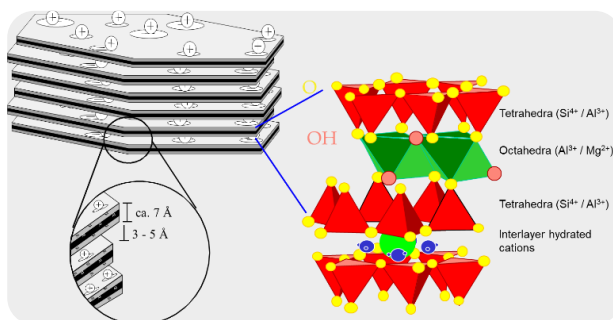


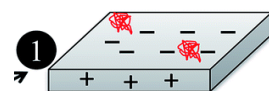
**Frametime technology:**  
Guideline Formulation 2024

## Introducing Frametime technology

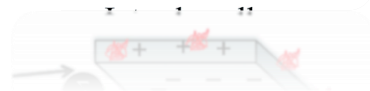
- Frametime is obtained by a surface modification of a natural multilamellar mineral, a bentonite.
- Bentonites forming Frametime are carefully selected and purified in order to fully meet the cosmetic international standard in terms of heavy metals and microbiological content.
- Xanthan Gum is used as organic modifier using an Ecofriendly process.
- Frametime comes under powder form and it is preservative free



Surface attachment



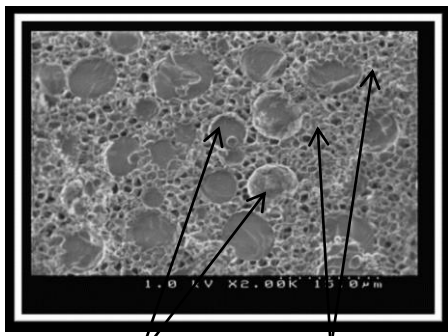
Edge attachment



## Introducing Frametime technology

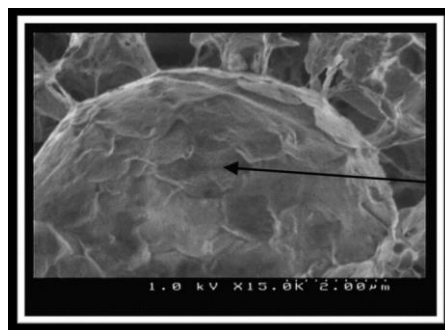
Frametime technology is designed to create a Pickering emulsion using a two steps stabilization process:

- First step: Frametime forms a layer preventing the coalescence of oil droplets. The oil phase is thus completely encapsulated into the mineral structure.
- Second step: Frametime creates a 3D network in the continuous phase like an honey comb structure. The network formation increases the stability of the emulsion reducing the movement of the discontinuous phase protecting, at the same time, the water soluble ingredients.

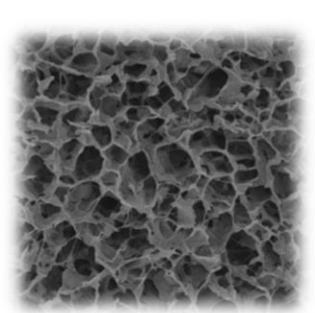


Oil droplets

Water phase



Oil droplet covered by  
Frametime plates



Frametime 3D  
network in the Water  
phase

## Frametime technology Benefits



### Skincare:

- Silkiness feels
- O/W Emulsion stabilization
- Non sticky, non greasy feel even with large amount of vegetable Oil
- Easily spreadable emulsion
- Active Ingredients encapsulations
- Hydration improvement
- TEWL reduction



### Water based Make-up (BB cream, foundation, mascara)









- Increase water – resistance
- Reduce pigments separation and settlement
- Increase pigment dispersion



### Water based Suncare:

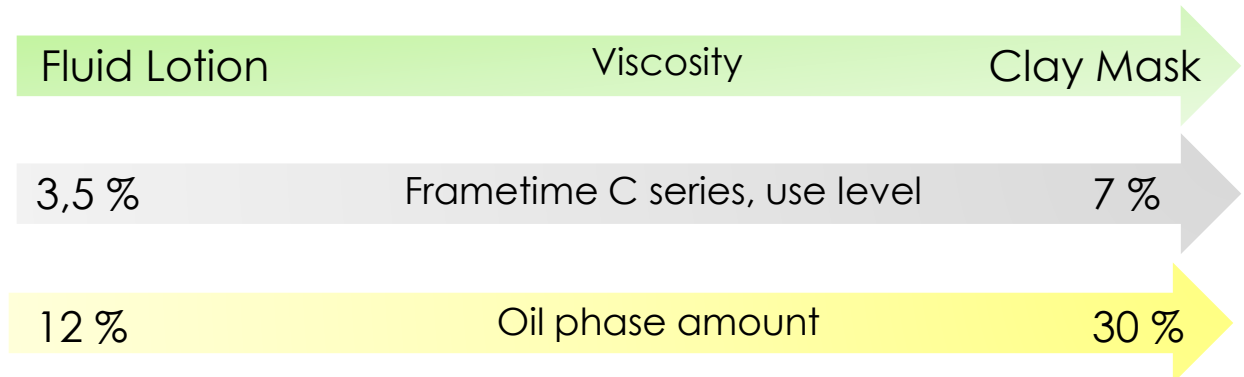
- Boost the Sun Protector Factor
- Reduce pigments separation and settlement

