



Stephenson

Durosoft[®]

Naturally different.

Naturally derived polyglyceryl esters



Navigation



Introducing Durosoft®

Naturally different.

Durosoft® is a range of naturally derived polyglyceryl esters, developed to aid the demand for natural products and “green chemistries”, across a wide variety of personal care and cosmetic applications.

The Durosoft® range of natural ingredients is the starting point for creating or adapting your own personal care range

Our growing portfolio of personal care ingredients, Durosoft®, currently includes sustainable emulsifiers and solubilisers, that can be used for the production of creams, solid lotions and cleansing oils, micellar water formulations and other skincare and cosmetic products offering specific value for natural and sustainable raw material claims.



Durosoft key features

What customers value when formulating with Durosoft, is its COSMOS approved and sustainable credentials as RSPO Segregated (using sustainable palm oil) or alternative high quality oils (rapeseed and sunflower).

Durosoft® provides customers with the opportunity to develop naturally derived product applications across skin care, hair care, soap and bath, sun care and many other categories.

- » Sustainably sourced ingredients
- » COSMOS approved
- » Vegan
- » EO free
- » PEG free
- » Gluten Free
- » Prop 65 compliant
- » REACH compliant
- » Electrolyte tolerant
- » Natural origin index of 1 according to ISO 16128

Durosoft product applications



Durosoft HLB Range

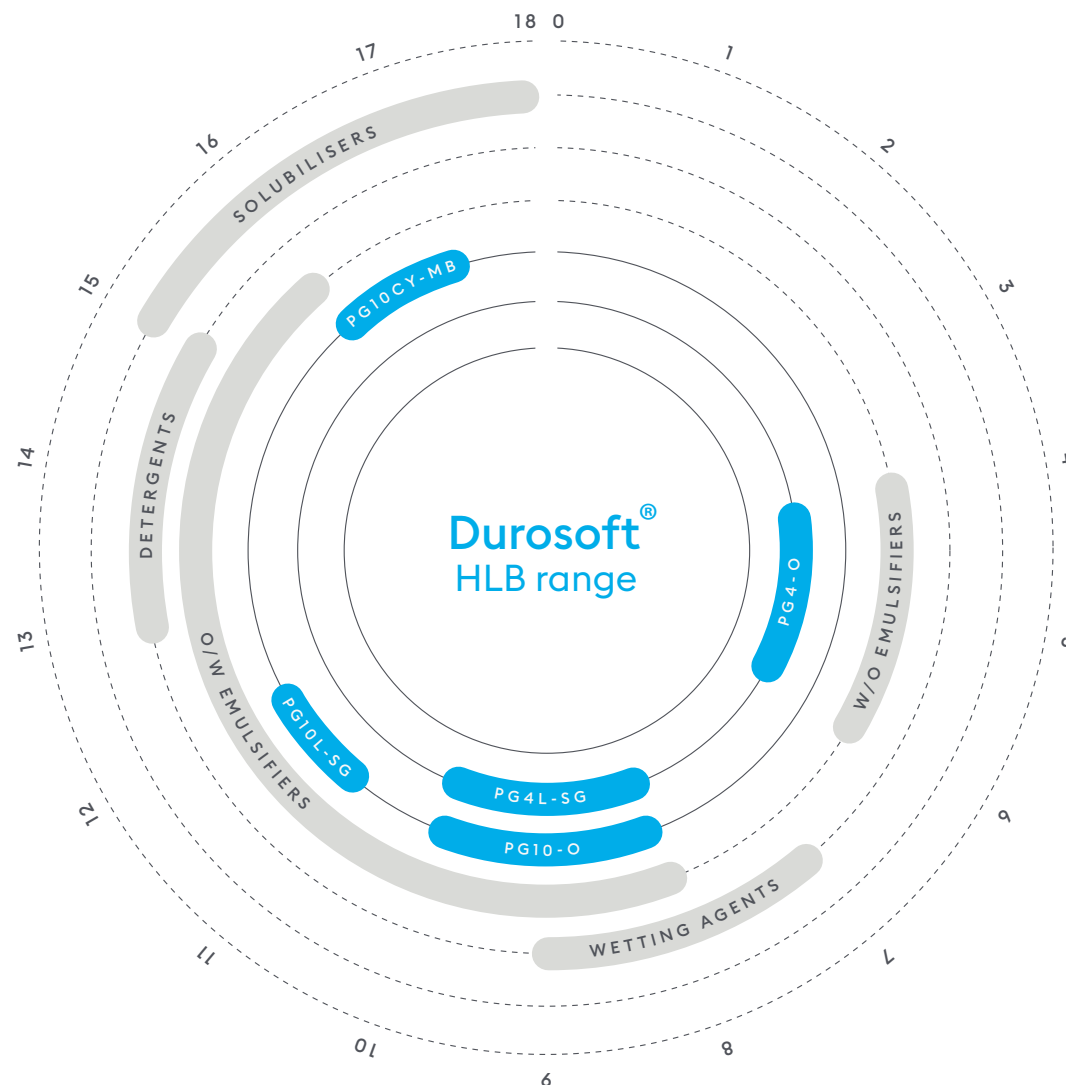
The Hydrophilic-Lipophilic Balance (HLB) scale (0 to 20) indicates the size and strength of the hydrophilic and lipophilic moieties of a surfactant molecule.

