



Formulating Mild Facial Washes with ACULYN™ Rheology Modifiers

Consumers expect a pleasant sensorial experience from their cleansing routine. This can be achieved by developing mild, non-irritating products with excellent aesthetic properties. In this respect, the use of mild surfactants for cleansing products is a growing trend, particularly in the area of facial cleansers.

Unfortunately, most of these mild surfactants are difficult to thicken and achieving a pleasant texture for cleansing products can be a challenge. In parallel, additional challenges exist if clear products are required.

Dow Personal Care can help you solve this challenge with the use of ACULYN™ 28 Rheology Modifier.

Supplied as a liquid, it is easier to formulate with and easier to manufacture with, as it doesn't require dilution or hydration unlike some other thickeners. ACULYN™ 28 Rheology Modifier displays an excellent thickening capability while maintaining a crystal clear appearance in the presence of mild surfactants at typical cleansing pH levels of 4.0 - 8.0.

Comparative studies were carried out with other thickeners to illustrate the power of ACULYN™ 28 Rheology Modifier in systems containing mild surfactants.

Mild facial wash based on Glucoside (formulated at pH 5.5)

Trade Name	% Wt.	% Solids	INCI / CTFA Name	Supplier
Deionized Water	50.00		Aqua / Water	
ACULYN™ 28 Rheology Modifier	7.50	1.50	Acrylates / Beheneth-25 Methacrylate Copolymer	Dow Chemical
Steol C-370E	3.85	2.00	Sodium Laureth-3 Sulfate	Stepan
PURENE™ Glycerin	5.10		Glycerin	Dow Chemical
Glucopon 600 CS UP (52%)	9.61	5.00	Cocoyl Glucoside	BASF
Empigen BSFA (30.6%)	6.54	2.00	Cocamidopropyl Betaine	Huntsman
Amphosol 2C (38%)	5.26	2.00	Disodium Cocoamphodiacetate	Stepan
Citric Acid (20%)	to pH 5.55		Citric Acid	VWR
NEOLONE™ PE	0.50		Methylisothiazolinone, Phenoxyethanol	Dow Chemical
Deionized Water	q.s.		Aqua / Water	

A competitive product was tested in the same formulation at 1.5% solid polymer.

Thickener	ACULYN™ 28 Rheology Modifier	Competitive Acrylates / Beheneth-25 Methacrylate Copolymer
Viscosity	25,000 cPs	5,000 cPs
Clarity		

The above data illustrate how ACULYN™ 28 Rheology Modifier can provide excellent thickening properties while maintaining excellent clarity including at relatively low pH levels.

Mild Facial Wash based on Glutamate (formulated at pH 6.0)

Glutamates are a family of mild surfactants that are notoriously difficult to thicken. In the example below, ACULYN™ 28 Rheology Modifier is compared with other thickening technologies in a glutamate-based system.

Trade Name	% Wt.	% Solids	INCI / CTFA Name	Supplier
Deionized Water	40.00		Aqua / Water	
ACULYN™ 28 Rheology Modifier	10.00	2.0	Acrylates / Beheneth-25 Methacrylate Copolymer	Dow Chemical
PURENE™ Glycerin	3.00		Glycerin	Dow Chemical
Amisoft CS-22 (24.8%)	20.00	5.0	Disodium Cocoyl Glutamate (and) Sodium Cocoyl Glutamate	Ajinomoto
Empigen BSFA (30.6%)	9.80	3.0	Cocamidopropyl Betaine	Huntsman
Amphosol 2C (38%)	7.89	3.0	Disodium Cocoamphodiacetate	Stepan
NEOLONE™ PE	0.50		Methylisothiazolinone, Phenoxyethanol	Dow Chemical
Fragrance Aqua Cool	0.10		Parfum / Fragrance	Mane
Citric Acid (25%)	to pH 6.0		Citric Acid	VWR
Deionized Water	q.s.		Aqua / Water	

Several thickening technologies were tested in the same formulation using 2% active thickening agent.

Thickener	ACULYN™ 28 Rheology Modifier	Competitive Acrylates/ Beheneth-25 Methacrylate Copolymer	Acrylates / Steareth-20 Methacrylate Copolymer	Sodium Chloride
Viscosity (Brookfield LV 12 rpm)	24,000 cPs	1,100 cPs	410 cPs	<10 cPs
Turbidity (NTU)	9	64	58	2

The above data illustrate how ACULYN™ 28 Rheology Modifier can provide excellent thickening properties while maintaining excellent clarity including at relatively low pH levels.

Interested in Learning More?

For more information on ACULYNTM Rheology Modifiers or other products offered by Dow Personal Care, please contact us at the numbers listed below:

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