PERSONAL CARE



SABO
CHEMICAL VALUES

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PERSONAL CARE INGREDIENTS

SABO is a leading Italian manufacturer of high-performance chemicals for cosmetics and various industries, specializing in **emollients, emulsifiers, polymer additives, and surfactants.**

SABO Personal Care offers a diverse portfolio, including esters and ethers for emolliency, surfactants such as ethoxylated compounds and eco-friendly polyglycerol esters, alkylpolyglucosides for mild and sustainable cleansing, and organic UV filters for effective sun protection. Our range also features filming agents for enhanced skin feel, natural active ingredients from upcycling, texturizing powders derived from rice, pearlshine agents, and refatting agents for toiletries.

More than just ingredients, we provide expert solutions tailored for **skincare, suncare, hair care, hair coloring, makeup and detergency**, ensuring innovation and performance in every application.

CERTIFICATIONS AND STANDARDS

Certified Management System SQS ISO 9001 / 14001 / 45001

IQNET CERTIFIED MANAGEMENT SYSTEM

GMP CERTIFIED EFfCI THE EUROPEAN FEDERATION FOR COSMETIC INGREDIENTS

Responsible Care® OUR COMMITMENT TO SUSTAINABILITY

CERTIFIED SUSTAINABLE PALM OIL™ RSPO 2-0535-14-100-00

Verified by ECOCERT COSMOS APPROVED

Please note that a selection of SABO brand products are COSMOS APPROVED certified.

EMOLLIENTS

Emollients are ingredient added to cosmetic products to help soften and smooth the skin.

As a key ingredient in various cosmetic formulations, emollients can be classified based on the following categories:

1. Liquid vs. Solid
2. Lipophilic vs. Hydrophilic

SABO Personal Care offers all four types of emollients. The benefits they provide include:

1. Enhancing **sensory experience**

2. **Conditioning effects** on skin and hair

3. **Wetting** ability for pigments

4. **Dispersing** or co-dispersing properties

5. **Solubilizing or co-solubilizing** oil-soluble actives, perfumes, essential oils, emollients, and preservatives

6. **Solubilizing** crystalline organic UV filters and **wetting** properties for inorganic UV filters

7. **Hydration** and **reduction of Trans-Epidermal Water Loss** (TEWL)

LIPOPHILIC EMOLLIENTS

SABO Personal Care offers a diverse selection of natural and semi-natural lipophilic emollients suitable for various cosmetic applications.
Choosing the right combination of emollients for a specific formulation is essential, and this decision is influenced by multiple factors related to the emollient's properties and characteristics.

Key parameters to consider include:

- **Sensoriality**
- **Refractive index**
- **Polarity**
- **Density**
- **Cloud point**

Among the most critical features to evaluate are the spreading value and spreadability.

SPREADING VALUE: spontaneous diffusion on a surface (skin or filter paper), low surface tension and low contact angle. It says how quicly an emollient spreads on the surface.

SPREADABILITY (GLIDING): spreading induced by a force (rubbing) on a surface. High spreadability is ideal for body products. It depends on the time the emollients «melts» with the skin. Correlated to viscosity: higher is viscosity of the emollient, higher is the spreadability



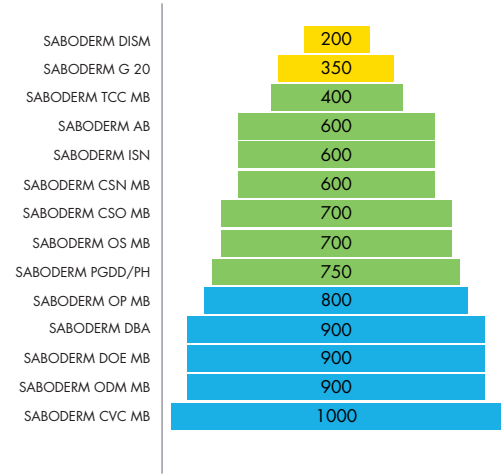


Fast spreading emollients provides immediate smoothness, while low spreading emollients provides a long-lasting smoothness.
Choose the right emollient(s) according
to the final texture type of product
sinergy with other ingredients (like emulsifying system and rheology modifier)
If the cascading is not satisfied the final customer perceives a «**sensory gap**» on the skin, «something missing» between the final part of the rub-out (absorption) and the after-feel.

Spreading and spreadability are distinct properties. For example: Saboderm CVC MB, ODM MB, DOE MB and DBA are high spreading but different in spreadability.
Spreadability is crucial for final applications:
For small surface areas (e.g., eyes, lips), emollients with low glide are preferred for precise application.

For large surface areas (e.g., body, legs), high-glide emollients ensure smooth and even distribution.

SPREADING VALUE



SLOW SPREADING
Long lasting on the skin and giving rich, luxurious, nourishing feeling.

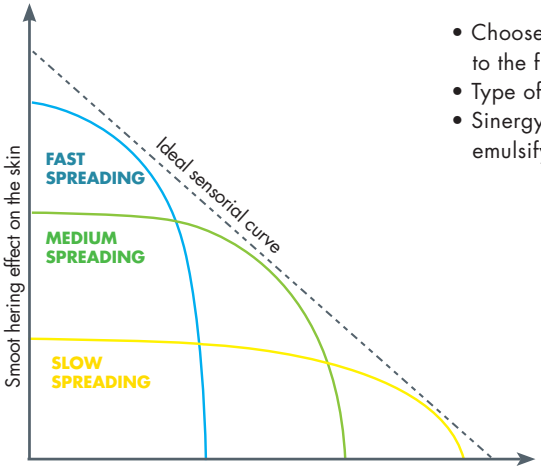
MEDIUM SPREADING
In most cases they are the ones present in highest percentage in order to assure a pleasant sensorial experience.

FAST SPREADING
Light, no residue and fast absorbing.

IDEAL SENSORIAL CURVE

The SABODERM emollient range allows formulators to achieve the desired sensory experience (without "sensory gap") through a wide variety of spreading behaviors.

Fast spreading emollients provides immediate smoothness, while low spreading emollient provides a long-lasting smoothness.



- Choose the right emollient(s) according to the final texture
- Type of product
- Sinergy with other ingredients (like emulsifying system and rheology modifier)

LIPOPHILIC EMOLLIENTS
TECHNICAL TABLE

Trade Name	INCI Name	N.O.I	Polarity*	Cloud Point	Refractive Index
SABODERM AB	*C12-15 Alkyl Benzoate*	0	H	<-5	1,4840
SABODERM CSN MB	*Cetearyl Isononanoate*	0.65	M	<15	1,4472
SABODERM CSO MB	*Cetearyl Ethylhexanoate*	0.68	M	<8	1,4452
SABODERM CVC MB	*Coco-Caprylate/Caprate*	1	M	<15	1,4446
SABODERM DBA	*Dibutyl Adipate*	0	H	<-25	1,4335
SABODERM DISM	*Diisostearyl Malate*	0	L	<-7	1,4590
SABODERM DOE MB	Dicaprylyl Ether	1	L	<-5	1,4310
SABODERM G 20	Octyldodecanol	0	L	<-20	1,4545
SABODERM ISN	*Isononyl Isononanoate*	0	M	<-5	1,4384
SABODERM MLC MB	*Myristyl Lactate*	1	H	<20	1,4464
SABODERM ODM MB	*Octyldodecyl Myristate*	0	M	<-5	1,4535
SABODERM OP MB	*Ethylhexyl Palmitate*	0.67	L	<0	1,4465
SABODERM OS MB	*Ethylhexyl Stearate*	0.68	L	<8	1,4458
SABODERM PDA MB	*Dilinoleic Acid/Propanediol Copolymer*	1	L	<-3	1,4800
SABODERM PGDD/PH	*Propylene Glycol Dicaprylate/ Dicaprate*	0.85	H	<-5	1,4407
SABODERM TCC MB	*Caprylic/Capric Triglyceride*	1	M	<-5	1,4487
SABOWAX CP MB	*Cetyl Palmitate*	1	L	-	-
SABOWAX HCO	*Hydrogenated Coconut Oil*	1	L	-	-

