proteins on surfaces, increases the solubility of precipitating salts, and by forming an ion complex with hard water ions, limits the formation of scale and hard water deposits.

With high caustic and hypochlorite stability, and ability to sequester hard water ions, Flexisperse 1000N is ideal for use as a co-builder in warewash and CIP cleaning formulations.

### Laundry formulations

This polymer was originally used as a production assist that allowed producers to disperse and feed higher solid slurries to the spray dryer, optimizing throughput and energy consumption. Legislation that reduced and ultimately eliminated Sodium Phosphates in detergents led to reformulation of many laundry formulations to a zeolite/polyacrylate co-builder system for which the Flexisperse 1000N was optimized. The combination of molecular weight and molecular weight distribution is designed for the effective sequestration of hardness ions in the wash water, allowing the surfactants in the cleaning formulation to work optimally.

The use of Flexisperse 1000N will enhance the cleaning properties (clay soil removal) of laundry detergents based on both zeolite/soda ash and phosphate. The cleaning performance of any laundry detergent is inversely related to water hardness, and the use of a sequesterant polymer such as Flexisperse 1000N will help to offset the effect of the hardness.

Flexisperse polymers have the ability to reduce calcium carbonate deposition (encrustation) on laundry during the wash cycle. Even with very hard water (300 ppm calcium), adding 1 percent of Flexisperse 1000N to a soda ash-based detergent will virtually eliminate encrustation.

To obtain an optimal effectiveness, Flexisperse 1000N can be used in phosphate based or phosphate free detergents (carbonate, silicate, citrate or NTA-based) at levels between 250 and 1000 ppm in the wash baths in household applications and 100 to 500 ppm for institutional applications.

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