## Incorporation and equipment guideline

				
Mixing tool	Propeller	Planetary	Impeller - blade	Rotor-Stator
Shear developpement	Low	Medium	Medium-High	High
Suitability				
Speed rate		> 3000 rpm	> 3000 rpm	> 3000 rpm
Average Mixing Time		> 30 mins	10-15 mins	10-15 mins
Temperature		Water at up to 60°C (140°F) increases Frametime hydration rate improving the dispersion	From room Temperature to 90°C	Room Temperature to 90°C
Incorporation order		Pre-hydrate Frametime in water under vigorous stirring then add the other water soluble ingredients. Then add the oil phase using highest shear rate until completely homogeneous	Pre-hydrate Frametime in water under vigorous stirring then add the other water soluble ingredients. Then add the oil phase using highest shear rate until completely homogeneous  One pot emulsion feasible	Pre-hydrate Frametime in water under vigorous stirring then add the other water soluble ingredients. Then add the oil phase using highest shear rate until completely homogeneous  One pot emulsion feasible

## Incorporation and incompatibility guideline

### Application dosage



Best working pH	4-11
Electrolyte tolerance	Frametime offers a good tolerance to electrolytes. These latter should not be added until dispersion is completed.
Compatibility with a Co-emulsifier	Cetearyl Alcohol; specific waxes, amino acids create a good synergy
Thermal stability	10 -90 °C
Alcohol tolerance	Frametime offers a good tolerance to ethanol up to few percentage
Compatibility with a stabilizer	Charged polymer can interact strongly with Frametime structure causing a loss in stability. Natural thickening agent ( xhantan gum, alginate, aggr) offer a perfect stability
Cold vs Hot Process	Frametime can be used in both cold and hot emulsification process
Optimum oil phase concentrations	Frametime works best in medium oil phase range (12-30%)
Viscosity range	600 - 22000 mPa s

## Available grades and Applications

Commercial Name	INCI
Frametime CX	Bentonite & Xanthan gum & Citric acid
Frametime CXG	Bentonite & Xanthan gum & Sodium stearoyl glutamate & Citric acid
Frametime LTX	Sodium magnesium silicate & Xanthan gum & Citric acid

Frametime C series Applications	Frametime CX	Frametime CXG
Lotion - Milk (lower viscosity emulsion)	*	***
Standard Cream	**	***
Mask - Balm (higher viscosity emulsion)	***	**
Emulsifier free	***	*

Frametime LTX Applications for water borne systems	Use Level
Mineral transparent gel in water	0,5 -3 %
Active Ingredient delivery system	2 – 5 %
Texturizing agent	0,2 -1 %
Rheological agent (shear thinning)	0,2 – 0,6 %

## FAQ and Formulation tips

- Which is the HLB ? Frametime is physical emulsifier and not a chemical one. So HLB is not pertinent here
- Certified or not certified? Frametime CXG is COSMOS certified, Frametime CX and LTX are COSMOS ready
- Is it Natural ? 100% natural!
- At the lab scale, if your vessel is not equipped with an anchor with scrapers do not forget to use your spatula in order to remove the powder from the walls during mixing. If your blade fits well your vessel ( similar diameters) you will probably not need to use an external spatula.
- How I can avoid « peluchage » ? Since Frametime remains at the surface of the skin you need to reduce the use of film forming polymers which can roll the clay-plate and create a peluchage effect. In order to avoid peluchage you can add an amino acid such as Lauryl Lisine.
- How I can improve the play time ? Add a water solution of Urea 40%*m/m* at 1,5%
- How I can pass Freeze and Thaw tests? It is simple you need to prevent water to freeze. Add some glycols like glycerol and/or Propanediol
- Is it China Compliant? Yes it is

