



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

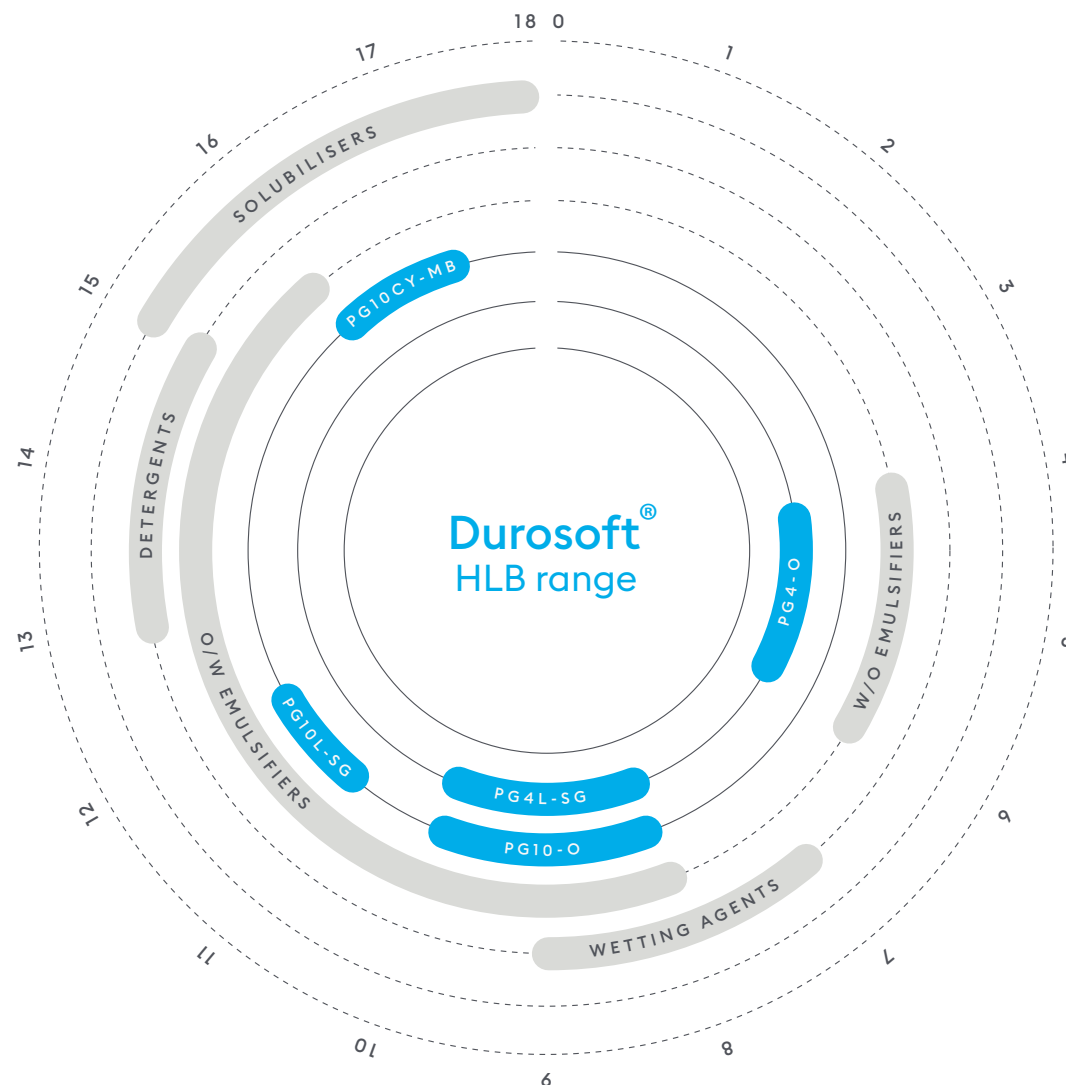
The Hydrophilic-Lipophilic Balance (HLB) scale (0 to 20) indicates the size and strength of the hydrophilic and lipophilic moieties of a surfactant molecule.

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 |



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

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

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 |
| Jojoba 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)

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® 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 | | | | | |





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

Stephenson, Brookfoot House,
Low Lane, Horsforth,
Leeds, LS18 5PU
United Kingdom

Follow us on

