ADP® Cosmetics

PRODUCT GUIDELINES

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FORMULATION GUIDE

Formulation Guide – O/W Emulsion

*Non restrictive examples of the parameters used for the formulation.

UV Filter (powder)

A solubilizer must be added (only for oil phase)

Water phase

Oil phase

≥60°C

≥60°C

FILTER DISPERSION
- Overhead stirrer:
20 min*
800-900 rpm*
- Homogenizer (eg. Silverson):
12 min*
3000-5000 rpm*
- Homogenizer (eg. Ultra-Turrax):
3 min*
3000-20000 rpm*

Water phase

Oil phase

Water phase

Oil phase

EMULSIFICATION
- Overhead stirrer:
10 min*
900-1000 rpm*
- Homogenizer (eg. Silverson):
3-4 min*
3000-5000 rpm*
- Homogenizer (eg. Ultra-Turrax):
3 min*
7000-20000 rpm*

Emulsion

Emulsion

COOLING
Stir continuously at 300-1200* rpm until the product reaches room temperature

CONTINUOUS STIRRING. DO NOT LET THE PHASES SETTLE DOWN!

Formulation Guide – W/O Emulsion

*Non restrictive examples of the parameters used for the formulation.

UV Filter (powder)

A solubilizer must be added (only for oil phase)

Water phase

Oil phase

≥60°C

≥60°C

FILTER DISPERSION
- Overhead stirrer:
20 min*
800-900 rpm*
- Homogenizer (eg. Silverson):
12 min*
3000-5000 rpm*
- Homogenizer (eg. Ultra-Turrax):
3 min*
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Oil phase

Water phase

Oil phase

Water phase

EMULSIFICATION
- Overhead stirrer:
10 min*
900-1000 rpm*
- Homogenizer (eg. Silverson):
3-4 min*
3000-5000 rpm*
- Homogenizer (eg. Ultra-Turrax):
3 min*
7000-20000 rpm*

Emulsion

Emulsion

COOLING
Stir continuously at 300-1200* rpm until the product reaches room temperature

CONTINUOUS STIRRING. DO NOT LET THE PHASES SETTLE DOWN!

Formulation Guide

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Recommended equipment for the formulation

- ***Filter Dispersion:***
  - ✓Overhead stirrer with 4-bladed propeller stirrer*.
  - ✓Silverson homogenizer* with Ultramix Head* or General Purpose Disintegrating Head*.
  - ✓Ultra-Turrax* homogenizer with S25N-18G* or S25N-10G* dispersing tool.
- ***Emulsification:***
  - ✓Overhead stirrer with 4-bladed propeller stirrer*.
  - ✓Overhead stirrer with dissolver stirrer*.
  - ✓Silverson homogenizer* with Ultramix Head*, General Purpose Disintegrating Head* or emulsor head.
  - ✓Ultra-Turrax* homogenizer with S25N-18G* or S25N-10G* dispersing tool.
- ***Cooling:***
  - ✓Overhead stirrer with 4-bladed propeller stirrer*, paddle stirrer* or anchor stirrer*.

*Non restrictive examples of the equipment used for the formulation.

Formulation Guide

Overhead Stirrer

Dissolver stirrer

4-bladed propeller stirrer

Anchor stirrer

Paddle stirrer

Silverson Homogenizer

General Purpose Disintegrating Head

Emulsor head

Ultramix Head

Ultra-Turrax Homogenizer

S25N-10G

S25N-18G

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Recommended dosage level vs expected SPF

Filter	Dosage level (%)	Expected SPF*
EnhanceU-S	7,5	10
	10	15
	12	20-30
	15	30-50
	17	50-50+

Filter	Dosage level(%)	Expected SPF*
EnhanceU-T EnhanceU-T-light EnhanceU-T-medium EnhanceU-T-warm EnhanceU-T-tan EnhanceU-T-rich	7,5	10
	10	15
	12	30
	≥15	50-50+

*The expected SPF values can change depending on the final formulation.

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Formulation examples with mineral UV filters

CREMA ADP1 (O/W)

INGREDIENTES	INCI	%	FASE
WATER	AQUA	Q.S. 100	I
ENHANCE U-T	TITANIUM DIOXIDE, SILICA OR TITANIUM DIOXIDE, IRON OXIDE, SILICA	Según filtro y SPF deseado	I
VASELINE	PARAFFINUM LIQUIDUM	6.2	I
ISOPROPYL MYRISTATE	ISOPROPYL MYRISTATE	6.2	II
STEARIC ACID	STEARIC ACID	3.3	II
GLYCERYL STEARATE	GLYCERYL STEARATE	4.5	II
OCTYLDODECYL MYRISTATE	OCTYLDODECYL MYRISTATE	6.5	II
CETYL ALCOHOL	CETYL ALCOHOL	2.4	II
TEA	TRIETHANOLAMINE	1.2	III
PE9010	PHENOXYETHANOL (AND) ETHYLHEXYLGLYCERIN	0,5	IV

Formulation Recipe:

(1) Heat phase I (water + vaseline) at 75°C.