*H: high; M: medium; L: low

Spreading Value (mm²/10Min)	Spreading Value (category)*	After Feel	Feature
600	M	Smooth	• Excellent organic UV filters solubilizer. • Useful for products with glossy effects on body surfaces.
600	M	Dry, smooth	• Good spreadability. • Water-repellent film forming ester. Contributes to no-transfer and long-lasting performance.
700	M	Dry, silky	• Good spreadability. • Analogue of preen gland secretion of aquatic birds. • Water-repellent film forming ester. Contributes to no-transfer and long-lasting performance.
1000	F	Silky-velvety	• All purpose ester suitable for a wide range of applications. • Good wetter of powders (pigments and inorganic UV filters) and good solubilizer of organic UV filters.
900	F	Dry, light	• Useful for products with mattifying effects on body surfaces and excellent organic UV filter. • Solvent and non-volatile carrier for perfumes.
200	S	Rich but not oily	• Excellent wetter of powders (pigments and inorganic UV filters). • Useful for products with glossy effects on body surfaces and hair.
900	F	Dry, light	• Highly stable to hydrolysis, ideal for a variety of applications where a light sensory experience is required. • Useful for products with mattifying effects on body surfaces.
350	M	Rich	• All purpose Guebert alcohol suitable for a wide range of applications. • Perfectly stable to hydrolysis.
600	M	Dry, light, silky after-feel	• Useful for products with mattifying effects on body surfaces. • Very good solubilizer of silicones. • Excellent wetter of powders (pigments and inorganic UV filters).
Off scale	S	Rich with oily-non-oily after-feel	• All purpose elegant ester. • It improves the creaminess of the foam in toiletries. • Wax that melts at skin temperature.
900	F	Rich but not oily	• All purpose ester. • Good binder of powders.
700	F	Smooth-silky	• All purpose ester with great spreadabilty and good wetting power on powders. • Tipically used in make up and body products.
800	M	Smooth-silky	• All purpose ester with great spreadabilty and good wetting power on powders. • Tipically used in body products and color cosmetics.
Off scale	H	Adhesive	• Thermostable film former (suitable for make up and sunscreen). • Useful for products with glossy effects on body surfaces and hair.
750	M	Dry, silky	• Very good wetter of powders and good solubilizer of organic UV filters. • Solvent of perfumes. • Act as anti-foam (whitish effct) in emulsions.
400	M	Soft, smooth	• Versatile emollient with well-balanced sensory properties. It offers a medium-weight texture (moderate wetting power solubilizing power, refractive index et cetera).
-**	-**	Waxy, dry	• Substitute of spermaceti, thickener and stabilizer of emulsions and stick. m.p.= 46-51 °C.
-**	-**	Waxy, buttery	• Perfect thickening emollient for hair products. m.p.= 32-36 °C.

*F: fast; M: medium; S: slow
**: undefined

LIPOPHILIC EMOLLIENTS FOR SUNSCREENS

From a technical standpoint, the choice of emollient in sunscreen formulations is crucial for ensuring optimal performance.

SABO Personal Care's emollients are specifically designed to address these challenges. They offer superior wetting properties for inorganic filters, ensuring better dispersion and spreading of active ingredients, while also providing solubilizing capabilities for crystalline UV filters. This enhances both the effectiveness and stability of sunscreen formulations.

1. WETTING OF INORGANIC UV FILTERS:

Inorganic UV filters, such as Zinc Oxide and Titanium Dioxide, can be challenging to formulate with. Proper emollients help reduce surface tension and promote wetting, allowing these filters to be more evenly spread on the skin, ensuring uniform coverage and enhanced sun protection.

2. SOLUBILIZATION OF CRYSTALLINE UV FILTERS:

Some UV filters, particularly crystalline ones, tend to have poor solubility in typical cosmetic formulations. Using the right emollient ensures better solubilization of these ingredients, preventing them from forming aggregates or crystals that can affect both the product's stability and its efficacy. This helps to increase the stability of the formulation and enhance its ability to absorb UV light effectively.

Emollients play a vital role in enhancing the wetting of inorganic UV filters (such as Zinc Oxide) and promoting the solubilization of crystalline UV filters, ensuring their even distribution and effectiveness in protecting the skin.

3. REFRACTIVE INDEX (RI):

The refractive index (RI) of esters in sunscreen formulations directly impacts UV protection.
Esters typically exhibit RI values between effects. 1.42 and 1.48, depending on molecular structure, polarity, and degree of branching.

High-RI esters enhance light refraction, improving SPF efficiency through increased optical path length.

Low-RI esters reduce optical mismatch with low-RI emollients, optimizing sensory properties and reducing whitening

SOLUBILITY OF ORGANIC UV FILTERS IN SELECTED SABODERM

Trade name	BMT	BMDM	DHHB	EHT	DBT
SABODERM AB	12-15%	13-15%	20-25%	4-7%	23%
SABODERM DBA	10%	15-20%	31%	16%	31%
SABODERM PGDD/PH	5-10%	10-15%	15-20%	5-10%	10-15%
SABODERM CVC MB	5-10%	10%	10-15%	5-8%	13%
SABODERM TCC MB	5-10%	10-15%	15-20%	5-10%	17%

%: indicate the maximum % (w/w) concentration of UV filter that the emollient can solubilize.

Abbreviations: BMT - *Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine (Bemotrizinol), BMDM (Butyl Methoxy Dibenzoyl Methane (Avobenzone), DHHB - Diethylamino Hydroxybenzoyl Hexyl Benzoate, EHT - Ethylhexyl Triazone, DBT - Diethylhexyl Butamido Triazone*

WETTING PROPERTIES OF SELECTED EMOLLIENTS ON ZINC OXIDE

Emollient	Wet Point	Flow Point
SABODERM AB	1,20	5,00
SABODERM CSN MB	1,27	3,20
SABODERM CVC MB	1,09	4,25
SABODERM DBA	1,28	3,90
SABODERM DISM	0,77	2,37
SABODERM DOE MB	1,12	2,44
SABODERM PGDD/PH	1,35	3,82

WET POINT: g of emollient for 1 gr of SABOSOFT RP necessary to have the powder completely wet. The smaller is the wet point, the lighter is the wetting power of that emollient towards the powder.
FLOW POINT: g of emollient for 1 g of SABOSOFT RP necessary to have homogeneous fluid. The smaller is the flow point, the higher is the efficiency of the emollient in creating an homgenoues oil dispersion.

SUNSCREEN
APPLICATION PROPOSAL



WETTING EMOLLIENT FOR INORGANIC UV FILTERS
SABODERM DISM
SABODERM ISN
SABODERM CVC MB
SABODERM PGDD/PH
SABODERM G20
SABODERM ODM MB

WAXES FOR STICKS
SABOWAX CP MB
SABOWAX G40 MB
SABOWAX HCO
SABOCARE® PGS

WATER-REPELLING EMOLLIENT
SABODERM CSN MB
SABODERM CSO MB
SABODERM PDA MB

GLOSSING EMOLLIENT
SABODERM AB
SABODERM DISM
SABODERM PDA MB

FILMING AGENT
SABODERM PDA MB

SOLUBILIZING EMOLLIENT FOR ORGANIC UV FILTERS
SABODERM AB
SABODERM DBA
SABODERM CVC MB
SABODERM PGDD/PH

TEXTURIZING POWDER
SABOSOFT RP

COLOR COSMETICS
APPLICATION PROPOSAL

WETTING EMOLLIENT
SABODERM CVC MB
SABODERM DISM
SABODERM ISN
SABODERM PGDD/PH

FILMING AGENT
SABODERM PDA MB

WAXES
SABOWAX CP MB
SABOWAX G40 MB
SABOWAX HCO

MATTIFYING EMOLLIENTS
SABODERM DOE MB
SABODERM DBA
SABODERM ISN

GLOSSING EMOLLIENTS
SABODERM AB
SABODERM DISM
SABODERM PDA MB

EMULSIFIERS
SABOWAX PIS
SABOWAX FL 65/K MB
SABOCARE® GMS-SE MB
SABOCARE® PGS

MATTIFYING POWDER
SABOSOFT RP



HYDROPHILIC EMOLLIENTS

SABO Personal Care offers a diverse selection of **natural and semi-natural hydrophilic emollients**. Unlike lipophilic (oil-loving) emollients, they are water-soluble.
They are water-attracting ingredients commonly used in cosmetic formulations to hydrate and moisturize the skin.
These emollients help to retain moisture in the skin, leaving it feeling soft, smooth, and moisturized without a greasy residue.

For further details read Functional Ingredients for Toiletries.

They are especially ideal for **high-water-content formulations** such as lotions, body washes, shampoos, facial cleansers, and serums. In these products, hydrophilic emollients enhance the moisturizing properties, improve texture, and ensure smooth spreadability, while also preventing moisture loss and maintaining hydration.

POLYGLYCERYL ESTERS

As multifunctional natural hydrophilic emollients SABO proposes Polylgyceryl Esters: also known as **Polyglyceryl Fatty Esters (PGFE)**, these ingredients are ideal for **clean and green beauty** formulations.

