

## Skin care formulations

# Outdoor trinity protection fluid SPF 30 *in vitro*<sup>1</sup>

Formula# 200-10039A

Material# 876581

Ingredients (Trade Name)	INCI Name	% w/w	Supplier
<b>Phase A</b>			
Purified Water	Water/Aqua	q.s. 100	Local
EDTA, tetrasodium salt	Tetrasodium EDTA	0.10	Local
<b>Phase B</b>			
UltraThix™ P-100 polymer	Acrylic Acid/VP Crosspolymer	0.50	Ashland
<b>Phase C</b>			
Ceraphyl™ 230 ester	Diisopropyl Adipate	2.00	Ashland
Escalol™ 517 UV filter	Butyl Methoxydibenzoylmethane (Avobenzene)	3.00	Ashland
Escalol 587 UV filter	Ethylhexyl Salicylate	5.00	Ashland
Escalol HMS UV Filter	Homosalate	10.00	Ashland
Escalol 597 UV filter	Octocrylene	7.00	Ashland
Escalol S UV filter <sup>1</sup>	Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine	4.00	Ashland
<b>Phase D</b>			
DC FZ-3196*	Caprylyl Methicone	6.00	Dow Corning
Eumulgin™ VL 75*	Lauryl glucoside (and) Polyglyceryl-2 dipolyhydroxystearate (and) Glycerin	4.00	BASF
Natragem™ E145 NP*	Polyglyceryl-4 Laurate/Succinate (and) Water/Aqua	2.00	Croda
<b>Phase E</b>			
Purified Water	Water/Aqua	0.50	Local
Sodium Hydroxide	Sodium Hydroxide	0.09	Local
<b>Phase F</b>			
Methylparaben NF preservative	Methylparaben	0.20	Ashland
Optiphen™ ND preservative	Phenoxyethanol (and) Benzoic Acid (and) Dehydroacetic Acid	1.00	Ashland
<b>Phase G</b>			
Unicert™ Yellow 08006-J* (Sol. 1%)	CI 15985 (Yellow 6)	0.80	Sensient
PF Sunny 102742	Fragrance/Parfum	0.30	apf
Blumilight™ biofunctional	Water/Aqua (and) Butylene Glycol (and) Theobroma Cacao (Cocoa) Seed Extract	1.00	Ashland
Elixiance™ biofunctional	Propanediol (and) Water/Aqua (and) Schinus Molle Extract	1.00	Ashland
Gransil™ PSQ*	Polymethylsilsesquioxane	1.00	Grant
<b>Total</b>		<b>100.00</b>	

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## Outdoor Trinity Protection Fluid SPF 30 *in vitro* <sup>1</sup>

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Material# 876581

### Procedure

1. Add water into main vessel and add phase A ingredient at room temperature.
2. Sprinkle in phase B and mix well until homogeneous.
3. Add Phase C ingredients to side beaker and heat at 65-70°C with stirring until clear then cool down to room temperature.
4. At room temperature homogenize phase C + phase D.
5. Add CD into the main vessel and mix well. The emulsion should be homogeneous.
6. Premix phase E until clear and add to the main vessel while stirring.
7. Premix phase F at 50°C until clear and add to the main vessel while stirring.
8. Add ingredients of phase G one by one and mix well until homogeneous.
9. Stop at 25°C.

### Typical Properties

**Appearance:** Orange fluid

**pH:** 5.5 – 6.0

**Viscosity (D0):** 5 000 – 11 000 cps (Brookfield RVT/Spindle 3/5 RPM/ 1 minute/25°C)

**This formula has passed 3-month accelerated lab stabilities and a 28-day challenge efficacy test. However, the preservative system has not been optimized to its lowest effective level.**

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1 Not approved for use in the U.S.