(2) Add the filter slowly to Phase I (T≥60°C) under stirring and heating. Stir during 20 minutes until an homogeneous dispersion is achieved.

(3) Melt phase II under stirring at 75°C.

(4) Add phase II to phase I when both phases are at 75°C, stirring during 10 minutes.

(5) Add pase III to the emulsion and stir further 2-5 min.

(6) Cool down the emulsion under stirring. Add the phase IV when T≤35°C.

CREAM ADP17 (O/W)

INGREDIENTS	INCI	%	PHASE
WATER	AQUA	Q.S. 100	I
SODIUM CHLORIDE	SODIUM CHLORIDE	0,5	I
XANTHAN GUM	XANTHAN GUM	0,2	I
ADP FILTER	-	Depending on filter and expected SPF	I
MONTANOV-82	CETEARYL ALCOHOL (AND) COCOGLUCOSIDE	3.0	II
MONTANOV-L	C14-22 ALCOHOL (AND) C12-20 ALKYL GLUCOSIDE	1,5	II
MIRASIL DM50	DIMETHICONE	3,0	II
COCOATE BG	BUTYLENE GLYCOL COCOATE	5,0	II
HALLBRITE BHB	BUTYLOCTYL SALICYLATE	5,0	II
SHEA BUTTER	BUTYROSPERMUM PARKII	2,0	II
PE9010	PHENOXYETHANOL (AND) ETHYLHEXYLGLYCERIN	0,5	III

Formulation Recipe:

(1) Heat phase I (water, NaCl) at 70°C.

(2) Add Xanthan gum to Phase I (≥55-60°C) with stirring until an homogeneous phase is obtained.

(3) Add the filter slowly to Phase I (T≥60°C) under stirring and heating. Stir during 20 minutes until an homogeneous dispersion is achieved.

(4) Melt phase II under stirring at 70°C.

(5) Add phase II to phase I when both phases are at 70°C, stirring during 10 minutes.

(6) Cool down the emulsion under stirring. Add the phase III when T≤35°C.

CREAM ADP18 (O/W)

INGREDIENTS	INCI	%	PHASE
WATER	AQUA	Q.S. 100	I
SODIUM CHLORIDE	SODIUM CHLORIDE	0,5	I
XANTHAN GUM	XANTHAN GUM	0,2	I
ADP FILTER	-	Depending on filter and expected SPF	II
MONTANOV-82	CETEARYL ALCOHOL (AND) COCOGLUCOSIDE	3.0	II
MONTANOV-L	C14-22 ALCOHOL (AND) C12-20 ALKYL GLUCOSIDE	1,5	II
MIRASIL DM50	DIMETHICONE	3,0	II
COCOATE BG	BUTYLENE GLYCOL COCOATE	5,0	II
HALLBRITE BHB	BUTYLOCTYL SALICYLATE	5,0	II
SHEA BUTTER	BUTYROSPERMUM PARKII	2,0	II
PE9010	PHENOXYETHANOL (AND) ETHYLHEXYLGLYCERIN	0,5	III

Formulation Recipe:

(1) Heat phase I (water, NaCl) at 70°C.

(2) Add Xanthan gum to Phase I (≥55-60°C) with stirring until an homogeneous phase is obtained.

(3) Melt phase II under stirring at 70°C.

(4) Add the filter slowly to Phase II (T≥60°C) under stirring and heating. Stir during 20 minutes until an homogeneous dispersion is achieved.

(5) (5) Add phase II to phase I when both phases are at 70°C, stirring during 10 minutes.

(6) Cool down the emulsion under stirring. Add the phase III when T≤35°C.