They are especially beneficial in products where mildness and skin compatibility are essential, such as baby care items or formulations for sensitive skin.
Their vegetable origin makes them perfect for products that aim for a **100% natural** claim, providing an attractive alternative to ethoxylated derivatives—which are increasingly scrutinized for environmental reasons—by enabling the creation of **ethoxylate-free formulations**.

Key attributes include:

PEG and Ethylene Oxide Free: They offer a natural solution without the use of synthetic ethoxylated compounds.

Mild and Non-Irritating: Their gentle nature makes them suitable for sensitive skin and baby products.

Moisturizing: They support skin hydration by enhancing moisture retention.

Plant-Derived: Sourced from natural ingredients like vegetable oils and glycerin, they are eco-friendly and biodegradable.

Excellent Skin Compatibility: They are well-tolerated across different skin types and are considered safe in most cosmetic formulations.

Humectant Action: They help prevent formulation dehydration, maintaining product efficacy over time.

POLYGLYCERYL FATTY ESTERS

Product Name	INCI Name	Appearance	HLB
SABOCARE® PGS	*Polyglyceryl-4 Stearate*	Pastille	6,0
SABOCARE® PG4C MB	*Polyglyceryl-4 Caprate*	Liquid	14,0

POLYGLYCERYL ESTERS

All polyglycerol esters can be utilized as **hydrophilic emollients** in cosmetic formulations.

Their unique amphiphilic structure—resulting from the esterification of glycerol with fatty acids—allows them to not only stabilize oil-in-water emulsions as primary or co-emulsifiers but also to enhance skin hydration.

In this dual role, they impart a smooth, non-greasy feel while improving moisture retention, making them particularly valuable in formulations designed for dry or sensitive skin.

Additionally, their **plant-derived nature** and **PEG-free profile** meet the rising demand for clean, green cosmetic products.

Product Name	INCI Name	Primary Function	Application
SABOCARE® PGS	*Polyglyceryl-4 Stearate*	Co-emulsifier; thickening agent; crystallization modifier for anhydrous formulation	Rich creams, Sunscreens, Anhydrous formulation, Hair care
SABOCARE® PG4C MB	*Polyglyceryl-4 Caprate*	Cleansing agent; solubilizer, co-emulsifier	Cleansing Products, Wet wipes, Makeup removers, Micellar water

COMPARATIVE ASSESSMENT OF THE MAKEUP REMOVAL EFFICIENCY OF PG4C MB VERSUS PG6L MB



A fixed amount of carbomer gel including 2% *Polyglyceryl-6 Laurate* (LEFT) and 2% SABOCARE® PG4C MB (RIGHT) was used to remove lipsticks stains from forearm skin. Both gels were applied 20 times with circular movement. SABOCARE® PG4C MB clearly shows better cleansing properties.

ALKYL POLYGLUCOSIDES (APGs)

Non-ionic surfactants based on polyols (glucose) are among the earliest synthetic surfactants, first synthesized by Fischer in 1893. However, they were not produced on an industrial scale until the 1980s.
SABO Personal Care offers three APGs, SABOCARE® APG range in its portfolio to align with current market trends. They are characterized by:

- **Sustainability**: Derived from natural and renewable resources, specifically glucose and palm/coconut-based alcohols.
- **Environmental & safety profile**: readily biodegradable, supporting eco-friendly formulations.
- **Mildness**: Exceptionally gentle on skin, eyes, and hair cuticles, making them ideal for mild cleansing formulations.
- **Formulation flexibility**: compatible with anionic, cationic, and non ionic surfactants, allowing versatility in product development.
- **Stability**: maintains performance across a wide pH range, ensuring robustness in various formulations.

SABOCARE® APG RANGE

SABO Personal Care has broadened its portfolio with three **natural alkyl polyglucoside** (APG) options, increasing versatility across toiletries and personal care applications.

These products are available as **viscous liquids** and **self-preserved** with a pH range of **11.5-12.5**.

Suitable for:

- Facial cleansers, liquid soaps, and shampoos
- Cleansing wipes and skincare formulations
- Shower gels and bath preparations
- Suitable as both a primary or co-surfactant

ALKYL POLYGLUCOSIDES

Product Name	INCI Name	% of use	Features
SABOCARE® APG 818 MB	*Coco-Glucoside*	Face Wash: 10% - 20% Shower Gel, Bath Foam, Shampoo: 15% - 30% For very mild, low-foam cleansers: 5% - 10%	• Can be used a standalone surfactant. • Among the SABOCARE® APG series, it provides the highest foaming performance.
SABOCARE® APG 1200 MB	*Lauryl Glucoside*	As a co-surfactant: 1-5% with SLES, SLS, CAPB, sarcosinates, etc.	• Contributes to viscosity building in both sulfate and sulfate-free systems. Enhances foam stability and formulation mildness.
SABOCARE® APG 2000 MB	*Decyl Glucoside*	• As a primary or secondary surfactant: 2% to 20%, depending on the application • Face Wash 10% to 20% • Shower Gel, Bath Foam, Shampoo: 15% to 30%	• Suitable as both a primary or secondary surfactant, adding foaming and cleansing benefits to the end product. • Produces a rich, dense lather compared to Caprylic/Capric Glucoside, offering enhanced performance.

EMULSIFYING AGENTS

SABO Personal Care offers a wide range of emulsifying agents, categorized based on their composition and origin:

- **Ethoxylated and Non-Ethoxylated** – Providing options for different formulation needs, marketing and regulatory preferences.
- **Natural and Semi-Natural** – Catering to clean beauty trends and sustainability requirements.
- **Single Components or Blends** – Offering flexibility for tailored performance in various applications.
- This diverse portfolio ensures compatibility with different formulation types, delivering stability, texture enhancement, and optimal emulsification performance.

ETHOXYLATED FATTY ALCOHOLS

Ethoxylated fatty alcohols are essential non-ionic emulsifiers, stabilizers, and texture enhancers in various personal care formulations, ensuring stability, spreadability, and performance.

They can form liquid crystal - lamellar gel network (LGN) emulsions.
Ethoxylated fatty alcohols serve as non-ionic emulsifiers and/or solubilizers, offering superior performance in formulations for skincare, hair care, styling products.

Thanks to their:
1. hydrolysis resistance
2. broad ph compatibility
3. electrolyte tolerance

They can be utilized in various formulations, including:
- deodorants/antiperspirants
- depilatory products
- hair relaxers
- hair coloring treatments
- peroxide creams
- products with aha and bha
- formulations with a high pigment load

ETHOXYLATED FATTY ALCOHOLS

Product Name	INCI Name	Appearance	HLB
SABOWAX B 25	*Beheneth-25*	Flake	15,6
SABOWAX CS 6 MB	*Ceteareth-6*	Wax	10,0
SABOWAX CS 20 MB	*Ceteareth-20*	Flake	15,3
SABOWAX CS 25 MB	*Ceteareth-25*	Flake	16,0
SABOWAX CS 30 MB	*Ceteareth-30*	Flake	17,0
SABOWAX LMT 10 MB	*Laureth-10*	Paste	13,0
SABOWAX O 20	*Oleth-20*	Wax	15,6
SABOWAX ST 2 MB	*Steareth-2*	Wax	5,3
SABOWAX ST 21 PL MB	*Steareth-21*	Flake	15,6

SENSORIALITY

An increased degree of ethoxylation results in a formulation with higher viscosity and a heavier feel for the customer. Additionally, longer carbon chains enhance the richness of the afterfeel, producing a final emulsion that appears whiter and shinier.

ETHOXYLATED STEARIC ACID

SABO Personal Care produces ethoxylated stearic acid, with SABOWAX SE 40 MB being the reference product that contains an average of 40 ethylene oxide units.
It provides a light, non-greasy finish in leave-on products.

PEG-40 Stearate is a versatile, high-HLB **emulsifier and solubilizer** widely used in personal care formulations due to its stability, compatibility, and mildness. Its ability to emulsify and solubilize lipophilic ingredients makes it essential in high-performance skincare, hair care, and cleansing products.

ETHOXYLATED STEARIC ACID

Product Name	INCI Name	Appearance	HLB	Function
SABOWAX SE 40 MB	*PEG-40 Stearate*	Flake	16,9	O/W emulsifier

ETHOXYLATED POLYHYDROXYSTEARIC ACID

A distinctive member of this class is SABOWAX PIS, a W/O emulsifier with light texture and unique properties:

- Functions effectively as a solo emulsifier (4-5% concentration).
- Capable of forming highly fluid, stable W/O emulsions.
- Enables the internal phase to incorporate a high level of water—up to 90%.
- Exhibits excellent dispersing properties for pigments.

