



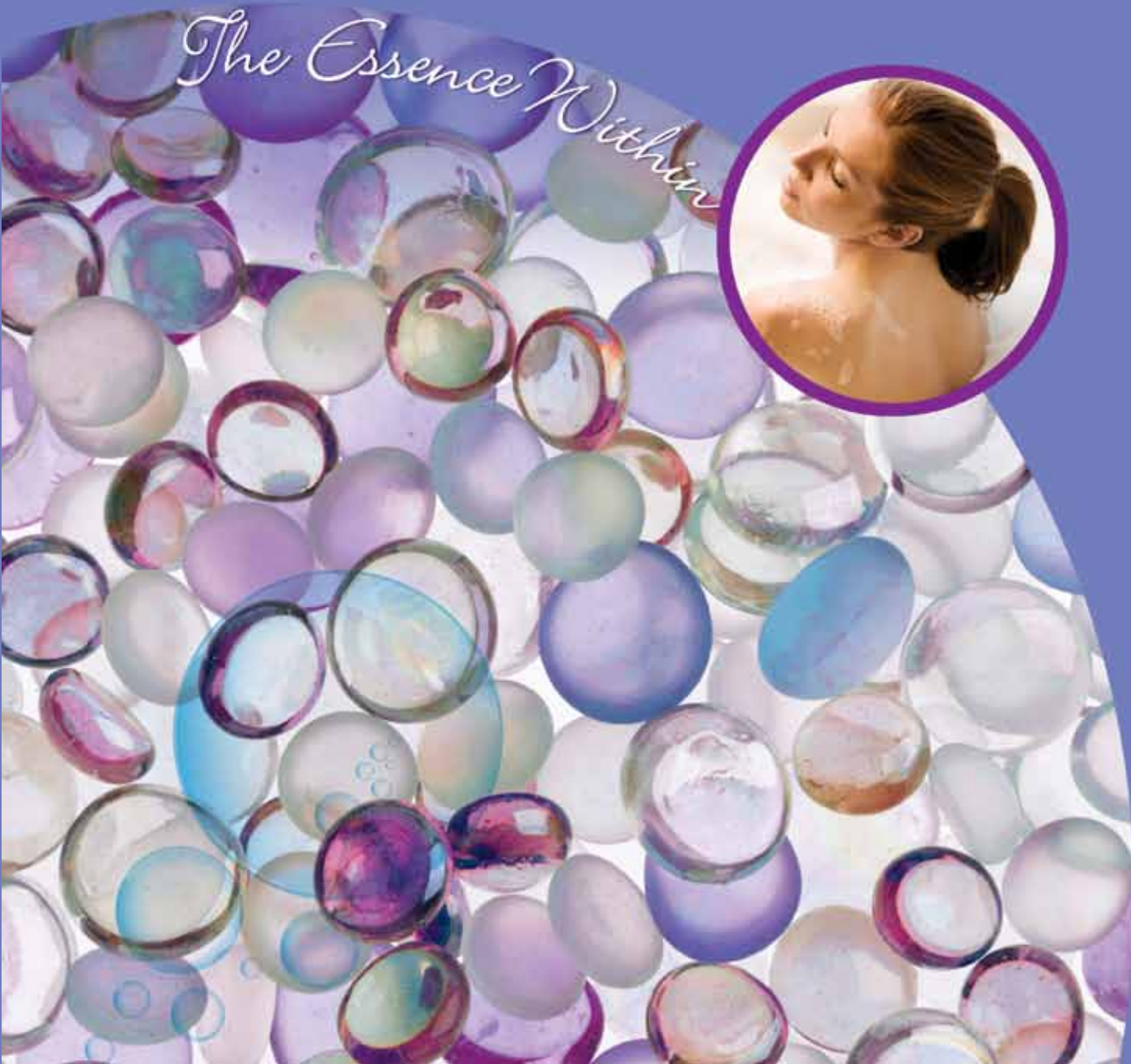
Chemistry is our world, Responsibility is our way

BEAUTY & CARE

# Rheomer® 33

Innovative Rheological Agent  
For Personal Cleansing Solutions

*The Essence Within*





# Rheomer® 33

## The future of texture

Personal cleansing formulations have become more and more sophisticated over time. Cleansing products now come in a variety of textures ranging from crystal clear formulations with suspended particles to pearlescent systems and oil-rich moisturizing shower creams. **Rheomer® 33** answers the rheological needs of today's formulators in personal care.