Therefore, in a range of 3.5 to 6.0, surfactants are more suitable for use in W/O emulsions, whereas surfactants ranging from 8-18 are more suited to O/W emulsions.

The blue labels show Durosoft ingredients, while grey labels show ingredient functions to aid the right component choice when formulating.

HLB Value

Durosoft® PG4-O	4-6
Durosoft® PG4L-SG	8-10
Durosoft® PG10-O	8-10
Durosoft® PG10L-SG	11-12
Durosoft® PG10CY-MB	16-17



Discover the Durosoft® range

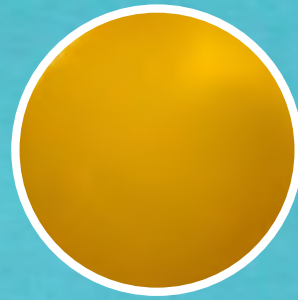
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Durosoft®
PG4-O



Durosoft®
PG4L-SG



Durosoft®
PG10-O



Durosoft®
PG10L-SG



Durosoft®
PG10CY-MB



Durosoft PG4-O

Polyglyceryl-4 Oleate

Durosoft PG4-O is a water-in-oil emulsifier perfect for creating thick formulations with low oil content that easily break in application such as barrier creams, night creams and in sun protection products.

Durosoft PG4-O is naturally derived from sunflower seed oil, its lipophilic properties make it ideal for use in transparent and water free formulations such as oil cleansers, massage oils and solid moisturising bars.

Product features

INCI	Polyglyceryl-4 Oleate
Function	W/O Emulsifier
HLB Value	4-6
Usage	5.0 - 15.0%



Product applications



- » COSMOS approved
- » China compliant
- » W/O emulsifier
- » Emollient
- » Naturally derived
- » Skin and eye friendly
- » Preservative free
- » Ethoxylate free
- » GMO free
- » PEG free
- » Vegan
- » Dermatologically tested

Durosoft PG4L-SG

Polyglyceryl-4 Laurate

Durosoft PG4L-SG is an RSPO Segregated oil-in-water emulsifier suitable for the preparation of low viscosity cosmetic creams and lotions which distribute easily on the skin.

It is naturally derived from RSPO Segregated palm kernel oil and creates emulsions with a light feel on the skin allowing a formulator to easily change the sensory of a formulation by adding sensory modifiers.

Product features



INCI	Polyglyceryl-4 Laurate
Function	O/W Emulsifier
HLB Value	8-10
Usage	3.0 - 8.0%



Product applications



- » COSMOS approved
- » RSPO certified
- » China compliant
- » O/W emulsifier
- » Naturally derived
- » Skin and eye friendly
- » Preservative free
- » Ethoxylate free
- » GMO free
- » PEG free
- » Vegan
- » Dermatologically tested

Durosoft PG10-O

Polyglyceryl-10 Oleate

Durosoft PG10-O is an emulsifier, naturally derived from sunflower seed oil. It allows formulators to make stable oil-in-water creams and lotions with a pleasant skin feel.

Durosoft PG10-O has gelling properties which give unique sensory and texture in skin care applications. The lipophilic attributes from the oleic acid chain give added emollience and moisturisation benefits particularly in skin and hair care formulations.

Product features

INCI	Polyglyceryl-10 Oleate
Function	O/W Emulsifier
HLB Value	8-10
Usage	1.0 - 20.0%



Product applications



- » COSMOS approved
- » China compliant
- » O/W emulsifier
- » Emollient
- » Naturally derived
- » Skin and eye friendly
- » Preservative free
- » Ethoxylate free
- » GMO free
- » PEG free
- » Vegan
- » Dermatologically tested

Durosoft PG10L-SG

Polyglyceryl-10 Laurate

Durosoft PG10L-SG is an RSPO segregated oil-in-water emulsifier, perfect for creating creams and lotions with a pleasant and soft skin feel. It is naturally derived from RSPO segregated palm kernel oil and is an effective cleansing agent recommended for mild rinse off applications particularly facial cleansers and body washes.