Applications

- Very low viscosity stable W/O emulsions
- W/O Creams
- High internal phase(HIP) W/O emulsions
- Cleansing milk
- Water-free G/O emulsion
- High electrolyte content W/O emulsions
- Pigment containing W/O emulsions (like foundations)
- Daily skincare with SPF
- Sun care
- Make-up
- Silicone containing W/O emulsions

ETHOXYLATED POLYHYDROXYSTEARIC ACID ESTERS

Product Name	INCI Name	Appearance	Function
SABOWAX PIS	*PEG-30 Dipolyhydroxystearate*	Wax	W/O emulsifier

NON-ETHOXYLATED AND ETHOXYLATED SORBITAN ESTERS

Both non-ethoxylated and ethoxylated sorbitan esters play important roles in cosmetic formulations. Their selection depends on the required emulsification type (O/W or W/O), and the desired texture.

Non-ethoxylated versions are ideal for more lipid-based systems and **W/O emulsions** - Low HLB values (typically around 4-7). Useful also as counter-emulsifier in **O/W emulsions and surfactant in lipid-based cleansers**.

NON-ETHOXYLATED SORBITAN ESTER

Product Name	INCI Name	Appearance	HLB
SABOSORB MS-P MB	*Sorbitan Stearate*	Flake	5,0

Ethoxylated versions are preferred for aqueous formulations and **O/W emulsions**.

For their high HLB they are effective **solubilizers**, emulsifiers and co-emulsifiers.

ETHOXYLATED SORBITAN ESTER

Product Name	INCI Name	Appearance	HLB
SABOSORB MOE MB	*Polysorbate 80*	Liquid	15,0
SABOSORB MSE MB	*Polysorbate 60*	Paste	14,9
SABOSORB MLE MB	*Polysorbate 20*	Liquid	16,7

ETHOXYLATED HYDROGENATED CASTOR OIL

Ethoxylated hydrogenated castor oil is a modified form of castor oil, where the castor oil is first hydrogenated (saturating the fatty acids) and then ethoxylated by adding ethylene oxide units. This process improves its emulsifying and solubilizing properties, making it suitable for a variety of cosmetic formulations.

Both PEG-40 Hydrogenated Castor Oil and PEG-60 Hydrogenated Castor Oil are **versatile emulsifiers and solubilizers**. Both are widely used in skincare, hair care, and cleansing products for their ability to improve texture, stability, and solubility of oil-based ingredients.

ETHOXYLATED HYDROGENATED CASTOR OIL

Product Name	INCI Name	Appearance	HLB
SABOWAX EL-H 40	*PEG-40 Hydrogenated Castor Oil*	Paste	14,0
SABOWAX EL-H 40/L	*PEG-40 Hydrogenated Castor Oil*	Liquid	14,0
SABOWAX EL-H 60/L	*PEG-60 Hydrogenated Castor Oil*	Liquid	15,0

POLYGLYCERYL FATTY ESTERS (PGFE)

These ingredients are ideal for clean and green beauty formulations. They are especially beneficial in products where mildness and skin compatibility are essential, such as baby care items or formulations for sensitive skin.

In emulsions, these ingredients function as primary **emulsifiers**, **co-emulsifiers**, and **hydrophilic emollients** with skin and hair conditioning effect.

POLYGLYCERYL FATTY ESTERS

Product Name	INCI Name	Appearance	HLB	*Function*
SABOCARE® PGS	*Polyglyceryl-4 Stearate*	Pastille	6,0	Co-emulsifier
SABOCARE® PG4C MB	*Polyglyceryl-4 Caprate*	Liquid	14,0	Co-emulsifier

GLYCERYL ESTERS

Glyceryl esters are a group of **non-ionic surfactants** derived from glycerin (glycerol) and fatty acids. They are formed by the esterification of glycerin with fatty acids like stearic acid. These esters are widely used in cosmetic and personal care formulations due to their ability to improve the texture, stability, and performance of products.

GLYCERYL ESTERS

Product Name	INCI Name	Appearance	Function
SABOWAX G 40 MB	*Glyceryl Stearate*	Microbead	Co-emulsifier/Thickening agent/Cristallization modifier for solid formulations/Opacifier
SABOCARE® GMS-SE MB	*Glyceryl Stearate SE*	Flake	Efficient self-emulsifying base

EMULSIFYING BLENDS FOR SKIN CARE

SABO Personal Care offers optimized **O/W emulsifying blends** (solid) of various compounds that provide excellent stability, perform effectively across a wide pH range, and are compatible with numerous other ingredients like salts and, in general, extreme conditions.

Additionally, these blends are versatile, making them suitable for various applications, while also helping to reduce production costs by minimizing the need for handling and storing multiple raw materials.

EMULSIFYING BLEND FOR SKINCARE

Product Name	INCI Name	% of use	Properties
SABOWAX AE MB	*Glyceryl Stearate, Ceteareth-20, Ceteareth-12, Cetearyl Alcohol, Cetyl Palmitate*	4-10%	Creates a fluid, stable system, and when combined with SABOWAX CS 25, it produces PIT emulsions
SABOWAX FL 10 MB	*Cetearyl Alcohol, Ceteareth-20*		Easy to adjust viscosity, from face cream to body lotion
SABOWAX FL 20 MB	*Cetearyl Alcohol, PEG-20 Stearate*		Forms liquid crystals within the emulsion, promoting 'time-release' hydration and acting as a slow-release delivery system for active ingredients
SABOWAX FL 65/K MB	*Glyceryl Stearate, PEG- 100 Stearate*		Primary emulsifier for all types of skin. The viscosity can be adjusted by adding glyceryl stearate and fatty alcohols
SABOCARE® WL MB	*Cetearyl Alcohol, Sodium Lauryl Sulfate*		Very efficient non ethoxylated emulsifying blend. In rinse-off products, it improves rinsability

NOTE: APPLICATIVE SHIFT

For simplicity, in this brochure, the blend has been categorized for skincare and hair coloring applications. However, it's important to note that, depending on the desired texture, formulation cost, marketing requirements, and other factors, any blend can be selected to suit specific needs. For example, SABOWAX FL 10 MB, for it resistance to extreme conditions it can be used for color bases and developers SABOWAX FL 2 MB has been designated as an emulsifying blend for developer, but it can be used for a variety of emulsions across different applications like skincare and AP/DEO.

HAIR COLORING

In addition to its skincare blends, SABO Personal Care is renowned for its high-quality blends used in hair coloring applications, including permanent and demi-permanent products, such as coloring creams (or gels) and developers.

These formulations are highly demanding in terms of conditions, such as pH and stability, ensuring optimal performance in challenging environments.

COLOR BASE

- Contains color precursors (i.e. primary intermediates and couplers)
- Tipically O/W emulsion but also other different formulations required by the market (e.g. gels)
- High pH (tipical pH=10-10.5)
- Hard conditions: high pH (Ammonium hydroxyde, MEA etc.)

DEVELOPER (aka oxidizing product or activator)

- Develops the dyes and lighten the hair (if peroxide % is not low (Tipically O/W emulsion
- Very acidic pH (≈3) for H_2O_2 stabilization (Phosphoric acid, salycilic acid et cetera)
- Need Chelating agent (e.g. Etidronic acid)
- Hard conditions: low pH and oxidizing environment

General rule: mixing ratio 1:2 (coloring product: developer), but operator can change according to desired lift effect, thickness of hair, length of hair (from 1:1 to 1:2.5)

ADVANTAGES OF USING BLENDS

The benefits of these blends are listed below.

1. They are composed by:
   I. at least one consistency factor (fatty alcohol)
   II. at least one high HLB ethoxylated alcohol or anionic surfactant
2. They differ from final texture and viscosity
3. Allow to obtain stable systems
4. Easy to formulate final products: customer has not to think to emulsifying system but has only to understand the correct % level depending on the final texture
5. Reduce the manipulation and storage of several raw materials
6. Cost effective
7. Suitable for less aggressive hair-care formulations: e.g. conditioners
8. Possibility to introduce claim ingredients or scalp care ingredients

NOTE: the products listed in the following tables have been indicated with the most common used by customers. They should not be considered exclusive to color base or activators, as they can be used interchangeably for both.

