FLOPAM™ SF

Solvent Free
Dispersion Range

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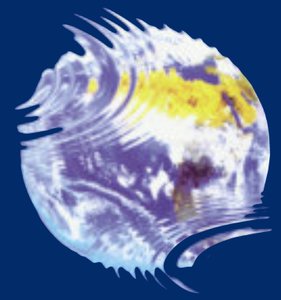
SNF FLOERGER®



SNF FLOERGER®

FLOPAM™ SF SERIES
solvent free dispersions

SNF FLOPAM SF : Solvent Free Dispersions

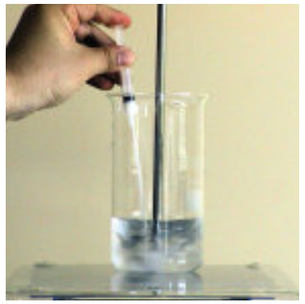
SNF Floerger has recently developped a new range of products based on a water in water dispersion process that is different from the traditional water in oil inverse emulsions standardly used throughout the water treatment industry.

FLOPAM SF are water based thus very easy to activate (to dissolve),

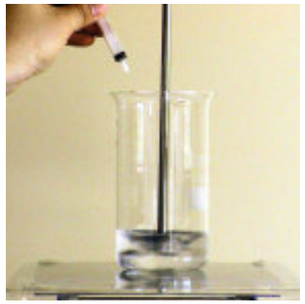
These dispersions are solvent and surfactant free, making this range of products environmentaly friendly.

Other advantages are the possibility to use them without expensive feed equipment, their particular ability to be used in flotation processes, their efficiency in phase separation, and the absence of residual surfactant or solvent in the case of closed circuit systems.

FLOPAM SFC 10
commercial product



t zéro = 0 s



t = 2 s

t = 30 s

FLOPAM SF dispersions dissolve very quickly in water and give a viscous clear product

FLOPAM™ SF SERIES
description

What is a water in water dispersion ?

The standard emulsion found in the water treatment industry is a water in oil inverse emulsion. That means that the polymer is located in microscopic water droplets emulsified throughout an oil medium (see diagram n°1). In fact the water in the droplets is not considered as free since the polymer restrains it and the product is more like a dispersion of a gel in oil.

A water in water dispersion is based on a different principle involving a polymer precipitation in brine. The final product obtained is a stable dispersion of microscopic polymer particles in a brine solution (see diagram n°2).

FLOPAM SF
a new form of polymer

EMULSION

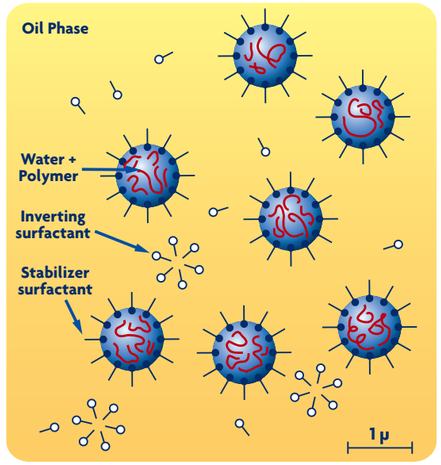


Diagram n°1 :
Standard inverse emulsion of polymer

DISPERSION

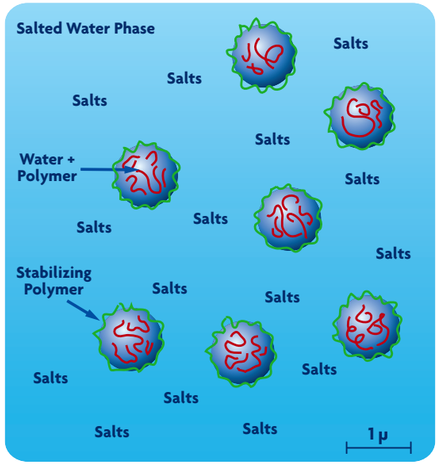


Diagram n°2 :
Water in water dispersion of polymer

FLOPAM™ SF SERIES
properties

FLOPAM SF Water in Water Dispersion Properties

The dispersions of the **FLOPAM SF** Series that have the following common properties:

- Solvent and surfactant free
- Very easy to dissolve, even in hard water
- BGVV Approved
- Low to medium molecular weight polymers

- Wide pH range of applications
- Very efficient on oil, grease and hydrocarbon separation
- Phase separation in flotation processes
- Retention and drainage agent for paper applications
- Treatment of waste water in coating applications
- Dewatering of sludge
- Flocculation in Physico-Chemical, Primary, Biological and Digested sludge processes

FLOPAM SF
are ISO 9001 certified

Easy to prepare

By the simple fact that these dispersions only have a water phase without surfactants and oil, the activation process is much more straitforward than for other polymers like powders or emulsions. **FLOPAM SF** can be injected through a simple in-line static mixer in the stream to treat without the need of a maturation tank or a sophisticated make up unit thus reducing the investment costs and space requirements.
FLOPAM SF is a water in based range of products, there is no need for high shear to activate, a simple dilution is sufficient. Therefore there is no more risk of losing active content by undershearing or changing the molecular weight of the product by overshearing.

FLOQUIP DIFULOC :
in-line static mixer

FLOPAM™ SF SERIES
applications

Oil Production

FLOPAM SF is a dispersion in brine, therefore it can be activated in salt water.

FLOPAM SF has a good efficiency record on water-oil phase separation.

FLOPAM SF is recommended in flotation processes.

Paper Production

FLOPAM SF products do not contain any oil nor surfactants not inverters. Therefore in applications where a closed circuit waste water treatment system is in use there is no accumulation of oil or surfactants in the process thus reducing the foaming problems that are frequent in such processes when they are not closely controlled.

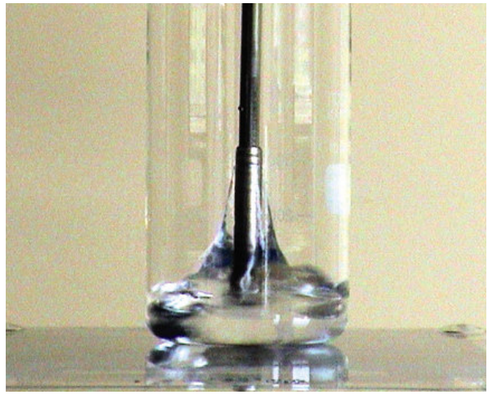
FLOPAM SF also brings value to the paper manufacturing process, such as:
- Increasing the filler and fiber retention
- Enhances the drainage
- Lowers water consumption helping mill closure
- Efficient clarification and sludge dewatering

FLOPAM™ SF SERIES
different physical forms

PolyAcrylamide water soluble flocculants exist in several commercialy available physical forms : Powder, Bead, Emulsion, Solution and Dispersion.

While the polymer itself is based on the similar chemistry, the physical form gives different properties to the finished product.

Product	Chemistry	Application
Dispersion	No surfactants, no solvent Very quick dissolution Very low make-up cost Presence of hydrophobic monomers	Lower active content Lower molecular weight Short shelf life
Emulsion	Quick dissolution Low equipment cost Very High molecular weights Branched products available	Presence of surfactants and solvent Rain cycle Sensitive to water and decantation Limited shelf life
DW Emulsion	Same as emulsions Less sensitive to water and decantation Higher active content than emulsions	Presence of surfactants and solvent Rain cycle Limited shelf life
Powder	100% active content Low storage and freight costs Very long shelf life	Expensive Make-Up equipement Long dissolution time needing ageing time Fines
Bead	Same as powders with Free flowing Quicker dissolution time No insolubles Lower molecular weights achievable	Expensive Make-Up equipement long dissolution time needing ageing time More expensive than powders