**Rheomer® 33** is a new hydrophobically-modified alkali-swellaable emulsion (HASE) polymer for personal cleansing formulations. It is designed to provide efficient thickening, shear-thinning rheology & good suspension properties in **low-to-medium surfactant systems**.

### Suggested Applications

- ▶ Crystal-clear Body Washes with suspended beads/capsules
- ▶ Pearlescent Body Washes and Shampoos
- ▶ Moisturizing Shower Creams with high oil content
- ▶ Liquid Hand Soaps
- ▶ Facial Washes with exfoliating beads
- ▶ 2-in-1 Conditioning Shampoos
- ▶ Mild Baby Body Wash

### Key Benefits

- ▶ **High thickening efficiency** in both sulfate-based and sulfate-free surfactant systems
- ▶ **Good suspension properties** in low-to-medium surfactant systems, **typically 6–13 wt% active surfactants**
- ▶ **Superior clarity** for pH > 6.3, with a high tolerance to salt
- ▶ Enhanced flash-foam & foam volume; high foam richness, whiteness & elasticity
- ▶ Pleasant cushiony in-use feel and clean-rinse properties
- ▶ Easy-to-use liquid form: suitable for cold process
- ▶ Good compatibility with cationic polymers

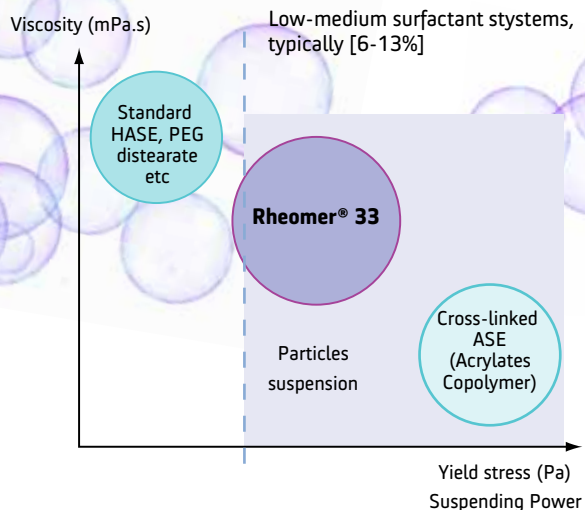
### Formulate with Rheomer® 33

#### Recommended use levels:

2 to 3 wt % active [ 6.5 to 11.0 wt % as supplied]

#### Recommended pH

- ▶ Effective at pH [4 -11], depending on the formulation
- ▶ pH > 6.3 for optimal clarity & viscosity



For formula where clarity is not required, pH can be adjusted below 6 if desired, after neutralization with alkaline solution. Suspension properties usually increase below pH 6.

#### Recommended surfactant content

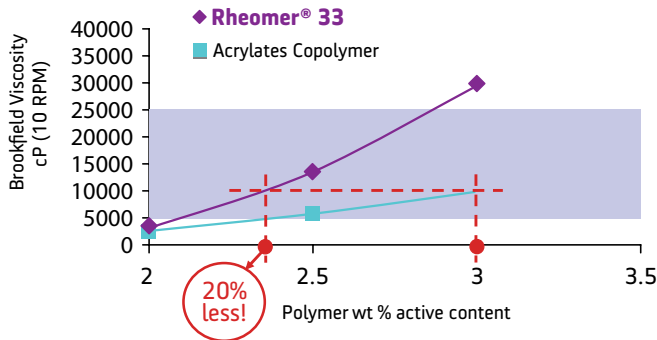
- ▶ [6 -13 wt %] if suspension properties are required\*
- ▶ No limit if sole thickening properties are targeted

