



STEPHENSON[®]
PERSONAL CARE

DUROSOFT[®]
NATURALLY DIFFERENT[™]

*Naturally Derived Polyglycerol
Ester Emulsifiers*

STEPHENSONPERSONALCARE.COM



NATURALLY DIFFERENT EMULSIFIERS

DUROSOFT® is a unique range of naturally derived polyglyceryl-4 ester emulsifiers, which use patent-pending technology to provide the widest HLB range for a greater stability profile. This helps cosmetics formulators meet key product performance and sustainability criteria by:

- > *Improving carbon footprint: reduces energy consumption*
 - > *Improving production throughput: substantial cost savings*
 - > *Shorter product development time*
 - > *Simpler and safer manufacturing process*
 - > *Enhancing brand image as a sustainable producer*
-

DUROSOFT® offers exceptional product performance with a caring sensorial profile for a positive consumer experience.

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- > **NATURAL**
- > **COLD PROCESS**
- > **PEG FREE**
- > **EASY TO USE**
- > **SKIN FRIENDLY**
- > **RSPO CERTIFIED**



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ADVANTAGES OF FORMULATING WITH DUROSOFT[®]

- > *Provides widest HLB range of 4-14 for a greater stability profile*
 - > *Compatible with both oil and water phases*
 - > *No co-emulsifiers required*
 - > *No heating or cooling*
 - > *No deleterious effect on temperature sensitive ingredients*
 - > *Stable water-thin emulsions easily achieved*
-

