

STEPHENSON
PERSONAL CARE



DUROSOFT

NATURALLY DIFFERENT

*Naturally Derived
Polyglycerol
Ester Emulsifiers*



Supplied in partnership with:



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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.

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





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 RSPO 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

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Note: Formulations can be thickened with Xanthan Gum Powder if you wish to keep the formulation “natural”.

STABLE IN BOTH OIL AND WATER PHASE

PRODUCT FEATURES

- > MADE USING 100% RSPO CERTIFIED SEGREGATED SUSTAINABLE PALM KERNEL OIL
- > NATURAL
- > COLD PROCESS
- > PEG FREE
- > EASY TO USE
- > SKIN FRIENDLY
- > PROVIDES WIDE HLB RANGE OF 4 - 14 FOR A GREATER STABILITY PROFILE
- > COMPATIBLE WITH BOTH OIL AND WATER PHASES
- > NO CO-EMULSIFIERS REQUIRED
- > NO DELETERIOUS EFFECT ON TEMPERATURE SENSITIVE INGREDIENTS
- > CREATES STABLE WATER-THIN EMULSIONS THAT ARE TRULY COLD PROCESS
- > NO HEATING OR COOLING IS REQUIRED
- > THICKEN TO CREATE HIGHER VISCOSITY LOTIONS/CREAMS AS DESIRED
- > REDUCE ENERGY CONSUMPTION BY UP TO 85%
- > REDUCE PRODUCTION TIME BY UP TO 70%
- > OVERALL SIGNIFICANT REDUCTION TO CARBON FOOTPRINT OF FINISHED PRODUCTS
- > CREATE MORE NATURAL FORMULATIONS
- > BROAD PH STABILITY
- > GOOD ELECTROLYTE TOLERANCE
- > SIMPLE PROCESSING, WITHOUT THE USE OF HIGH-SHEAR
- > COLD PROCESSING ENABLES THE ADDITION OF TEMPERTURE SENSITIVE INGREDIENTS EARLIER IN PRODUCTION
- > CAN BE USED HOT PROCESS

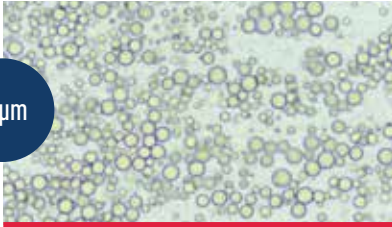


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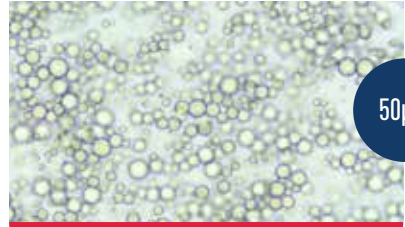
PREPARED USING DUROSOFT®

MICROSCOPY OF WATER-THIN EMULSIONS

After preparation:



After 4 weeks:

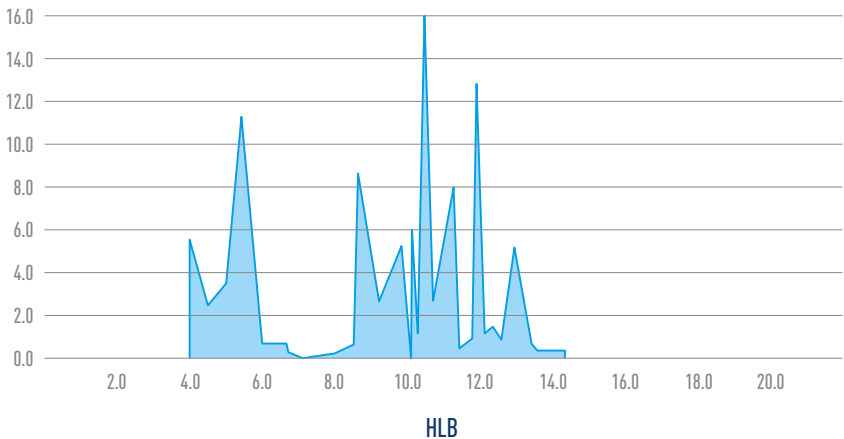


These images demonstrate the ability of DUROSOFT® to produce water-thin emulsions. It can be seen that after four weeks the oil in water emulsion structure has not deteriorated and remains stable.

HLB STABILITY PROFILES

DUROSOFT® PK-SG

CUMULATIVE HLB DISTRIBUTION



BASIC FORMULA

ULTRA THIN SPRAYABLE LOTION

This first formula is a good basic starting point provided by the manufacturer and somewhere to work from. This formula makes 200g of product and is where I started with Durosoft®PK-SG. This formula uses Xanthan Gum as a natural thickener, but if you have not used it before it can be a little tricky; just take it slowly and follow the hydration instructions exactly. If you end up with any little lumps, remove them before proceeding to Step 3 or start afresh until you have a nice clean, smooth gel.

WATER PHASE

162g Distilled Water (81%)
0.6g Liquid Germall Plus (0.3%)
0.4g (½ sample measure spoon) Xanthan Gum (0.2%)
3g Durosoft®PK-SG (1.5%)

OIL PHASE

30g Almond Oil (15%)
3g Durosoft®PK-SG (1.5%)
1g Fragrance or Essential Oils of choice (0.50%)

STEP ONE

Measure Distilled Water into mixing jug and add the Liquid Germall Plus, stir to combine well. Have the Xanthan Gum on a small measure spoon. Place the mini mixer into the water mixture and begin stirring, this creates a vortex in the centre of the jug – this is important! Whilst you have the mixing going, and the vortex in the centre, slowly pour in the Xanthan Gum – this way you avoid the lumps. Mix intermittently for up to 30 minutes to ensure it is fully hydrated.

After this time add the first portion of Durosoft®PK-SG and mix well

STEP TWO

In a separate jug combine the second portion of Durosoft®PK-SG and the Almond Oil

STEP THREE

Place the mixer into the water phase jug and turn it on, then pour the oil mixture into the jug, and then increase the speed, mixing frequently for up to 20 minutes (If using a stick blender you'll need to use quick blasts, not continual stirring).

Notes Specific to this Formula: As this is cold processed, do not use spring water, you can substitute a hydrosol or floral water

* As formulated by Aussie Soaps *

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	

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	

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.

You'll find more formulations in our *Making Your Own Moisturisers Book* and in our *free Recipe Formulary* on our website: www.aussiesoapsupplies.com.au

*This information is a combined document compiled from
Stephenson Personal Care and Aussie Soap Supplies®*



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