This skin and eye friendly cleanser can gently remove make up, dirt and oil from the face and body.

Product features



INCI	Polyglyceryl-10 Laurate
Function	O/W Emulsifier
HLB Value	11-12
Usage	1.0 - 20.0%



Product applications



- » COSMOS approved
- » RSPO certified
- » China compliant
- » O/W emulsifier
- » Naturally derived
- » Skin and eye friendly
- » Preservative free
- » Ethoxylate free
- » GMO free
- » PEG free
- » Vegan
- » Dermatologically tested

Durosoft PG10CY-MB

Polyglyceryl-10 Caprylate

Durosoft PG10CY-MB is an effective non-ionic solubiliser of fragrances, essential oils and lipophilic oils into water-based systems. It is derived from RSPO Mass Balanced palm kernel oil, and is a natural alternative to commonly used petrochemically derived solubilisers such as PEG-40 Hydrogenated Castor Oil and Polysorbate-20.

Durosoft PG10CY-MB is a powerful cleansing agent and can be used in a wide variety of applications from liquid soaps and shower gels to shampoos and micellar waters.

Product features



INCI	Polyglyceryl-10 Caprylate
Function	O/W Emulsifier
HLB Value	16-17
Usage	1.0 - 20.0%



Product applications



- » COSMOS approved
- » RSPO certified
- » Solubiliser
- » Naturally derived
- » Preservative free
- » Ethoxylate free
- » GMO free
- » PEG free
- » Vegan

Sustainable Ingredients

Identifying Sustainable Palm Oil

Palm oil is one of the most widely consumed vegetable oils in the world. It is versatile, easy to process and yields 4–10 times more oil per hectare of land than other crops such as sunflower, rapeseed and coconut.

At present 80% of palm oil in the global supply chain comes from non-certified production.

Benefits of RSPO

- » Minimises negative impact on the environment
- » Aids conservation
- » Protects indigenous communities
- » Ensures fair labour practises
- » Empowers consumers to make informed choices
- » Aids poverty reduction

70%

of personal care and cosmetics products contain palm oil or palm oil derivatives

19%

of palm oil globally is certified by the RSPO

Why sustainable?



RSPO credits



CLAIM



TRACEABILITY



Untraced palm oil with a trading scheme to support equivalent certified sustainable production.

MINIMUM STANDARD

The minimum when the other two options are not available.



Mass Balance (MB)



CLAIM



TRACEABILITY



A mix of certified and uncertified palm oil - this is a temporary solution for when the best is not available.

INTERIM OPTION

“Contributes to the production of certified sustainable palm oil”



Segregated (SG)



CLAIM



TRACEABILITY



Certified palm oil that is sustainable, fully traceable and meets the RSPO's standards.

100% SUSTAINABLE

Companies should aim for this standard.

DUROSOFT FEATURED FORMULATION

Lotion Base

(RSPO Mass Balance)



Product used **Durosoft PG10L-SG**

Method

- » Disperse xanthan gum into water and stir until hydrated
- » Add remaining stage A ingredients to batch and heat to 90°C
- » Premix stage B ingredients and heat separately to 90°C
- » Add stage B ingredients slowly to stage A while homogenising at 9000rpm
- » Stir slowly until cool
- » Premix stage C and add to batch below 40°C
- » Adjust pH to 5.0 – 5.5

INGREDIENT	INCI	FUNCTION	STAGE	%W/W
Water	Aqua	Solvent	A	60.9
Durosoft PG10L-SG	Polyglyceryl-10 Laurate	Emulsifier	A	6.8
Glycerine (Rapeseed)	Glycerine	Moisturiser/emollient	A	2.0
Xanthan Gum	Xanthan Gum	Thickener	A	0.3
CCTG (Coconut)	Caprylic/capric Triglyceride	Emollient/moisturiser	B	8.0
Sweet Almond Oil	Prunus Amygdalus Dulcis (Sweet Almond) Oil	Softens and nourishes	B	0.5
Vitamin E	Tocopherol	Antioxidant	B	0.5
Camelina Oi	Camelina Sativa Seed (Camelina) Oil	Anti-inflammatory/emollient	B	2.0
Palm Kernel Oil-SG	Elaeis Guineensis (Palm) Kernel oil	Rich in antioxidants	B	4.0
Palm Stearin-SG	Palm Stearin	Thickener/emollient	B	6.0
GML	Glyceryl Laurate	Emollient	B	1.6
GMS	Glyceryl Stearate	Thickener/emollient	B	2.1
Water	Aqua	Solvent	C	4.0
Paratexin KS	Potassium Sorbate	Preservative	C	0.3
Sodium Benzoate	Sodium Benzoate	Preservative	C	1.0

