



Flexisperse™ 174

Hydrophobically-modified dispersant polymer

Overview

- Hydrophobically-modified dispersant copolymer
- Use in detergent formulations to increase surfactant dissolution rate, improve suspension of oily and particulate soils, and enhance formulation stability
- Replaces hydrotropes to increase nonionic surfactant cloud point
- Improves detergency of anionic surfactants in hard water
- Increases cold water solubility of detergent ingredients
- Allows formulation reduction in surfactant and builder actives
- Soil suspension and redeposition control for whiteness retention in laundry and reduced spotting in warewashing

Applications

- Liquid laundry
- Synthetic leather tanning
- Hand dishwash
- All-purpose cleaners
- Shower and bath cleaners
- Vehicle wash formulations
- Automatic dishwash liquid

Technical Information

Flexisperse 174 is a new generation hydrophobically modified water-soluble dispersant polymer. Multi-functional Flexisperse 174 improves the detergency of anionic surfactants, increases dissolution rate and cloud point of nonionic surfactants, and prevents the redeposition of oily and particulate soils in liquid laundry applications.

With excellent surfactant compatibility and stability over a broad range of pH, Flexisperse 174 use allows a formulator to reduce the levels of both surfactants and builders in formulations. Flexisperse 174 demonstrably increases the dissolution rate of both anionic and nonionic surfactants, allowing faster and more efficient cleaning at lower temperature and surfactant concentration.

Effective in preventing the precipitation and deposition of mineral scales, Flexisperse 174 reduces or replaces inorganic builders typically used in liquid laundry and automatic dishwash formulations. Compatible particulate soil anti-redeposition agent in liquid laundry formulations.

Formulary

Evaluate at a use rate of 0.1-5.0% solids. Flexisperse 174 is low foaming and compatible with anionic & nonionic surfactant systems. Flexisperse 174 is stable over a broad pH range. Flexisperse 174 is stable to freezing and use temperatures greater than 200°F.

Typical Properties

PROPERTY	VALUE
Appearance	Opaque, viscous liquid
Odor	Mild
Ionic character	Anionic
Water solubility	Soluble
Viscosity @25°C (Brookfield), MPa·s/cps	500-1800
Total solids, %	30 to 32
pH (as is)	6.0 to 7.5
Density@25°C	1.15±0.1 g/ml
Boiling Point	100°C
Flash point	None (aqueous)
Storage	Stable to freezing
Shelf life	12 months

Packaging and Handling

Flexisperse 174 is available in:
Bulk (44,000 lbs)
275 gallon totes (Net Wt. 2490 lbs)
55 gallon plastic drums (Net Wt. 498 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 174

Hydrophobically-modified dispersing agent

Challenges in liquids formulation

Liquid laundry detergent continues to grow market share at the expense of powders in the nearly \$5 Billion laundry detergent market. Capturing the cost per wash cycle advantage of powders over liquids presents an ongoing challenge for formulators of liquid products. Value-added ingredients such as enzymes, bleaches and bleach additives, as well as traditional ingredients such as inorganic builders and anti-redeposition agents become problematic in liquid formulations.

Oily and particulate soil suspension

Flexisperse 174 hydrophobically-modified detergent polymer offers a liquid formulation stable alternative to conventional polycarboxylate anti-redeposition ingredients with the added benefit of releasing and dispersing oily soils as well as particulate soils. Interactions of the hydrophobic component of Flexisperse 174 with nonionic surfactants significantly improves the oily soil release characteristics of a detergent system by altering the surfactant/polymer micelle shape, which favors spontaneous emulsification for subsequent soil release by washing mechanical action. Effective release and dispersion of oily soils and particulates contribute to whiteness retention in laundry applications and cleaner, shinier dishes and glassware with reduced spotting in dishwashing applications.

Increased rate of surfactant dissolution

Advances in detergent and washing equipment technology lead to shorter wash cycles at lower temperatures. Flexisperse 174 demonstrably increases the rate of surfactant dissolution in low temperature wash conditions, improving the overall wash performance of the detergent system. Interactions between Flexisperse 174 and anionic/nonionic surfactants and inorganic builders interrupt the tendency for viscous gel formation as the concentrated liquid detergent solution begins to dissolve in water, especially cold, electrolyte rich water. Increasing the rate of detergent dissolution in a decreasing temperature and wash cycle environment, maximizes detergent ingredient contact with the fabric matrix, while minimizing required detergent ingredient concentration for effective cleaning performance.

Formulating advantages

Flexisperse 174 improves the detergent performance of liquid laundry and dishwash formulations, and aids the formulator by compatibilizing a wide range of formulation ingredients for improved formulation stability, appearance and shelf life, reducing the need for detergency limiting hydrotropes. Flexisperse 174 extends the functional temperature range of nonionic surfactants by increasing the cloud point and reducing the gel phase tendency upon dilution in cold water. Flexisperse 174 increases the dissolution rate of anionic surfactants in the presence of electrolytes that typically decrease anionic surfactant dissolution rates. Soluble in glycols and polar organic solvents, Flexisperse 174 enhances the performance of detergent pouches, sachets, pods and pacs. Flexisperse 174 is stable over a broad range of pH, controls calcium silicate scale formation, and functions as a co-builder in preventing precipitation & deposition of mineral scale and deposits allowing for a reduction in sodium silicate and other alkaline builders in formulations.

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