BLENDS FOR DEVELOPERS

- Blends based on ethoxylated fatty alcohol and fatty alcohols
- Good emulsifiers suitable for low and high viscosity emulsions
- Add lipophilic emollient: 0.5-1.5% like SABOWAX HCO
- Additional fatty alcohol (Cetearyl Alcohol) for viscosity adjustement: 0.5-2%
- Stable either in acid (and alkaline) pH
- Suitable for any other application (e.g. skincare)

BLENDS FOR DEVELOPERS

Product Name	INCI Name	% of use
SABOWAX AO MB	*Cetearyl Alcohol, Ceteareth-30*	2,5-5%
SABOWAX FL 1 MB	*Cetearyl Alcohol, Lauryl Alcohol, Ceteareth-20, Ceteareth-30*	
SABOWAX FL 2 MB	*Cetearyl Alcohol, Ceteareth-30, Cetearyl Ethylhexanoate*	

BLENDS FOR COLOR BASES

The blends differ in natural content, composition, and produce varying final textures when mixed with an activator.

They are classified based on whether they form a creamy texture or a gel-like texture.

CREAMY TEXTURE

Product Name	INCI Name	Appearance	% of use	Final Texture
SABOCARE® WLMB	*Cetearyl Alcohol, Sodium Lauryl Sulfate*	Flakes	10-25%	White shining viscous cream
SABOWAX CSM	*Cetearyl Alcohol (and) Beheneth-25 (and) Beheneth-10 (and) Lauryl Alcohol (and) Dicaprylyl Ether*	Flakes	15-25%	White and very shining cream
SABOWAX HA	*Cetearyl Alcohol (and) Ceteareth-25 (and) Cocamide MEA (and) Myristyl Alcohol (and) Stearic Acid (and) Palmitic Acid*	Flakes	20-25%	Whitish and shining soft cream
SABOWAX HDC MB	*Cetearyl Alcohol, Ceteareth-3, Ceteareth-20, Ceteareth-30*	Flakes	25-35%	White and shining soft ceam
SABOWAX NP	*Cetearyl Alcohol (and) Ceteareth-30 (and) Cetyl Palmitate (and) Paraffin (and) Glyceryl Stearate*	Flakes	20-25%	White shining viscous cream
SABOWAX TPC	*Cocamide MEA (and) Cetearyl Alcohol (and) Ceteareth-30 (and) Isodecyl Oleate*	Flakes	25-35%	Pearly and ivory cream

GEL-LIKE TEXTURE

Product Name	INCI Name	Appearance	% of use	Final Texture
SABOWAX D	*Propylene Glycol, Laureth-3, Laureth-8, Oleyl Alcohol, PEG-200 Hydrogenated Glyceryl Palmate, PEG-7 Glyceryl Cocoate*	Paste	70-75%	Translucent viscous gel
SABOWAX GEV	*Laureth-10, Laureth-3, PEG-2 Cocamine, Oleyl Alcohol, Ceteareth-50, PEG-200 Hydrogenated Glyceryl Palmate, PEG-7 Glyceryl Cocoate, Sodium Laureth Sulfate*	Paste	35-50%	Translucent viscous gel
SABOWAX LGMMB	*Laureth-3, Isostearic Acid, Glyceryl Stearate Se, Cetearyl Alcohol, Behenyl Alcohol*	Paste	15-25%	Translucent/ opaque viscous pumade-gel

BLEND FOR COLOR ENHANCING

SABO Personal Care offers a **specialized multifunctional blend** for both oxidizing (permanent and demi-permanent) and non-oxidizing (semi-permanent) hair colorings.

In **oxidizing hair coloring**,

1. it **enhances color absorption** for richer tones and protects dyes from premature oxidation, allowing more dye to penetrate the hair cortex.

2. additionally, it provides **conditioning benefits**, reduces hair damage, improves combing resistance, and ensures better color retention and washfastness.

SABOSOF HC2 has a broad pH tolerance, making it ideal for use in

- color bases
- developers
- shampoos or conditioners for color-treated hair.

This versatility ensures effective performance across various hair care applications.

Product Name	INCI Name	Appearance	% of use
SABOFOS HC2	*Oleth-4 Phosphate, Oleyl Phosphate*	Liquid	2-4%

FUNCTIONAL INGREDIENTS FOR TOILETRIES

SABO Personal Care offers a wide range of functional ingredients for toiletries, designed to **enhance the performance and aesthetic of personal care products**. These ingredients play crucial roles in optimizing the texture, appearance, and effectiveness of formulations. Here are some of the key functional ingredients offered:

1. **Lipid Layer Enhancers (Refattening Ingredients)**
2. **Hydrophilic emollients**
3. **Thickening agents**
4. **Pearlizing agents**

LIPID LAYER ENHANCERS (REFATTENING INGREDIENTS)

These ingredients, with their rich lipophilic content, help restore and maintain the skin's natural lipid barrier, which can be washed off during cleansing. They provide moisture, softness, and protection, ensuring the skin stays hydrated and comfortable after use.

Product Name	INCI Name	Appearance	Use Level	Status
SABOSOL PGO MB	*Coco-Glucoside, Glyceryl Oleate*	Viscous Liquid	0,5-5%	Natrue certified
SABOSOL RF MB	*Coco-Glucoside, Squalane, Sodium Surfactin*	Liquid	0,5-5%	Patented

HYDROPHILIC EMOLLIENTS

These liquid emollients

- Contribute to a light, non-greasy, and refreshing skin feel, making products more appealing to consumers.
- They act as co-solubilizers (HE MB and PG4C MB), ensuring homogeneity in aqueous-based products like body washes, shampoos, and facial cleanser can help improve foam quality by modifying bubble size and stability
- Reduce the drying effect of surfactants, preventing post-wash tightness.
- By incorporating them (from 0.5%), toiletries can offer better hydration, sensory appeal, and overall performance, catering to consumer demand for mild and effective personal care products.

Product Name	INCI Name	Application
SABODERM CC MB	*PEG-6 Caprylic/Capric Glycerides*	Micellar water
SABODERM HE MB	*PEG-7 Glyceryl Cocoate*	Shower Gel
SABOCARE® PG4C MB	*Polyglyceryl-4 Caprate*	Body Wash, Micellar

THICKENING AGENTS

Play a crucial role in enhancing the texture, stability, and sensory experience of toiletries. They modify the flow properties of formulations, ensuring optimal consistency, ease of application, and suspension of active ingredients.
Usually added at a concentration of at least 1% and works synergistically with sodium chloride.

Product Name	INCI Name	Appearance
SABODERM SHO MB	*PEG-200 Hydrogenated Glyceryl Palmate, PEG-7 Glyceryl Cocoate*	Liquid

PEARLIZING AGENTS

These ingredients, added from 1%, have the ability to create a **pearlescent** or **milky appearance** in products. This visual effect is highly desirable in formulations like **shower gels**, **body washes**, and **liquid soaps**, where the attractive, shimmering finish enhances the product's appeal.

Depending on the concentration, pH, and other ingredients in the formulation, they can act as opacifiers and/or viscosity builders.

Sabo offers pearlizing agents based on glycols esters and in particular glycol stearate (alone in flake form) or in easy-to-use liquid blends where it is kept in solution by surfactants.

Product Name	INCI Name	Appearance
SABOWAX EGDS MB	*Glycol Distearate*	Flake
SABOPERL 500	*Sodium Laureth Sulfate, Glycol Distearate, Cocamide Mea, Laureth-10*	Liquid
SABOPERL 700	*Cocamidopropyl Betaine, Glycol Distearate, Cocamide Mea, Laureth-10*	Liquid

TOILETRIES
APPLICATION PROPOSAL

HYDROPHILIC EMOLLIENT
SABODERM CC MB
SABODERM HE MB
SABOCARE® PG4C MB

LIPID LAYER ENHANCER
(REFATTENING AGENT)
SABOSOL PGO MB
SABOSOL RF MB

PEARLIZING AGENT
SABOWAX EGDS MB
SABOPERL 500
SABOPERL 700

SOLUBILIZER
SABOCARE® PG4C MB
SABOSOL RF MB
SABOSORB MLE MB
SABOSORB MOE MB
SABOWAX EL-H 40
SABOWAX EL-H 40/L
SABOWAX EL-H 60/L

SURFACTANTS
SABOCARE® APG 818 MB
SABOCARE® APG 1200 MB
SABOCARE® APG 2000 MB

THICKENING AGENT
SABODERM SHO MB

TEXTURIZING POWDERS

Texturizing powders in cosmetics are specialized ingredients that primarily serve to modify the tactile and visual properties of formulations. They are employed to enhance product performance in both skin and hair care, as well as in makeup. Here are the main technical applications of texturizing powders in cosmetics:

1. **Oil absorption and sebum control**: powders like silica and talc absorb excess oil, controlling shine and helping mattify the skin, especially in oil-free foundations, setting powders, and mattifying products.