DUROSOFT FEATURED FORMULATION

Cream Base

(RSPO Mass Balance)



Product used **Durosoft PG10L-SG**

Method

- » Disperse xanthan gum into water and stir until hydrated
- » Add remaining stage A ingredients to batch and heat to 90°C
- » Premix stage B ingredients and heat separately to 90°C
- » Add stage B ingredients slowly to stage A while homogenising at 9000rpm
- » Stir slowly until cool
- » Premix stage C and add to batch below 40°C
- » Adjust pH to 5.0 – 5.5

INGREDIENT	INCI	FUNCTION	STAGE	%W/W
Water	Aqua	Solvent	A	53.7
Durosoft PG10L-SG	Polyglyceryl-10 Laurate	Emulsifier	A	3.5
Glycerine (Rapeseed)	Glycerine	Moisturiser/emollient	A	2.0
Xanthan Gum	Xanthan Gum	Thickner	A	0.3
CCTG (Coconut)	Caprylic/capric Triglyceride	Emollient/moisturiser	B	8.0
Sweet Almond Oil	Prunus Amygdalus Dulcis (Sweet Almond) Oil	Softens and nourishes	B	0.5
Vitamin E	Tocopherol	Antioxidant	B	0.5
Camelina Oil	Camelina Sativa Seed (Camelina) Oil	Anti-inflammatory/emollient	B	3.0
Palm Kernel Oil-SG	Elaeis Guineensis (Palm) Kernel oil	Rich in antioxidants	B	5.0
Palm Stearin-SG	Palm Stearin	Thickener/emollient	B	6.0
Sunflower Seed wax	Helianthus Annuus Seed Cera	Thickener/emollient	B	4.0
GML-SG	Glyceryl Laurate	Emollient	B	2.0
GMS	Glyceryl Stearate	Thickener/emollient	B	6.2
Water	Aqua	Solvent	C	4.0
Paratexin KS	Potassium Sorbate	Preservative	C	0.3
Sodium Benzoate	Sodium Benzoate	Preservative	C	1.0

DUROSOFT FEATURED FORMULATION

Lotion Base

Product used **Durosoft PG10-O**



Method

- » Disperse Durosoft PG10-O in water and heat to 90°C
- » Premix stage B ingredients and heat separately to 90°C
- » Add stage B ingredients slowly to stage A while homogenising at 9000rpm
- » Stir slowly until cool
- » Premix stage C and add to batch below 40°C
- » Adjust pH to 5.0 – 5.5

INGREDIENT	INCI	FUNCTION	STAGE	%W/W
Water	Aqua	Solvent	A	60.0
Durosoft PG10-O	Polyglyceryl-10 Oleate	Emulsifier	A	6.1
CCTG (Coconut)	Caprylic/capric Triglyceride	Emollient/moisturiser	B	5.0
Sweet Almond Oil	Prunus Amygdalus Dulcis (Sweet Almond) Oil	Softens and nourishes	B	0.5
Vitamin E	Tocopherol	Antioxidant	B	0.5
High Oleic Sunflower Oil	Helianthus Annuus (Sunflower) Seed Oil	Moisturiser/emollient	B	10.0
Shea Butter	Butyrospermum Parkii (Shea) Butter	Rich in antioxidants	B	4.0
KKH NatWax Alt 0155	Oryza Sativa (Rice) Bran Wax, C30-45 Olefin	Thickener	B	3.0
Myrica Wax	Myrica Cerifera (Bayberry) Fruit Wax	Thickener/sensory enhancer	B	3.0
GMS	Glyceryl Stearate	Thickener/emollient	B	2.6
Water	Aqua	Solvent	C	4.0
Paratexin KS	Potassium Sorbate	Preservative	C	0.3
Sodium Benzoate	Sodium Benzoate	Preservative	C	1.0

DUROSOFT FEATURED FORMULATION

Cream Base

Product used **Durosoft PG10-O**



Method

- » Disperse Durosoft PG10-O in water and heat to 90°C
- » Premix stage B ingredients and heat separately to 90°C
- » Add stage B ingredients slowly to stage A while homogenising at 9000rpm
- » Stir slowly until cool
- » Premix stage C and add to batch below 40°C
- » Adjust pH to 5.0 – 5.5