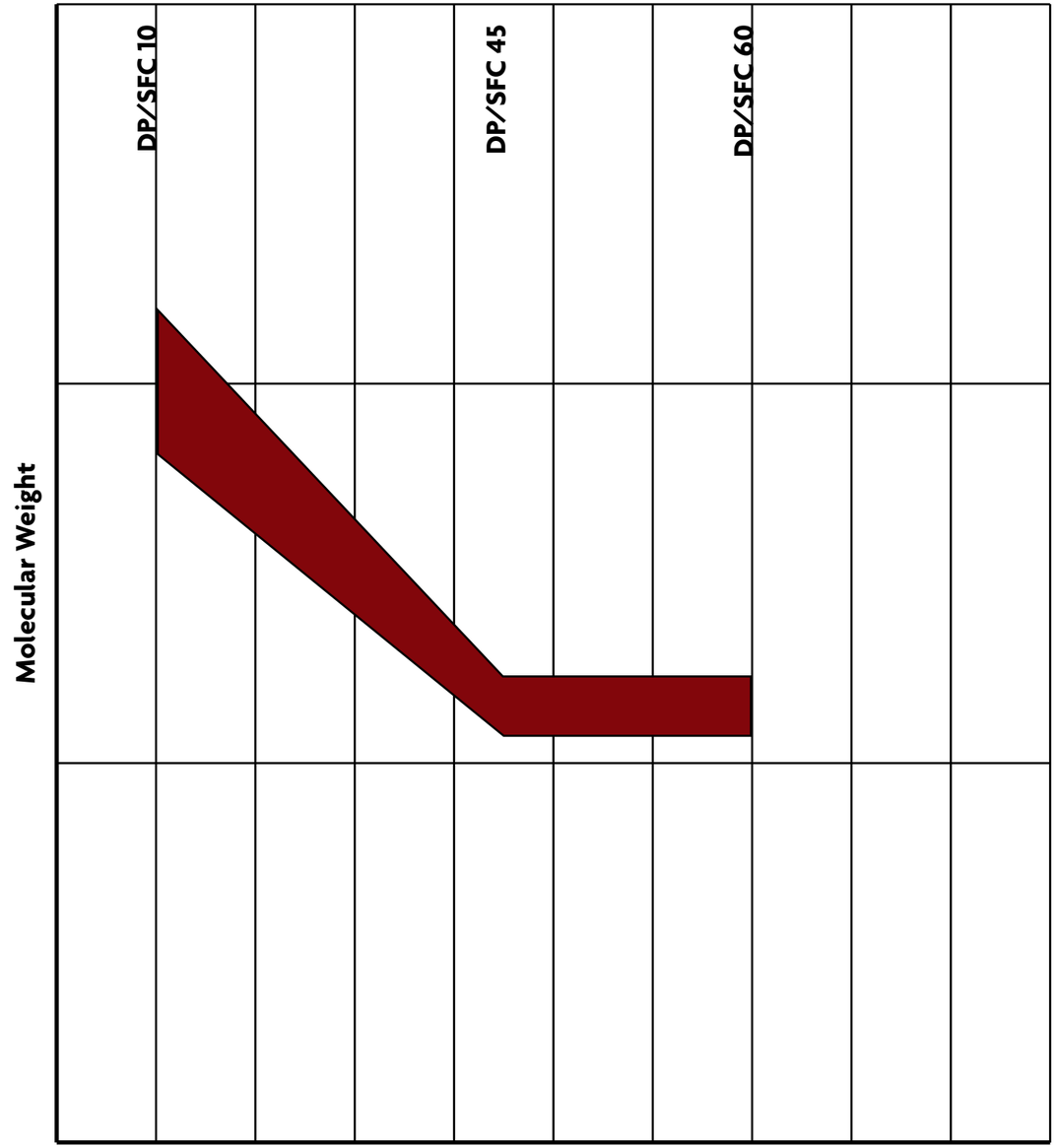
Handling and Storage

Avoid contact of the dispersion with small quantities of water.

Store under constant temperature between -10°C and 40°C.

Dispersions have a shelf life of three months. A slight deposition (thickens at the bottom) can occur but can be easily recovered by agitation and does not imply damage of the product, even for a longer storage period.

FLOPAM™ SF SERIES
Molecular Weight Graph



Molecular Weights of FLOPAM SFC Series us Cationicity