2. **Texture enhancement**: they improve the tactile feel of products, contributing to a smooth or velvety texture in foundations, primers, and blushes, enhancing user experience.

3. **Light diffusion**: powders like mica provide optical blurring, minimizing the appearance of fine lines, pores, and imperfections, often used in hd makeup for a soft-focus effect.

4. **Hair texture and volume**: in hair products, they add volume and texture, providing a matte finish and grip, ideal for dry shampoos and volumizing powders.

5. **Viscosity and consistency control**: texturizing powders adjust the viscosity of formulations, ensuring proper application and product stability in creamy or gel-based products.

SABO offers a natural alternative to synthetic organic and inorganic sensory enhancers and talc: SABOSOFT RP.

SABOSOFT RP

Locally sourced, with a low microbial count, non-gamma irradiated (NOI=1), made from upcycled broken rice and centrifuged rice milk.
INCI name: *Oryza Sativa (Rice) Starch*
Use Level: from 0.5%

TECHNICAL CHARACTERISTICS

- Fine loose white odourless powder
- Almost spherical particle shape
- Very small particle size
- Good oil absorption 70-90g of oil /100g
- Density: 550-600 g/L
- Concentration of use: 1-5%

FORMULATION

- Emulsions
- Hydro or Lipogels
- Anhydrous formulations
- Detergents
- Hot pours
- Pressed or Loose Powders

FUNCTION

- Mineral and talc substitute
- Texturizer: reduce greasiness and stickiness of formulations
- Mattifier
- Soft focus
- Velvety-powdery soft skin feel
- Opacifier (toiletries & gels)
- Improves pay-off and reduce bleeding
- Boostes creaminess of foam
- Sebum/dirt absorption
- Soothing agent

APPLICATION

- Face Care
- Body Care
- Hair Care
- Toiletries (liquid, powder or solid)
- Sun Care
- Color Cosmetics

OIL ABSORPTION CAPACITY OF SABOSOFT RP

Product Name	INCI Name	Wet Point (g)*	Flow Point (g)*
SABODERM CVC MB	*Coco-Caprylate/Caprate*	0,83	2,01
SABODERM DOE MB	*Dicaprylyl Ether*	0,85	1,98
SABODERM ISN	*Isononyl Isononanoate*	0,87	1,70
SABODERM MLC MB	*Myristyl Lactate*	0,86	1,55
SABODERM TCC MB	*Caprylic/Capric Triglyceride*	0,82	1,96

*For detailed procedures, refer to page 8.

FILMING AGENTS

Film formers in cosmetics create a thin, flexible layer on the skin, hair, or nails, enhancing long-wear performance, water resistance, and active ingredient retention.

They are used to:

- **Improve durability** (long-wear) in sunscreens, makeup, and skincare.
- Enhance **water resistance** in sun care and waterproof formulations.
- Provide **transfer resistance** and enhance **smudge-proof** in color cosmetics.
- **Boost adhesion** of pigments and UV filters.
- **Hair film formers.**

They can be hydrophilic or lipophilic, depending on the formulation needs, ensuring optimal performance and sensory benefits.

SABO Personal Care offers on lipophilic filming agent SABODERM PDA MB.

SABODERM PDA MB

INCI NAME *Dilinoleic Acid/Propanediol Copolymer*
Aspect Viscous liquid
Use Level From 0.5%

Natural liposoluble film former for **sun care**, **color cosmetics** and **hair care**.

100% vegetable-based polyester copolymer derived from 1,3-propanediol, sourced from the fermentation of biofuel residues.

This **lipophilic film-former** is designed to work synergistically with oils and emollients, giving you the freedom to adjust the final product's sensory profile. Whether you're looking for a lightweight feel or a richer texture, SABODERM PDA MB offers **versatility**, ensuring the perfect balance of performance and user experience.

TECHNICAL CHARACTERISTICS

- **Refractive index**: 1480 (high)
- **Viscous liquid:** 20000 mPa·s

FORMULATIONS

- Emulsions
- Anhydrous formulations (solid or liquid)
- Pressed powders

FUNCTIONS

- Film former
- Glossing agent (radiant effect)
- Water resistance
- Long lasting
- No-transfer

APPLICATIONS

Lip Products (lipstick, lip rouge, lip gloss, lip balm, lip tint, lip oil)

- Eye Contour Products
- Color Cosmetics
- Hair (Conditioner, UV Protection, Repairing Products)
- Primers
- Skin Care with illuminating claim
- Suncare

ORGANIC UV FILTERS

UV filters are ingredients that filters certain UV rays in order to protect the skin of the hair from harmful effects of these rays and help prevent sunburn, premature aging, and long-term skin damage.

They are classified into two main categories

1. **Inorganic UV filters**: Zinc oxide and Titanium dioxide, that reflect, scatter and/or absorb UV light
2. **Organic UV filters**: convert UV rays into harmless heat

Organic UV filters are essential components of modern suncare formulations.

At SABO, we are committed to delivering high-performance organic UV filters through our SABOCARE® UV range.

Together with emollients, emulsifiers and skin actives, SABO now offers three **oil soluble organic UV filters** for sunscreen formulations: efficient, photostable, with photostabilizing effect of other UV filters and poor skin absorption.

By integrating SABOCARE® UV filters into your formulations, you can achieve enhanced sun protection while ensuring compliance with evolving industry standards.

SABOCARE® UV RANGE

The SABOCARE® UV range consists of three organic UV filters, each differing in chemistry and UV filtering properties. All three filters are **liposoluble** and **available in powder form**. They require solubilization in suitable lipophilic emollients (see page 5 - 6 for details).

Product Name	INCI Name	Filtered UV	Max % of Use (EU)*	Main Characteristics
SABOCARE® UV BMT	*Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine (USAN NAME: Bemotrizinol)*	UVA-UVB (broad spectrum)	10	• Among the UVA-UVB (broad-spectrum) UV filters, it is the most powerful • Especially recommended for formulating sunscreens which shall meet the requirements of UVA/UVB balance due to its broad-spectrum absorption • Photostable • Stabilizes *Avobenzone* (act as quencher stabilizing the triplet state and reducing its photodecay) and EHM
SABOCARE® UV DHHB	*Diethylamino Hydroxybenzoyl Hexyl Benzoate*	UVA (especially UVAI)	10	• Strong UVA filter whose stability in the sun is much better than *Avobenzone* • It is compatible with all UVB filters on the market and is compatible with zinc oxide and iron oxides, which makes it fit for purpose in hybrid formulations • Stabilizes BMT, EHT and DBT
SABOCARE® UV EHT	*Ethylhexyl Triazone*	UVB	5	• Good photostability and low skin penetration • UV filter with the highest UVB filtering power in the market

* UV filter regulations vary by country, and permitted concentrations may differ. The SABOCARE® UV range is not allowed in certain regions, such as the USA.

ACTIVE INGREDIENTS

SABO Personal Care provides one **clinically validated**, highly natural ingredient.

SABOSOL RF MB (PATENTED)

- After-cleansing barrier effect (skin lipid layer enhancer)
- Solubilizing agent
- Sensory booster for toiletries

SABOSOL RF MB (PATENTED)

INCI NAME *Coco-Glucoside, Squalane, Sodium Surfactin*
Aspect Clear Liquid
Use Level From 2% for barrier effect (TEWL reduction). From1:3 (solute: SABOSOL Rf MB for solubilization)
Preservative Sodium Benzoate and Potassium Sorbate

SOLUBILIZING AGENT

A multifunctional, natural, and effective solubilizing blend composed of

- **Phyto-squalane**: a biomimetic skin lipid that also serves as an effective hair conditioning agent, coating and smoothing the hair shaft to enhance softness, shine, and overall health.
- **Coco-glucoside**: A powerful solubilizer with exceptional performance while remaining gentle on the skin.
- **Surfactin**: a potent biotechnological peptidic surfactant.

Its **solubilizing performance**

- is comparable to **Polysorbates and PEG-40 Hydrogenated Castor Oil**, making it particularly effective for perfumes.
- comes from the **synergy** of two powerful solubilizers (coco-glucoside and surfactin) combined with phyto-squalane, which enhances the process by leveraging the "like dissolves like" principle for lipophilic components.