INGREDIENT	INCI	FUNCTION	STAGE	%W/W
Water	Aqua	Solvent	A	58.7
Durosoft PG10-O	Polyglyceryl-10 Oleate	Emulsifier	A	7.0
CCTG (Coconut)	Caprylic/capric Triglyceride	Emollient/moisturiser	B	5.0
Sweet Almond Oil	Prunus Amygdalus Dulcis (Sweet Almond) Oil	Softens and nourishes	B	0.5
Vitamin E	Tocopherol	Antioxidant	B	0.5
High Oleic Sunflower Oil	Helianthus Annuus (Sunflower) Seed Oil	Moisturiser/emollient	B	10.0
Shea Butter	Butyrospermum Parkii (Shea) Butter	Moisturiser/emollient	B	4.0
KKH NatWax Alt 0155	Oryza Sativa (Rice) Bran Wax, C30-45 Olefin	Thickener	B	3.0
Myrica Wax	Myrica Cerifera (Bayberry) Fruit Wax	Thickener/sensory enhancer	B	3.0
GMS	Glyceryl Stearate	Thickener/emollient	B	3.0
Water	Aqua	Solvent	C	4.0
Paratexin KS	Potassium Sorbate	Preservative	C	0.3
Sodium Benzoate	Sodium Benzoate	Preservative	C	1.0

DUROSOFT FEATURED FORMULATION

Hair Conditioner

(RSPO Mass Balance)



Product used **Durosoft PG10CY-MB**
Durosoft PG4-O

Method

- » Disperse xanthan gum into water and stir until hydrated
- » Add remaining stage A ingredients and heat to 85°C
- » Premix stage B ingredients and heat separately to 85°C
- » Add stage B ingredients slowly to stage A while homogenising at 9000 rpm
- » Stir slowly until cool
- » Premix stage C and add below 40°C
- » Adjust pH 5.0 - 5.5

INGREDIENT	INCI	FUNCTION	STAGE	%W/W
Water	Aqua	Solvent	A	77.9
Durosoft PG10CY-MB	Polyglyceryl 10-Caprylate	Emulsifier	A	4.5
Xanthan Gum	Xanthan Gum	Thickener	A	0.3
Joboba Oil	Simmondsia Chinensis (Jojoba) Seed Oil	Emollient/moisturiser	B	2.0
Cetearyl Alcohol	Cetearyl Alcohol	Viscosity controller	B	5.0
Stearic Acid	Stearic Acid	Conditioning agent	B	0.3
High Oleic Sunflower Oil	Helianthus Annuus (Sunflower) Seed Oil	Emollient/moisturiser	B	1.0
Durosoft PG4-O	Polyglyceryl-4 Oleate	Emulsifier	B	3.7
Water	Aqua	Solvent	C	4.0
Paratexin KS	Potassium Sorbate	Preservative	C	0.3
Sodium Benzoate	Sodium Benzoate	Preservative	C	1.0

DUROSOFT FEATURED FORMULATION

Massage Oil

Product used **Durosoft PG4-O**



Method

- » Combine all ingredients
- » Heat to 40°C and stir until homogenous
- » Turn off heat and stir until cool

INGREDIENT	INCI	FUNCTION	%W/W
Durosoft PG4-O	Polyglyceryl-4 Oleate	Emulsifier	10.0
CCTG (Coconut)	Caprylic/Capric Triglyceride	Emollient/moisturiser	35.5
High Oleic Sunflower Oil	Helianthus Annuus (Sunflower) Seed Oil	Emollient/moisturiser	25.2
Rapeseed oil	Brassica Campestris (Rapeseed) Seed Oil	Emollient/moisturiser	20.0
Coconut oil	Cocos Nucifera (Coconut) Oil	Emollient/moisturiser	5.0
Arnica oil	Arnica Montant in Helianthus Annuus Seed Oil	Reduces muscle pain and stiffness	2.0
Sweet Almond Oil	Prunus Amygdalus Dulcis (Sweet Almond) Oil	Softens and nourishes	2.0
Vitamin E	Tocopherol	Antioxidant	0.3

DUROSOFT FEATURED FORMULATION

Facial Cleansing Oil (RSPO Segregated)



RSPO
2-0167-10-000-00



Product used **Durosoft PG10-O**
Durosoft PG4-O

Method

- » Combine all ingredients
- » Heat to 70°C and stir until homogenous
- » Turn off heat and stir until cool