CREAM ADP19 (O/W)

INGREDIENTS	INCI	%	PHASE
WATER	AQUA	Q.S. 100	I
CARBOPOL 940	CARBOMER	0,15	I
ENHANCE U-S	ZINC OXIDE, TITANIUM DIOXIDE, SILICA	12,0	I
MONTANOV-82	CETEARYL ALCOHOL (AND) COCOGLUCOSIDE	3,0	II
MONTANOV-L	C14-22 ALCOHOL (AND) C12-20 ALKYL GLUCOSIDE	1,5	II
MIRASIL DM50	DIMETHICONE	3,0	II
COCOATE BG	BUTYLENE GLYCOL COCOATE	5,0	II
HALLBRITE BHB	BUTYLOCTYL SALICYLATE	5,0	II
SHEA BUTTER	BUTYROSPERMUM PARKII	2,0	II
SODIUM HYDROXIDE 18%	SODIUM HYDROXIDE 18%	qs	III
PE9010	PHENOXYETHANOL (AND) ETHYLHEXYLGLYCERIN	0,5	IV

Formulation Recipe:

(1) Heat phase I (water, NaCl) at 70°C.

(2) Add Xanthan gum to Phase I (≥55-60°C) with stirring until an homogeneous phase is obtained.

(3) Add the filter slowly to Phase I (T≥60°C) under stirring and heating. Stir during 20 minutes until an homogeneous dispersion is achieved.

(4) Melt phase II under stirring at 70°C.

(5) Add phase II to phase I when both phases are at 70°C, stirring during 10 minutes.

(6) Add sodium hydroxide 18% to neutralize Carbomer (pH 6-7).

(7) Cool down the emulsion under stirring. Add the phase III when T≤35°C.

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RECOMMENDATIONS

Recommendations

enhanceU-S

INGREDIENTS

- Avoid anionic ingredients (cations interaction at acidic pH).
- The viscosity of the final product can drop slightly with the preservative *“Phenoxyethanol (and) Ethylhexylglycerin” (eg. PE9010),* however its use is not forbidden.

MANUFACTURING EQUIPMENT

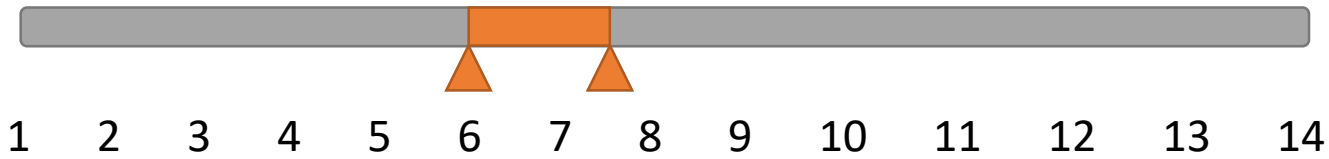
- The efficacy of the filter in the wide spectrum might be affected if the stirring speed is over 5000-8000rpm and high shear force is applied during the dispersion.

Recommendations

enhanceU-S

CONTINUOUS AGITATION DURING THE WHOLE MANUFACTURING PROCESS!

- pH*:



- The ***filter dispersion*** is key in the performance of the filter. Therefore the SPF value is dependant on how well the filter is dispersed.
- Continuous agitation at low-medium speed is recommended at the cooling step of the emulsion until the product reaches the room temperature.

*Based on recommendations for cosmetic applications.

Recommendations

enhanceU-T

INGREDIENTS

- The viscosity of the final product can drop slightly with the preservative *“Phenoxyethanol (and) Ethylhexylglycerin” (eg. PE9010),* however its use is not forbidden.
- Avoid glycols, because it might gain Fe (eg. Butylene glycol as a solubilizer, preservatives…)

MANUFACTURING EQUIPMENT

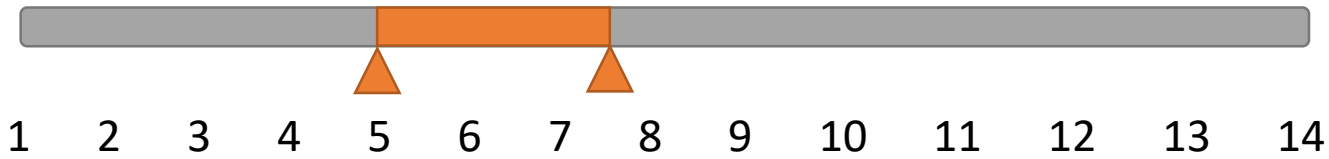
- The efficacy of the filter in the wide spectrum might be affected if the stirring speed is over 5000-8000rpm and high shear force is applied during the dispersion.

Recommendations

enhanceU-T

CONTINUOUS AGITATION DURING THE WHOLE MANUFACTURING PROCESS!

- pH*:



- The ***filter dispersion*** is key in the performance of the filter. Therefore the SPF value is dependant on how well the filter is dispersed.
- Continuous agitation at low-medium speed is recommended at the cooling step of the emulsion until the product reaches the room temperature.

*Based on recommendations for cosmetic applications.