LIPID LAYER ENHANCER

Cleansing the skin removes its natural and essential lipidic layer. To counteract this, lipid layer enhancers play a crucial role in skincare, shower, bath, and baby products by helping to maintain the skin's natural barrier and preventing dryness. SABOSOL RF MB stands out as an effective lipid layer enhancer and superfatting agent, **preserving the skin's hydration and reinforcing its protective barrier**.

SENSORY BOOSTER FOR TOILETRIES

SABOSOL RF MB functions as a sensory booster for toiletries by enriching formulations with a soft, velvety afterfeel. Its ability to restore lipids improves skin suppleness, leaving a nourished, **comfortable sensation after washing**, making it ideal for mild and moisturizing cleansing products.

It can be used in:

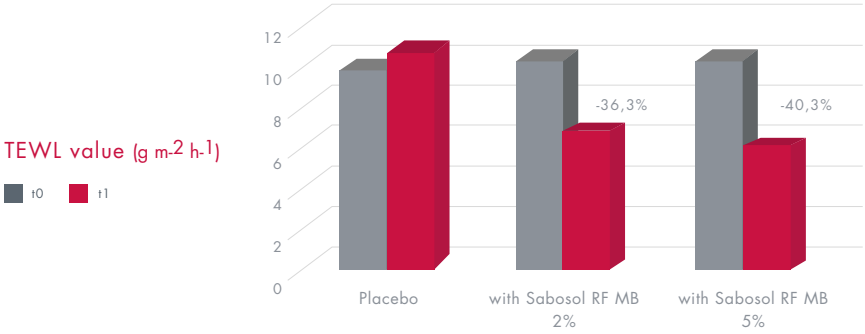
- Detergents (liquid or solid)
- Water-based formulations e.g. toners, mist
- Emulsions (as active co-surfactant)
- Toiletries
- Micellar water
- Perfumed water
- Wet wipes
- Skin Care, Hair Care, Scalp Care products

SABOSOL RF MB's tests

1. ARM WASH TEST: BARRIER EFFECT (TEWL REDUCTION)

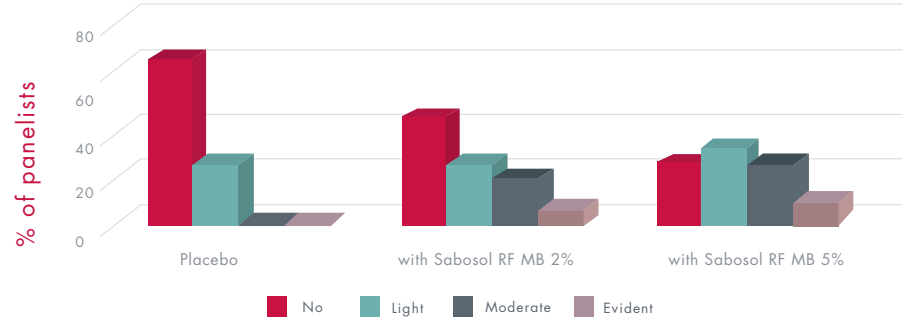
Fifteen trained panelists evaluated seven sensory attributes on a scale of 0 to 5. **Results**: starting from a 2% concentration, panelists reported a noticeable reduction in dryness and improvements in other evaluated attributes.

Commercial name	INCI Name	PLACEBO	FORMULATION with 2% of RF MB	FORMULATION with 5% of RF MB
-	*Sodium Laureth Sulfate*	14,14	14,4	14,4
-	*Cocamidopropyl Betaine*	4,8	4,8	4,8
-	*Sodium Lauroyl Sarcosinate*	7,7	7,7	7,7
SABOSOL RF MB	*Coco-Glucoside, Squalane, Sodium Surfactin*	**0**	**2**	**5**
SABODERM SHO MB	*PEG-200 Hydrogenated Glyceryl Palmate, PEG-7 Glyceryl Cocoate*	**2**	**2**	**2**
-	*Aqua*	to 100%	to 100%	to 100%
-	*Preservative*	0,1	0,1	0,1
-	*Sodium Chloride*	1,8	1,8	1,8



2. SELF-ASSESSMENT EVALUATION: PERCEIVED EMOLLIENCY

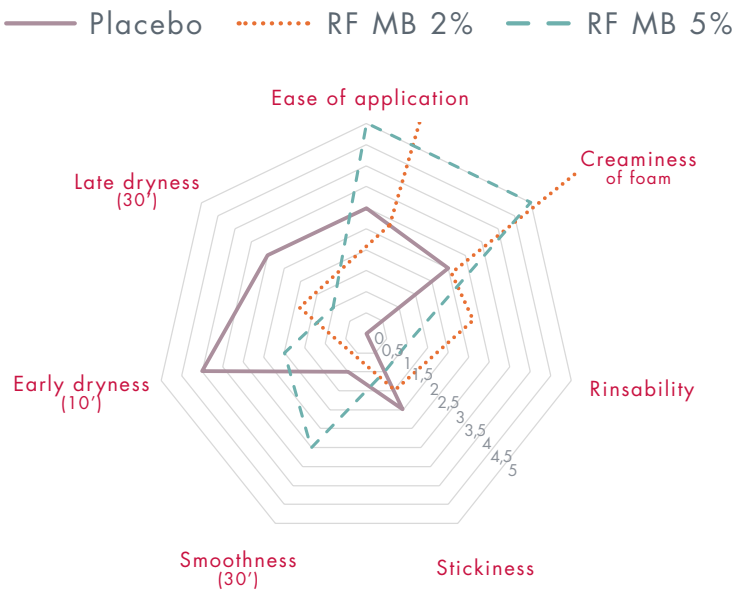
Fifteen trained panelists assessed the perceived emolliency using four options: none, light, moderate, or evident. **Results**: starting from a 2% concentration, panelists perceived emolliency after rinsing.



3. DESCRIPTIVE ANALYSIS: RADAR CHART

Fifteen trained panelists were instructed to rate seven sensory attributes on a scale of 0 to 5. **Results**: starting from a 2% concentration, panelists reported a decrease in dryness and an improvement in the other attributes they were asked to evaluate.

	Attribute	Description	Low	High
Rub-out	**Ease of application**	How easy it is to apply the product to the skin	0	5
	Creaminess of foam	How creamy the foam is during use	0	5
	Rinsability	How easily the product can be rinsed off the skin	0	5
After-feel	**Stickiness**	The level of stickiness or residue left on the skin after use	0	5
	Early dryness (10')	How the skin feels dry 10 minutes after application	0	5
	Late dryness (30')	How the skin feels 30 minutes after application	0	5
	Smoothness (30')	The smoothness of the skin 30 minutes after application	0	5



PRODUCT LIST
BY TRADE NAME

Trade Name	INCI Name (EU)	RSPO MB	COSMOS	ISO16128 (NOI)**	ISO16128 (NOC)**	Function (Main)	Family***
SABOCARE® APG 818 MB	*Coco-Glucoside*	●		1		Surfactant	Emulsifier
SABOCARE® APG 2000 MB	*Decyl Glucoside*	●		1		Surfactant	Emulsifier
SABOCARE® APG 1200 MB	*Lauryl Glucoside*	●		1		Surfactant	Emulsifier
SABOCARE® GMS-SE MB	*Glyceryl Stearate SE*	●	●	1		Emulsifying blend	Emulsifier
SABOCARE® PG4C MB	*Polyglyceryl-4 Caprate*	●	●	1		Solubilizer	Emulsifier
SABOCARE® PGS	Polyglyceryl-4 Stearate			1		Co-emulsifier	Emulsifier
SABOCARE® UV BMT	*Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine*			0		UVA-UVB filter	Other
SABOCARE® UV DHHB	*Diethylamino Hydroxybenzoyl Hexyl Benzoate*			0		UVA filter	Other
SABOCARE® UV EHT	*Ethylhexyl Triazone*			0		UVB filter	Other
SABOCARE® WL MB	*Cetearyl Alcohol (and) Sodium Lauryl Sulfate*	●	●		97,0%	Emulsifying blend	Blend
SABODERM AB	*C12-15 Alkyl Benzoate*			0		Lipophilic emollient	Emollient
SABODERM CC MB	*PEG-6 Caprylic/Capric Glycerides*	●		0		Lipophilic emollient	Emollient
SABODERM CSN MB	*Cetearyl Isononanoate*	●		0,65		Lipophilic emollient	Emollient
SABODERM CSO MB	*Cetearyl Ethylhexanoate*	●		0,68		Lipophilic emollient	Emollient
SABODERM CVC MB	*Coco-Caprylate/Caprate*	●	●	1		Lipophilic emollient	Emollient
SABODERM DBA	*Dibutyl Adipate*			0		Lipophilic emollient	Emollient
SABODERM DISM	*Diisostearyl Malate*			0		Lipophilic emollient	Emollient
SABODERM DOE MB	*Dicaprylyl Ether*	●	●	1		Lipophilic emollient	Emollient
SABODERM G 20	*Octyldodecanol*			0		Lipophilic emollient	Emollient
SABODERM HE MB	*PEG-7 Glyceryl Cocoate*	●		0,52		Hydrophilic emollient	Emollient
SABODERM ISN	*Isononyl Isononanoate*			0		Lipophilic emollient	Emollient
SABODERM MLC MB	*Myristyl Lactate*	●	●	1		Lipophilic emollient	Emollient
SABODERM ODM MB	*Octyldodecyl Myristate*	●		0		Lipophilic emollient	Emollient
SABODERM OP MB	*Ethylhexyl Palmitate*	●		0,67		Lipophilic emollient	Emollient

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*** Categorized by Customer Area (as per the SABO website) - not based on application.