INGREDIENT	INCI	FUNCTION	%W/W
Durosoft PG10L-SG	Polyglyceryl-10 Laurate	Emulsifier	1.0
Durosoft PG4-O	Polyglyceryl-4 Oleate	Emulsifier	10.0
Grapeseed Oil	Vitis Vinifera (Grape) Seed Oil	Re-structure damaged and stressed skin tissue	87.9
Camelina Oil	Camelina Sativa Seed (Camelina) Oil	Anti-inflammatory/emollient	1.0
Vitamin E	Tocopherol	Antioxidant	0.1

DUROSOFT FEATURED FORMULATION

Solid Moisturising Bar

Product used **Durosoft PG4-O**



Method

- » Combine all ingredients
- » Heat to 85°C and stir until homogenous
- » Turn off heat, stir until 55°C and pour into moulds

INGREDIENT	INCI	FUNCTION	%W/W
Durosoft PG4-O	Polyglyceryl-4 Oleate	Emulsifier	10.0
GMO	Glyceryl Oleate	Emollient	1.5
GMS	Glyceryl Stearate	Thickener/emollient	41.0
Cocoa Butter	Theobroma Cacao (Cocoa) Seed Butter	Emollient/moisturiser	30.8
Argan Oil	Argania Spinosa Kernel Oil	Hydrates skin	0.1
Mango Butter	Mangifera Indica (Mango) Seed Butter	Emollient/moisturiser	16.5
Vitamin E	Tocopherol	Antioxidant	0.1

DUROSOFT FEATURED FORMULATION

Micellar Water

(RSPO Mass Balance)



Product used **Durosoft PG10CY-MB**

Method

- » Prepare stage B by dissolving aloe vera powder into water
- » Weigh and combine stage A ingredients, then add stage B and heat to 50°C under stirring
- » Cool down to 40°C, and add stage C ingredients gradually under stirring
- » Adjust to pH 5.0-5.5

INGREDIENT	INCI	FUNCTION	STAGE	%W/W
Water	Aqua	Solvent	A	93.0
Durosoft PG10CY-MB	Polyglyceryl 10-Caprylate	Solubiliser	A	1.10
Cucumber Extract	Cucumis Sativus (Cucumber) Fruit Extract	Emollient/moisturiser	A	2.0
Decyl Glucoside	Decyl Glucoside	Surfactant	A	0.5
Aloe Vera Powder (1% sol.)	Aloe Barbadensis Leaf Juice	Soothing	B	1.9
Rose Fragrance Oil	Parfum	Fragrance	C	0.15
Lavender Oil	Lavandula Angustifolia (Lavender) Flower Oil	Anti-inflammatory/ anti-stress	C	0.05
Paratexin KS	Potassium Sorbate	Preservative	C	0.3
Sodium Benzoate	Sodium Benzoate	Preservative	C	1.0

DUROSOFT FEATURED FORMULATION

Eye Serum

Product used **Durosoft PG10-O**



Method

- » Combine stage A ingredients and stir until Durosoft PG10-O is dissolved
- » Heat batch to 70°C and homogenize at 9000rpm
- » Stir slowly until cool
- » Premix stage B and add to batch below 40°C
- » Adjust pH to 5.0 – 5.5

INGREDIENT	INCI	FUNCTION	STAGE	%W/W
Water	Aqua	Solvent	A	75.1
Durosoft PG10-O	Polyglyceryl-10 Oleate	Solubiliser	A	18.0
Water	Aqua	Solvent	B	4.0
Sodium Benzoate	Sodium Benzoate	Preservative	B	1.0
Paratexin KS	Potassium Sorbate	Preservative	B	0.3
Meiview	Water, Propanediol, Xanthan Gum, Glyceryl Caprylate, Bacillus Ferment	Anti-wrinkle active	B	1.0
Floral Nectar	Glycerin, Water, Combretum Farinosum Flower Nectar	Moisturising/revitalizing Agent	B	0.5
GFMA Silver White Shimmer	Borosilicate, Titanium Oxide, Tin Oxide	Glitter	B	0.1

DUROSOFT FEATURED FORMULATION

Charcoal Jelly Cleanser



Product used **Durosoft PG10-O**

Method

- » Disperse charcoal powder in Durosoft PG10-O
- » Add water and heat to 70°C while stirring
- » Cool down to 40°C
- » Premix stage B and add to batch below 40°C
- » Adjust pH to 5.0 - 5.5

INGREDIENT	INCI	FUNCTION	STAGE	%W/W
Water	Aqua	Solvent	A	64.0
Durosoft PG10-O	Polyglyceryl-10 Oleate	Solubiliser	A	30.0
Activated Charcoal	Charcoal Activated Medicinal	Purifying & detoxifying agent	A	1.0
Water	Aqua	Solvent	B	4.0
Sodium Benzoate	Sodium Benzoate	Preservative	B	0.5
Paratexin KS	Potassium Sorbate	Preservative	B	0.5