\* We recommend to keep level of amphoteric surfactants < 3wt% active

# From viscous and clear solutions ...

## High Viscosity

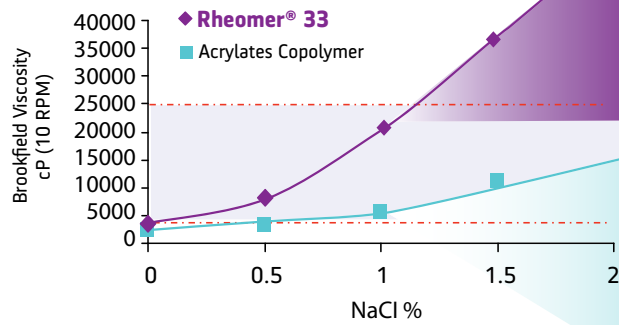
Rheomer® 33 allows for a significant reduction of thickener inclusion level in cleansing formulations



\* In a 9 / 2 wt% active SLES /CAPB surfactant basis, pH 6.5, 0% NaCl

## High Clarity

Rheomer® 33 displays synergistic thickening and high clarity in presence of salt

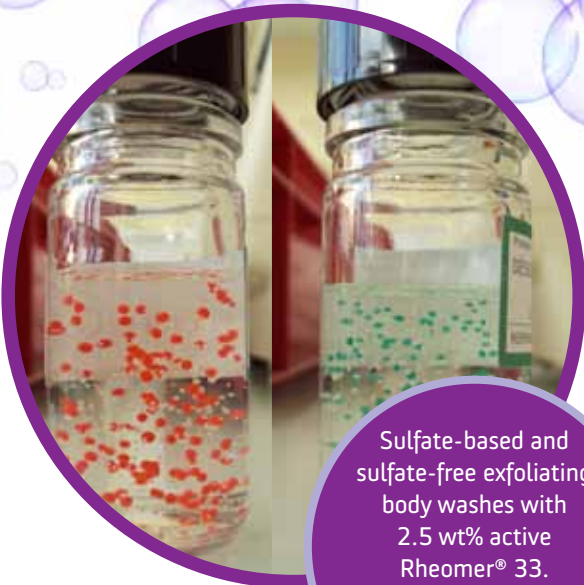


\* In a 9 / 2 wt% active SLES /CAPB surfactant basis, pH 6.5 – 2.0 wt% active polymer



Polymer level necessary to reach ~ 10,000 mPa.s in a 9/2 wt% active SLES/CAPB surfactant basis - pH 6.5

% active Rheomer® 33	~ 2.4 % (~8 % as supplied)
% active Acrylates copolymer	~ 3.0 % (~10 % as supplied)



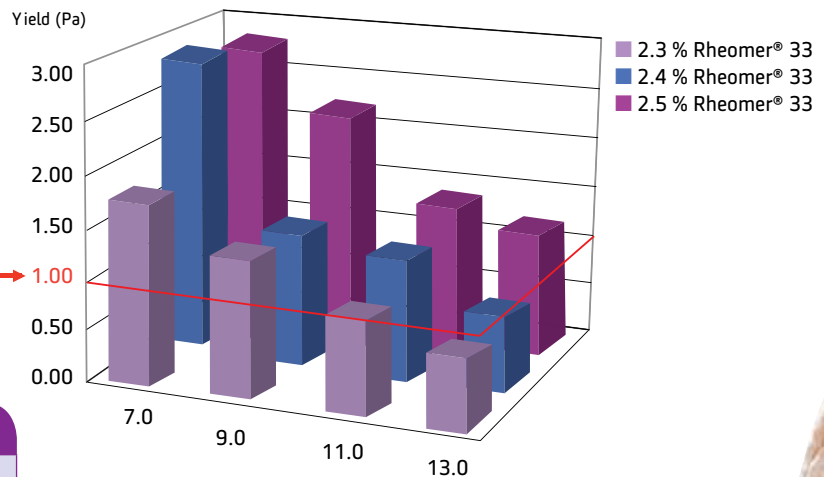
Sulfate-based and sulfate-free exfoliating body washes with 2.5 wt% active Rheomer® 33. Formulations are stable after 3 months storage at 45°C

