

A LITTLE TIP TO GET THE BEST !

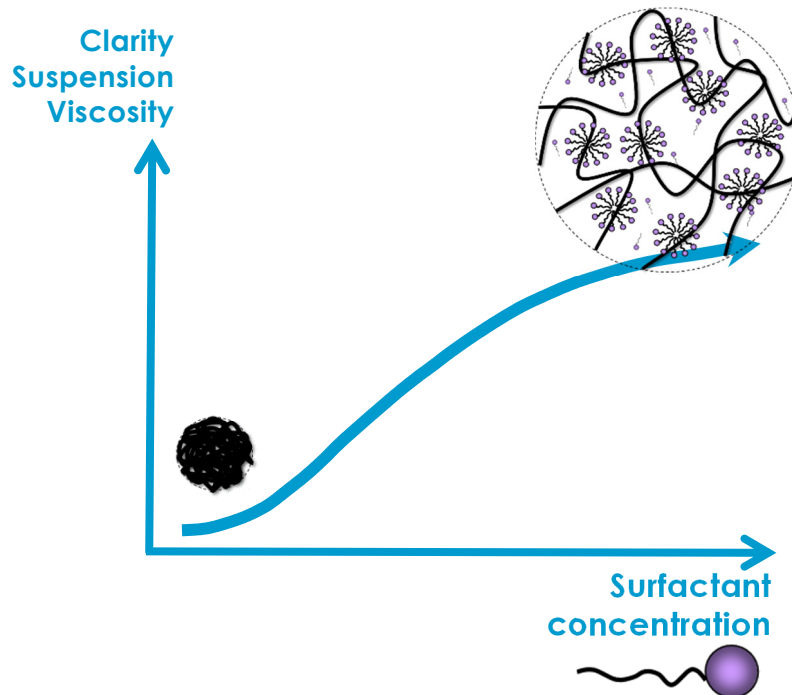
From pH 3.5 Rheostyl™ 85 L

How does it **work**?

As supplied, Rheostyl™ 85 L is a milky liquid dispersion of polymer microgels. To develop its performance of Viscosity, Suspension and Clarity, the polymer needs to be swollen.

In the low pH range (from 3.5 to 6), surfactant is the driver to activate Rheostyl™ 85 L swelling.

Indeed, surfactant micelles can solubilize polymer chains and generate swelling by electrostatic repulsions.



Polymer swelling ⇒ Clarity, Suspension & Viscosity

INCI

Acrylates copolymer

Applications Surfactant-based cleansing formulas

Chemistry

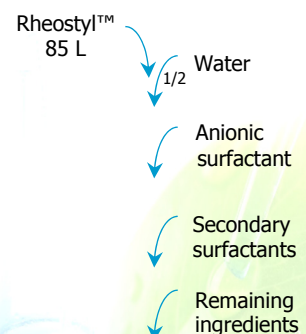
Crosslinked copolymer of acrylic monomers

How to optimize **formulation**?

TIP n°1: Start the formulation with Rheostyl™ 85 L and surfactants

Order of introduction:

- 1- Dilute Rheostyl™ 85 L in water (50/50)
- 2- Add the **ANIONIC** surfactant first and wait until transparency
- 3- Add secondary surfactants
- 4- Add remaining ingredients of the formula and adjust pH



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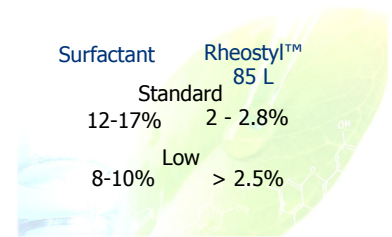
From pH 3.5
Rheostyl™ 85 L

TIP n°2: Adjust surfactants and Rheostyl™ 85 L concentrations

For standard surfactant content (12 to 17% active), use 7 to 10% of Rheostyl™ 85 L as supplied (2 to 2.8% active).

For low surfactant content (8 to 10% active), use concentration of Rheostyl™ 85 L above 9% as supplied (> 2.5% active).

To improve Clarity, Viscosity and Suspension, increase surfactants and/or Rheostyl™ 85 L content.



Surfactant	Rheostyl™ 85 L
Standard	2 - 2.8%
12-17%	
Low	> 2.5%
8-10%	

TIP n°3: Preserve the performance of Rheostyl™ 85 L

To preserve Clarity, Viscosity and Suspension, introduce each ingredient slowly in a diluted state to avoid osmotic chock.

For example, the pH is adjusted with a diluted acid (< 50%) progressively introduced.

TIP n°4: Synergies & Incompatibilities

NaCl can be used to increase Viscosity up to 1%. Above 1%, Clarity and Suspension can be impacted.

Preservatives:

Use preferably natural preservatives such as sodium benzoate, sodium salicylate, potassium sorbate... Avoid Phenoxyethanol.

Parfums and solubilizers as well as glycol and alcohol can impact Rheostyl™ 85 L performances. When using these ingredients, start rather with the minimum amount then increase slowly up to the targeted concentration and evaluate the impact.

How to formulate with **sulfate-free** surfactants ?

Rheostyl™ 85 L is compatible with most sulfate-free surfactants. Formulation guidelines stay the same that with sulfate based surfactants. This means that you need to follow 2 rules when choosing your sulfate-free surfactant blend:

- Use at least one anionic surfactant
- Introduce the anionic surfactant first

In term of concentration, it is recommended to use a minimum of 6% of anionic surfactant. A list of effective surfactants is provided on the right hand side. This list is not exhaustive and alternative surfactants can be tried.

A last recommendation: Check the compatibility of your surfactants blend with the pH conditions targeted (ionicity, stability, transparency, color, foam).

1 - **ANIONIC** surfactants to activate Rheostyl 85L

- Sulfonate
- Taurate
- Isethionate
- Ether Sulfosuccinate
- Sarcosinate...

+

2 – Secondary surfactants

- Betaine
- Amphoacetate
- Amidopropyl hydrosultaine
- Glucoside
- Glycinate
- Glutamate...