Effective natural solubilizer Durosoft PG10-CY

👤 Agne Roke 📅 November 2019

Strong growth of natural Ingredients

As the demand for natural and sustainable personal care products continues to gather pace on a global scale, the importance of sensory, aesthetic and effectiveness aspects of product ranges need to match the increasingly high expectations of customers who want as much natural and clean ingredients as possible in their hair and skin care products they choose to buy. The global market for personal care products is expected to reach approximately \$500 billion by 2020. The market for product ingredients is likely to grow even faster over the same forecast period.

Valued at \$7.46 billion in 2014, the ingredients market is expected to reach almost \$12 billion by 2023.

Formulators and manufacturers need to be more aware than ever before of the latest trends in the personal care sector and the motivations behind consumers' product choice. With the market's value in constant growth, pressure continues to mount from consumers for the industry to clean up its environmental act and offer clean ingredients free from chemicals.

What is a solubilizer?

In the personal care and cosmetics industry, solubilizers help to make otherwise insoluble liquids soluble in water. Solubilizers are generally surfactants with an HLB between 13-18 and are usually more water soluble than oil-in-water (O/W) emulsifiers. Solubilizers and emulsifiers function on the same principle. Both help (at least) two immiscible ingredients to mix, usually oil and water.

The main difference is that by solubilisation, the particle size of the dispersed phase is so small that the final product appears transparent or translucent.



However, when emulsifying, the particle size is much higher and the product appears milky.

Due to their ability to complement the sensorial function by solubilizing perfume, fragrances and essential oils, solubilizers are widely used in a variety of applications in haircare, skincare and shower and bath products like shower gels, cosmetic bases, conditioners etc.

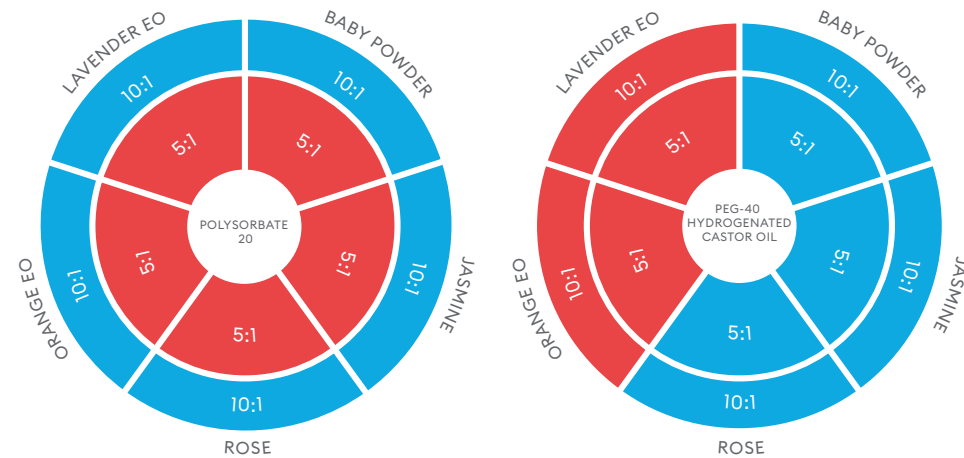
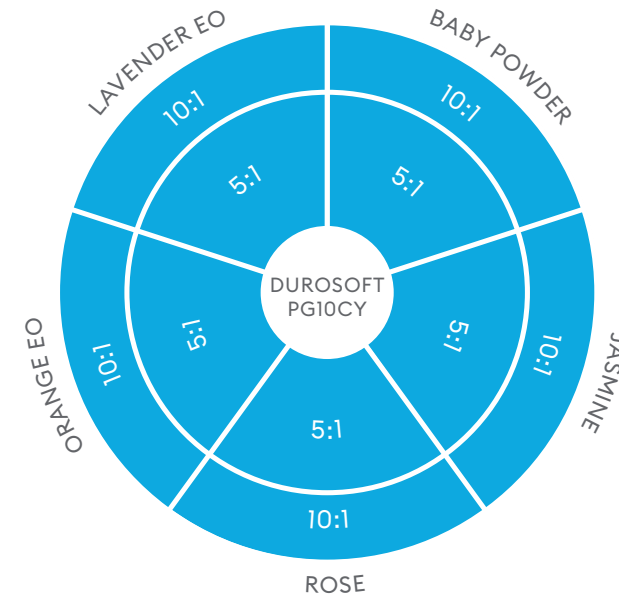
Natural solubilizers for fragrances on the rise

As most solubilizers available on the market are synthetic and natural products are in high demand. By using a natural solubilizer, the total percentage of natural materials in the final product also increases, making the product more appealing to consumers.