Minimum yield stress needed for sufficient suspending power

## ... to desired suspension

### Tunable Suspension

The yield point of a formulation is typically recognized as a measure of the ability of a composition to effectively suspend particles. Dispersed particles will remain suspended if the yield value is sufficient to overcome the effect of gravity or buoyancy on these particles. **With Rheomer 33, yield stress > 1 Pa which is typically sufficient to suspend most particles is very easily obtained. With Rheomer® 33, the lower the surfactant content, the higher the yield stress.**



wt% active surfactant content SLES/CAPB ratio: 4.5

SLES/CAPB wt % active pH 6.5	7%	9%	11%	13%
Recommended polymer dosage to reach a yield stress >1Pa (wt% active)	2.0% - 2.3%	2.1% - 2.3%	2.3% - 2.5%	2.4% - 2.6%

# From creamier foam ...

A rheological agent typically impacts a formula's appearance (texture) and experience. A high yield stress targeting actives suspension can be detrimental to the overall product experience (ease of extraction from dispenser device, flash-foam, ease of rinsing). **Rheomer® 33** is designed to have a well-controlled balance between yield stress & thickening efficiency for easy collapse of viscosity upon dilution, resulting in enhanced foam properties.

		2.5 wt% Rheomer® 33	2.5 wt% Acrylates copolymer	3.3 wt% Acrylates copolymer
Formula Appearance	<b>Brookfield Viscosity, 10 RPM (mPa.s)</b>	<b>11680</b>	5480	<b>12500</b>
	<b>Transmittance % (600 nm)</b>	98.8	98.2	91.8
	<b>Yield Stress (Pa)</b>	1.3	2.0	5.1

With Rheomer® 33, generate higher foam volume, with increased stability. Foam created is rich, creamy and smooth.

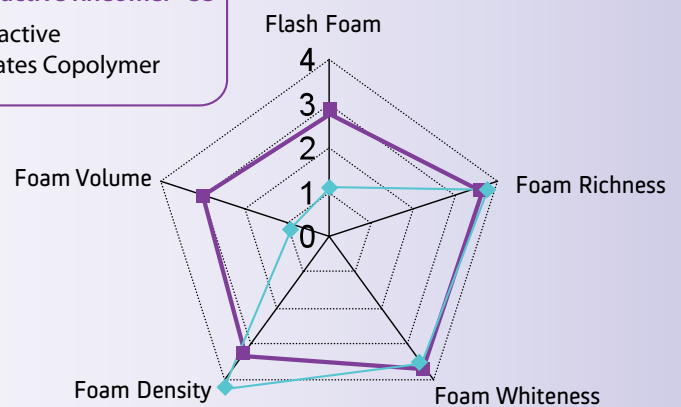
**2.5 % Rheomer® 33**      2.5% Acrylates Copolymer      3.3% Acrylates Copolymer

SLES/CAPB: 9/2 – 0% NaCl  
High Throughput Ross-Miles device – 10% dilution shower gel – water hardness 30°TH

## ... to enriched senses

● Achieve a well-balanced spectrum of foam attributes with Rheomer® 33

■ 2.3% active Rheomer® 33  
◆ 3.1% active Acrylates Copolymer



**Sensorial Assessment Hand-Wash** –  
Trained Panel with standardized protocol; notation scale [1 – 5]

**Formula tested at iso-viscosity:** 12500 – 15000 mPa.s (10RPM)  
2.3 or 3.1 wt% active polymer in 5,6 / 3,4 / 2.0 wt % active SLES / SLS / CAPB



# Rheomer® 33

Express your creativity with Rheomer® 33. Design formulations with innovative textures and enhanced sensorial properties.