Trade Name	INCI Name (EU)	RSPO MB	COSMOS	ISO16128 (NOI)**	ISO16128 (NOC)**	Function (Main)	Family***
SABODERM OS MB	*Ethylhexyl Stearate*			0,68		Lipophilic emollient	Emollient
SABODERM PDA MB*	*Dilinoleic Acid/Propanediol Copolymer*			1		Filming agent	Emollient
SABODERM PGDD/PH	*Propylene Glycol Dicaprylate/Dicaprate*			0,85		Lipophilic emollient	Emollient
SABODERM SHO MB	*PEG-200 Hydrogenated Glyceryl Palmate (and) PEG-7 Glyceryl Cocoate*				43,0%	Thickening agent	Blend
SABODERM TCC MB	*Caprylic/Capric Triglyceride*			1		Lipophilic emollient	Emollient
SABOFOS HC2*	*Oleth-4 Phosphate, Oleyl Phosphate*				78,0%	Color enhanncing blend	Blend
SABOPERL 500	Glycol Distearate (and) Sodium Laureth Sulfate (and) Cocamide MEA (and) Laureth-10				80,0%	Pearlizing agent	Blend
SABOPERL 700	*Cocamidopropyl Betaine (and) Glycol Distearate (and) Cocamide MEA (and) Laureth-10*				87,0%	Pearlizing agent	Blend
SABOSOFT RP	*Oryza Sativa (Rice) Starch*			1		Texturizing powder	Emollient
SABOSOL PGO MB	*Coco-Glucoside (and) Glyceryl Oleate*				100,0%	Lipid-layer enhancer	Blend
SABOSOL RF MB	*Coco-Glucoside (and) Squalane (and) Sodium Surfactin*				98,0%	Lipid-layer enhancer	Blend
SABOSORB MLE MB	*Polysorbate 20*			0		Surfactant	Emulsifier
SABOSORB MOE MB	*Polysorbate 80*			0		Surfactant	Emulsifier
SABOSORB MSE MB	*Polysorbate 60*			0		Surfactant	Emulsifier
SABOSORB MS-P MB	*Sorbitan Stearate*			1		Surfactant	Emulsifier
SABOWAX AE MB	*Glyceryl Stearate (and) Ceteareth-20 (and) Ceteareth-12 (and) Cetearyl Alcohol (and) Cetyl Palmitate*				70,0%	Emulsifying blend	Blend
SABOWAX AO MB	*Cetearyl Alcohol (and) Ceteareth-30*				80,0%	Emulsifying blend	Blend
SABOWAX B 25	*Beheneth-25*			0		Emulsifier	Emulsifier
SABOWAX CP MB	*Cetyl Palmitate*			1		Lipophilic emollient	Emulsifier
SABOWAX CS 6 MB	*Ceteareth-6*			0		Emulsifier	Emulsifier
SABOWAX CS 20 MB	*Ceteareth-20*			0		Emulsifier	Emulsifier
SABOWAX CS 25 MB	*Ceteareth-25*			0		Emulsifier	Emulsifier
SABOWAX CS 30 MB	*Ceteareth-30*			0		Emulsifier	Emulsifier

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Trade Name	INCI Name (EU)	RSPO MB	COSMOS	ISO16128 (NOI)**	ISO16128 (NOC)**	Function (Main)	Family***
SABOWAX CSM*	*Cetearyl Alcohol (and) Beheneth-25 (and) Beheneth-10 (and) Lauryl Alcohol (and) Dicaprylyl Ether*				70,0%	Emulsifying blend	Blend
SABOWAX D	*Propylene Glycol (and) Laureth-3 (and) Laureth-8 (and) Oleyl Alcohol (and) PEG-200 Hydrogenated Glyceryl Palmate (and) PEG-7 Glyceryl Cocoate*				24,0%	Emulsifying blend	Blend
SABOWAX EGDS MB	*Glycol Distearate*	🟡		0,95		Pearlizing agent	Emulsifier
SABOWAX EL-H 40	*PEG-40 Hydrogenated Castor Oil*			0		Solubilizer	Emulsifier
SABOWAX EL-H 40/L	*PEG-40 Hydrogenated Castor Oil*				9,5%	Solubilizer	Emulsifier
SABOWAX EL-H 60/L	*PEG-60 Hydrogenated Castor Oil*				9,0%	Solubilizer	Emulsifier
SABOWAX FL 1 MB	*Cetearyl Alcohol (and) Lauryl Alcohol (and) Ceteareth-20 (and) Ceteareth-30*	🟡			70,0%	Emulsifying blend	Blend
SABOWAX FL 2 MB	*Cetearyl Alcohol (and) Ceteareth-30 (and) Cetearyl Ethylhexanoate*	🟡			67,0%	Emulsifying blend	Blend
SABOWAX FL 10 MB	*Cetearyl Alcohol (and) Ceteareth-20*	🟡			80,0%	Emulsifying blend	Blend
SABOWAX FL 20 MB	*Cetearyl Alcohol (and) PEG-20 Stearate*	🟡			80,0%	Emulsifying blend	Blend
SABOWAX FL 65/K MB	*Glyceryl Stearate (and) PEG-100 Stearate*	🟡			53,0%	Emulsifying blend	Blend
SABOWAX G 40 MB	*Glyceryl Stearate*	🟡	🟢	1		Co-emulsifier	Emulsifier
SABOWAX GEV	*Laureth-10, Laureth-3, PEG-2 Cocamine, Oleyl Alcohol, Ceteareth-50, PEG-200 Hydrogenated Glyceryl Palmate, PEG-7 Glyceryl Cocoate, Sodium Laureth Sulfate*				35,0%	Emulsifying blend	Blend
SABOWAX HA	*Cetearyl Alcohol (and) Ceteareth-25 (and) Cocamide MEA (and) Myristyl Alcohol (and) Stearic Acid (and) Palmitic Acid*				80,0%	Emulsifying blend	Blend
SABOWAX HCO	*Hydrogenated Coconut Oil*			1		Lipophilic emollient	Emollient
SABOWAX HDC MB	*Cetearyl Alcohol, Ceteareth-3, Ceteareth-20, Ceteareth-30*	🟡			73,0%	Emulsifying blend	Blend
SABOWAX LGM MB	*Laureth-3 (and) Isostearic Acid (and) Glyceryl Stearate SE (and) Cetearyl Alcohol (and) Behenyl Alcohol*	🟡			86,5%	Emulsifying blend	Blend
SABOWAX LMT 10 MB	*Laureth-10*	🟡		0		Emulsifier	Emulsifier
SABOWAX NP*	*Cetearyl Alcohol (and) Ceteareth-30 (and) Cetyl Palmitate (and) Paraffin (and) Glyceryl Stearate*				63,5%	Emulsifying blend	Blend
SABOWAX O 20	*Oleth-20*			0		Emulsifier	Emulsifier
SABOWAX PIS	*PEG-30 Dipolyhydroxystearate*			0		W/O emulsifier	Emulsifier
SABOWAX SE 40 MB	*PEG-40 Stearate*	🟡		0		O/W emulsifier	Emulsifier
SABOWAX ST 2 MB	*Steareth-2*	🟡		0,82		Co-emulsifier	Emulsifier
SABOWAX ST 21 PL MB	*Steareth-21*	🟡		0		Emulsifier	Emulsifier
SABOWAX TPC	*Cocamide MEA (and) Cetearyl Alcohol (and) Ceteareth-30 (and) Isodecyl Oleate*				75,0%	Emulsifying blend	Blend

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NOTES

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Edition 03/2026 - 5th Version

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