According to their properties, different solubilisers are used for different types of fragrances/EO.

Market demand for natural solubilisers such as Durosoft PG10-CY is increasing exponentially.

Durosoft PG10-CY was tested against other commercially available solubilizers with a selection of fragrances and EO, from categories based on Michael Edward’s fragrance wheel. The 10:1 ratio of solubiliser: fragrance/EO gave the highest number of clear solutions across four of the solubilisers tested, whereas a 3:1 ratio of solubiliser: fragrance/EO produced solutions with the most haze. The study demonstrated the effective performance of a COSMOS approved, 100% naturally derived ester, establishing Durosoft PG10-CY a good option as an alternative to synthetic solubilisers such as PGE - Polysorbate 20 and PEG-40 Hydrogenated Castor Oil for cosmetic and personal care products.



● Formulation Passed ● Formulation Failed

Image shows performance stability when using different oil to ingredient ratios. The same test was applied to test common synthetic solubilisers (Polysorbate 20 and Peg 40 hydrogenated castor oil) in comparison to natural solubilizer Durosoft PG10-CY.

Durosoft PG10-CY an effective natural solubilizer for fragrances

Part of Stephenson's naturally derived, COSMOS approved surfactants, emollients and solubilisers, Durosoft PG10 CY is an ingredient that can be used in a variety of haircare, cosmetic and personal care applications. It is COSMOS approved polyglyceryl-10 Caprylate and known to be an effective non-ionic solubiliser of fragrances, essential oils and lipophilic oils into aqueous systems due to the large polyglyceryl head group. The ingredient is effective in solubilising fragrances and essential oils in soap, bath, haircare and skincare products.



The full Durosoft range is a unique range of naturally derived monoglycerol and polyglycerol esters which use state of the art technology to provide natural alternatives to synthetic ingredients found in many cosmetic and personal care products. The diverse product range includes natural, RSPO (Roundtable on Sustainable Palm Oil) and palm free ingredients.

Manufacturers and formulators can be confident that formulating with Durosoft means greater access to a wider range of natural ingredients, esters that are compatible with oil and water phases, no deleterious effect on temperature sensitive ingredients and a broader array of HLB than other commonly used ingredients in the personal care market for a greater stability profile. In addition, as the range carries sustainable ingredients and it is PEG (polyethylene glycol) free, EO free and skin friendly, this represents great news for both consumers and the environment.



DUROSOFT® product matrix

* From sunflower, rapeseed or castor oil

PRODUCT NAME	DUROSOFT PG4-O	DUROSOFT PG4L-SG	DUROSOFT PG10-O	DUROSOFT PG10L-SG	DUROSOFT PG10CY-MB
INCI	POLYGLYCERYL 4 OLEATE	POLYGLYCERYL 4 LAURATE	POLYGLYCERYL 10 OLEATE	POLYGLYCERYL 10 LAURATE	POLYGLYCERYL 10 CAPRYLATE
FUNCTION	EMOLLIENT	RSPO SG EMULSIFIER	MID HLB EMULSIFIER	RSPO SG MID/HIGH HLB EMULSIFIER	RSPO MB SOLUBILISER
DERIVED FROM	SUNFLOWER SEED OIL	RSPO SG PALM KERNEL OIL	SUNFLOWER SEED OIL	RSPO SG PALM KERNEL OIL	RSPO MB PALM KERNEL OIL
	SUNFLOWER OIL*	SUNFLOWER OIL*	SUNFLOWER OIL*	SUNFLOWER OIL*	SUNFLOWER OIL*
HLB	4-6	8-10	8-10	11-12	16-17
APPEARANCE	GOLDEN VISCOUS LIQUID	GOLDEN VISCOUS LIQUID	GOLDEN VISCOUS LIQUID	GOLDEN VISCOUS LIQUID	GOLDEN VISCOUS LIQUID
PHASE COMPATABILITY	OIL	WATER	WATER	WATER	WATER
EO FREE	✓	✓	✓	✓	✓
PEG FREE	✓	✓	✓	✓	✓
RSPO CERTIFIED		 <small>RSPO 2-0167-10-100-00</small>		 <small>RSPO 2-0167-10-100-00</small>	 <small>RSPO 2-0167-10-100-00</small>





If you have a specific project, or would like more information about Durosoft speciality ingredients please contact our team:

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