PRODUCT RANGE

**NATURALLY DERIVED SINGLE-INGREDIENT RAW MATERIALS
THAT CAN BE USED WITHOUT ANY CO-EMULSIFIERS**

DUROSOFT® PK-SG O/W EMULSIFIER RSP0 CERTIFIED

INCI Name: Polyglyceryl-4 Laurate

Appearance: Amber coloured viscous liquid

Dosage: 3-5%

Formulation: Add into water and oil phase. Hot or cold process

Applications: Emulsifier for all o/w emulsions

DUROSOFT® SF W/O EMULSIFIER SUNFLOWER DERIVED

INCI Name: Polyglyceryl-4 Oleate

Appearance: Amber coloured viscous liquid

Dosage: 5-15%

Formulation: Add into water and oil phase. Hot or cold process

Applications: Emulsifier for all w/o emulsions and 100% oil formulations

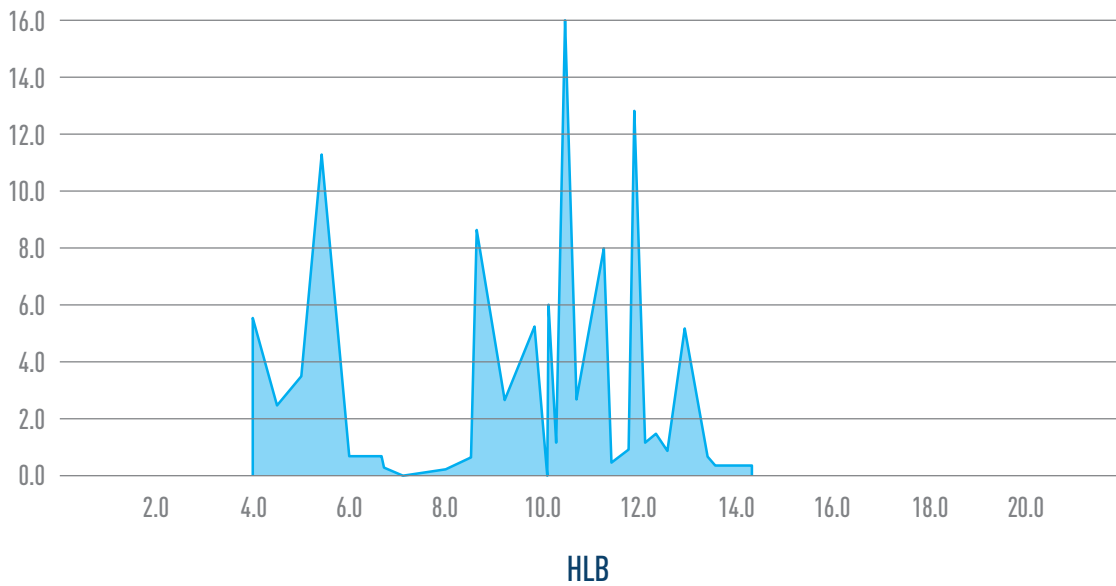
STABLE IN BOTH OIL AND WATER PHASE

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HLB STABILITY PROFILES

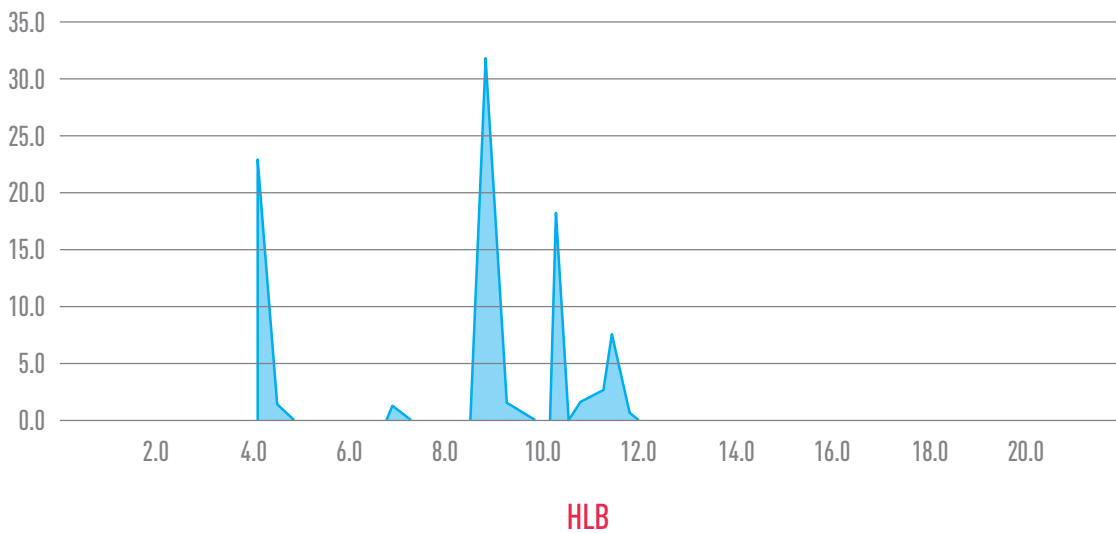
DUROSOFT® PK-SG

CUMULATIVE HLB DISTRIBUTION



DUROSOFT® SF

CUMULATIVE HLB DISTRIBUTION





PRODUCT APPLICATION IDEAS

DUROSOFT® PROVIDES EFFECTIVE EMULSIONS; FROM LOW VISCOSITY SPRAYABLE EMULSIONS, TO LOTIONS AND CREAMS - FOR A UNIQUE SENSORIAL EXPERIENCE.



**WATER-THIN
LOTIONS**



CREAMS



**SHOWER
OILS**



**WET
WIPES**



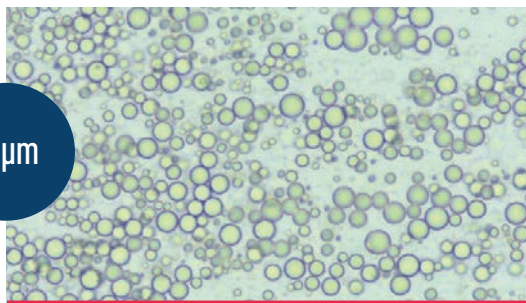
**DEODORANT
ROLL-ONS**



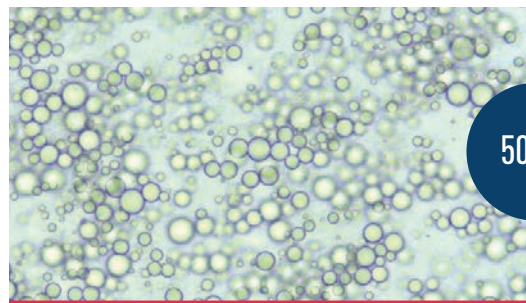
PREPARED USING DUROSOFT®

MICROSCOPY OF WATER-THIN EMULSIONS

After preparation:



After 4 weeks:



These images demonstrate the ability of DUROSOFT® to produce water-thin emulsions. It can be seen that after four weeks the oil in water emulsion structure has not deteriorated and remains stable.