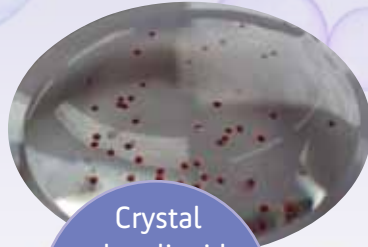


**Rheomer® 33**

**INCI Name: Polyacrylate-33**

**Appearance: Milky Liquid**

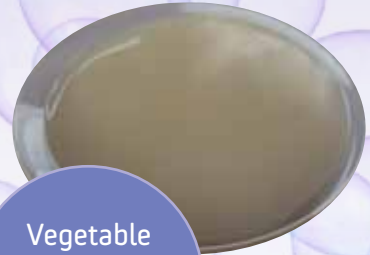
**Solid Content: 27.5% to 30.5%**



Crystal clear liquid hand-soap with emollient capsules



Pearlescent body wash with suspended mica



Vegetable oil moisturizing shower gel



Sulfate-free mild facial wash with exfoliating beads



Clear exfoliating body scrub



## Crystal-Clear Exfoliating Body Wash

INGREDIENTS (INCI NAME)	FUNCTION	IN ACTIVE WT %
<b>Rhodapex® ES-2K</b> (Sodium Laureth Sulfate)	Surfactant	5.0
<b>Rhodapon® SB-8208 S STD</b> (Sodium Lauryl Sulfate)	Surfactant	3.0
<b>Rheomer® 33</b> (Polyacrylate-33)	Rheological Agent	2.1
Sodium Hydroxide (15%)	Alkaline	q.s pH 6.5
<b>Mirataine® BET-C30</b> (Cocamidopropylbetaine)	Surfactant	1.0
Glycerin	Humectant	1.0
Kathon® CG	Preservative	0.05
Metapearls® 1-STD green (polyethylene)	Exfoliating beads	q.s
Deionized Water		qs 100

Brookfield Viscosity: 3000-7000 mPa.s  
pH: 6.5

## Sulfate-Free Mild Facial Wash

INGREDIENTS (INCI NAME)	FUNCTION	IN ACTIVE WT %
<b>Mirataine® CBS</b> (Cocamidopropyl hydroxysultaine)	Surfactant	2.25
<b>Mackanate® EL</b> (Disodium Laureth Sulfosuccinate)	Surfactant	8.75
<b>Rheomer® 33</b> (Polyacrylate-33)	Rheological Agent	2.7
Sodium Hydroxide (15%)	Alkaline	q.s pH 6.5
<b>Mackamide® LAME-100</b> (Acetamide MEA, Lactamide MEA)	Surfactant	0.5
Glycerin	Humectant	0.5
Kathon® CG	Preservative	0.05
Florapearls® Jojoba Evergreen STD (Jojoba esters and Chromium Oxide Green)	Emollient capsules	q.s
Deionized Water		qs 100

Brookfield Viscosity: 4000-8000 mPa.s  
pH: 6.5

## RhodiaWay™

“The way we do business”

Rhodia puts into practice a sustainable development policy called *Rhodia Way* because we are convinced our future is dependent upon the responsible way in which we conduct our current activities – a way that reflects our commitments to each of our stakeholders. *Rhodia Way* encompasses three interlinked, equally important spheres: the Environment Sphere, the People Sphere and the Economic Sphere. Based on a framework of responsibilities, *Rhodia Way* allows Rhodia sites and businesses to conduct self-assessments of their practices and establish action plans that promote continuous progress. At Rhodia, the way we do business creates sustainable value for all of our stakeholders through our innovation and partnerships.



> *Responsible Care* is the chemical industry's voluntary continuous improvement initiative to promote safe handling of products. (1987)



> The UN's Global Compact aims to ensure that heads of companies promote and uphold 10 universal principles concerning human rights, working conditions, respect for the environment and anti-corruption. (2003)



> The International Federation of Chemical, Energy, Mine and general workers' unions. (2005)



Dow Jones Sustainability Indexes  
Member 2010/11

> The Dow Jones Sustainability Index (DJSI World), the front-ranking, non-financial global index of the most efficient companies in the area of social and environmental responsibility. Rhodia is one of the nine global chemical company members of DJSI. (2010-2011)



> Rhodia Novacare has achieved world-wide ISO-9001 Quality Management System Multi-Site Certification. (2008)



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