

## Development Formulation

## Easy to Apply Natural Sunscreen SPF 30

CH0122

This COSMOS compliant formulation was formulated using **Solaveil™ XT-300**, a titanium dioxide dispersion in a naturally derived carrier oil, which provides UVB, UVA and blue light protection. **Arlacel™ 1690** a water-in-oil emulsifier versatile enough for use in most applications is used. **Hydroneis®**, **Fruitliquid™ Blueberry EC** and **NG Shea Unsaponifiable** help to soothe skin and reduce inflammation making the skin look and feel more attractive. Easy to apply natural sunscreen is great for sensitive skin.

Ingredient/INCI Name	Functionality	% w/w
<b>Part A</b>		
<b>Crodamol™ GTCC</b> (Caprylic/Capric Triglyceride) <sup>1</sup>	Medium Emollient	5.00
<b>Crodamol ISIS</b> (Isostearyl Isostearate) <sup>1</sup>	Medium Emollient	5.00
<b>Arlacel 1690</b> (Sorbitan Isostearate (and) Polyglyceryl-3 Polyricinoleate) <sup>1</sup>	W/O Emulsifier	3.50
Isostearyl Alcohol <sup>4</sup>	Spreadable emollient	2.00
<b>Crodamol SSA</b> (Decyl Isostearate (and) Isostearyl Isostearate) <sup>1</sup>	Velvety emollient	2.00
<b>NG Shea Unsaponifiable</b> (Butyrospermum Parkii (Shea) Butter Unsaponifiables) <sup>3</sup>	Soothes inflammation by strengthening the epidermis and restoring barrier function	1.00
<b>Part B</b>		
Water Deionised (Aqua)	-	To 100
Glycerin <sup>4</sup>	Humectant	4.00
Sodium Chloride <sup>5</sup>	Salting out	0.70
Sodium Benzoate <sup>5</sup>	Preservative	0.30
Potassium Sorbate <sup>5</sup>	Preservative	0.20
Keltrol CG-T (Xanthan Gum) <sup>6</sup>	Stabiliser	0.10
<b>Part C</b>		
<b>Solaveil XT-300</b> (Titanium Dioxide (and) Caprylic/Capric Triglyceride (and) Polhydroxystearic Acid (and) Stearic Acid (and) Alumina) <sup>1</sup>	Inorganic broad spectrum filter	24.00
<b>Part D</b>		
<b>Fruitliquid Blueberry EC</b> (Aqua (and) Glycerin (and) Vaccinium Myrtillus Fruit Extract) <sup>2</sup>	Antioxidant & Protection	2.00
<b>Hydroneis®</b> (Glycerin (and) Water (Aqua) (and) Salinicoccus Lysate Filtrate (and) Pentylene Glycol) <sup>3</sup>	Makes the skin soft and attractive	2.00

Suppliers: **1: Croda 2: Crodarom 3: Sederma 4: Cargill 5: Sigma 6: CP Kelco**

**Procedure:**

Combine Part A and heat to 85°C. Combine Part B and heat to 85°C. Add **Solaveil XT-300** to Part A with stirring and maintain temperature. Slowly add Part B to Part A with intensive stirring. Mix with an Ultra-Turrax homogeniser for one minute per 300g at 10000rpm. Stir and cool to room temperature adding Part C below 40°C.

Appearance: White emulsion; pH: N/A; Viscosity: 20,400cP ± 10% % (Brookfield DV-2T, Spindle 10, 10 rpm, 1 min, room temperature).

Stability: 3 months at 4°C, 25°C, 40°C, 45°C and 50°C and 7 x -10/+40°C 24 hour freeze thaw cycles

In vivo SPF (ISO 24444:2019, 5 subjects, Derma Consult, Germany): 32.9, label SPF 30

In vitro UVAPF (ISO 24443:2012, Croda, UK): 10.3

In vitro Critical wavelength (ISO 24443:2012, Croda, UK): 381nm

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## Development Formulation

Keltrol is a registered trademark of CP Kelco.

This formulation was developed in Europe. Contact your local sales representative with enquiries as ingredient availability can vary by region.

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