DUROSOFT® FORMULATIONS

COLD PROCESS SPRAY LOTION

| MATERIAL | %W/W | METHOD |
|--------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Softened Water | 80.93 | <ul style="list-style-type: none"> • Charge Water • Sprinkle Carbopol Ultrez 10 onto surface, leave to sink into product before mixing for 5 minutes • Add Preservative (Euxyl PE9010) and mix well • Add DUROSOFT® PK-SG and mix until homogeneous • Add Sunflower Oil and mix until homogeneous • Adjust pH to 5 - 6 using Caustic Soda 32% • Add any fragrances, additives and active ingredients • Stir until the additional ingredients are homogeneously dispersed |
| Carbopol Ultrez 10 | 0.05 | |
| Euxyl PE9010 | 1.00 | |
| DUROSOFT® PK-SG | 3.00 | |
| Sunflower Oil | 15.00 | |
| 32% Caustic Soda | 0.02 | |

CREAM BASE

| MATERIAL | %W/W | METHOD |
|-----------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Softened Water | q.s | <ul style="list-style-type: none"> • Charge Water • Add preservative and mix • Add Xanthan Gum and stir until hydrated • Add first DUROSOFT® PK-SG and mix until homogeneous • Premix Sunflower Oil and 2nd DUROSOFT® PK-SG charge together • Add the premix to rest of batch and stir • Heat lotion batch to 70C (158F) • Heat Ceteryl Alcohol separately to 70C (158F) • Transfer to homogeniser and add Ceteryl Alcohol until homogeneous • Stir slowly until cool • Adjust pH if required • Add any fragrances, additives and active ingredients • Stir until the additional ingredients are homogeneously dispersed |
| Preservative | q.s | |
| Xanthan Gum | 0.20 | |
| DUROSOFT® PK-SG | 1.50 | |
| Sunflower Oil | 15.00 | |
| DUROSOFT® PK-SG | 1.50 | |
| Ceteryl Alcohol | 10.00 | |

FOAMING SHOWER OIL

| MATERIAL | %W/W | METHOD |
|-------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Caprylic Capric Triglycerides | 20.00 | <ul style="list-style-type: none"> • Charge Caprylic Capric Triglycerides and High Oleic Sunflower Oil to vessel • Mix and heat to 40C (104F) • Add DUROSOFT® SF and mix • Add MIPA-Laureth Sulfate (and) Laureth-4 (and) Propylene Glycol and mix • Add any fragrances, additives and active ingredients • Stir until the additional ingredients are homogeneously dispersed |
| High Oleic Sunflower Oil | 53.00 | |
| DUROSOFT® SF | 9.00 | |
| MIPA-Laureth Sulfate (and) Laureth-4 (and) Propylene Glycol | 18.00 | |

BATH MELT

| MATERIAL | %W/W | METHOD |
|-----------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Shea Butter | 42.5 | <ul style="list-style-type: none"> • Melt the Shea Butter and Cocoa Butter together • Add DUROSOFT® PK-SG and mix • Add DUROSOFT® SF and mix • Cool the product to 35C (95F) • Add any fragrances, additives and active ingredients • Stir until the additional ingredients are homogeneously dispersed • Pour into moulds and leave to set |
| Cocoa Butter | 42.5 | |
| DUROSOFT® PK-SG | 7.5 | |
| DUROSOFT® SF | 7.5 | |

DUROSOFT® IS PERMITTED FOR USE IN EU, USA, CANADA, AUSTRALIA, CHINA AND JAPAN.

Disclaimer: The information contained herein is meant to demonstrate how our products can be used. The given data are suggestions and guideline formulations without guarantee, aimed to support our customers' research and development. As production conditions at our customers' factories are outside of our control, we cannot accept liability involved in the use of our products.

CONTACT US

IF YOU HAVE A SPECIFIC PROJECT, OR WOULD LIKE MORE INFORMATION ABOUT DUROSOFT[®], PLEASE CONTACT OUR PERSONAL CARE TEAM AT:

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