Customer (brand)	Ephyla
Formula Name	Daily cream
Formula Ref	EP_CDJ_F7

Phase	Commercial Name	%	INCI
A	Water	63,20	Aqua
B	<b>Frametime CXG (Ephyla)</b>	<b>5,00</b>	<b>Bentonite&amp;Xanthan gum&amp;Sodium stearoyl glutamate&amp;Citric acid</b>
B	<b>Regeneryl (Ephyla)</b>	<b>1,00</b>	<b>Montmorillonite&amp;Borojoa patinoi fruit juice&amp;Ulva lactuca extract</b>
B	Xivia C	1,50	Xylitol
C	Glycerin	2,50	Glycerin
C	Propanediol	4,00	Propanediol
C	<b>Ephylife (Ephyla)</b>	<b>1,00</b>	<b>Glycerin&amp;Anacardium occidentale (cashew) extract*</b>
C	<b>Vitamin D3-like (Ephyla)</b>	<b>1,00</b>	<b>Aqua&amp;Sodium citrate&amp;Saccharomyces/Grape ferment extract&amp;Sodium benzoate</b>
D	<b>Moringa oil (Ephyla)</b>	<b>4,00</b>	<b>Moringa oleifera seed oil</b>
D	<b>Organic desert date oil (Ephyla)</b>	<b>4,00</b>	<b>Balanites roxburghii seed oil</b>
D	<b>Ephyster ECR (Ephyla)</b>	<b>7,00</b>	<b>Brassica napus extract</b>
D	Lanette 22	1,70	Behenyl alcohol
D	Alcool cétostéarylique 50/50	0,30	Cetearyl alcohol
E	<b>Vitamin C Tetra E (Ephyla)</b>	<b>1,00</b>	<b>Ascorbyl tetraisopalmitate</b>
E	<b>Ephystem PID (Ephyla)</b>	<b>1,00</b>	<b>Propanediol&amp;Dimethyl isosorbide&amp;Aqua&amp;Caesalpinia sappan extract</b>
F	Preservative	0,80	/
G	Perfume	1,00	Parfum
		<b>100,00</b>	

Protocol
<p>1- Prepare A and B</p> <p>2- Add B to A phase and mix until completely homogeneous</p> <p>3- Prepare C, and add to AB phase, mix</p> <p>4- Prepare D</p> <p>5- Heat D phase to 50 - 55 °C, add D to ABC phase and mix until completely homogeneous</p> <p>6- Add E and mix</p> <p>7- Add F and G and mix</p>

FINAL PH : 4,8 - 5,5

<b>Customer (brand)</b>	Ephyla
<b>Formula Name</b>	Body Lotion
<b>Formula Ref</b>	EP_LC_F16

Phase	Commercial Name	%	INCI
A	Water	74,00	Aqua
A	Preservative	1,30	/
B	<b>Frametime CXG (Ephyla)</b>	<b>3,50</b>	<b>Bentonite&amp;Xanthan gum&amp;Sodium stearyl glutamate&amp;Citric acid</b>
B	Xanthan gum	0,20	Xanthan gum
B	Rice starch	1,00	Oryza sativa starch
C	Propanediol	2,00	Propanediol
C	Glycerin	2,00	Glycerin
D	<b>HTRE (Ephyla)</b>	<b>1,00</b>	<b>Helianthus annuus seed oil&amp;Canarium luzonicum gum nonvolatiles</b>
D	Oleic alcohol	3,00	Oleyl alcohol
D	<b>Organic desert date oil (Ephyla)</b>	<b>5,00</b>	<b>Balanites roxburghii seed oil</b>
D	<b>Ephyster ECR (Ephyla)</b>	<b>5,00</b>	<b>Brassica napus extract</b>
E	Perfume	1,00	Parfum
F	<b>Vitamin D3-like (Ephyla)</b>	<b>1,00</b>	<b>Aqua&amp;Sodium citrate&amp;Saccharomyces/Grape ferment extract&amp;Sodium benzoate</b>
		100,00	

Protocol
<p>1- Prepare A            2- Prepare B, add B to A phase and mix until completely homogeneous            3- Add C and mix            4- Prepare D and add to ABC phase and mix until completely homogeneous            5- Add E then F and mix between each ingredient</p>

**FINAL PH : 4,5 -5 ,3**

<b>Customer (brand)</b>	Ephyla
<b>Formula Name</b>	Spray serum
<b>Formula Ref</b>	EP_SSP_F6

Phase	Commercial Name	%	INCI
A	Water	85,70	Aqua
A	Preservative	1,30	/
B	<b>Frametime CXG (Ephyla)</b>	<b>3,00</b>	<b>Bentonite&amp;Xanthan gum&amp;Sodium stearoyl glutamate&amp;Citric acid</b>
C	Propanediol	2,00	Propanediol
D	<b>Ephyster ECR (Ephyla)</b>	<b>2,00</b>	<b>Brassica napus extract</b>
D	<b>Organic desert date oil (Ephyla)</b>	<b>3,70</b>	<b>Balanites roxburghii seed oil*</b>
D	<b>Alkanna tinctoria extract (Ephyla)</b>	<b>1,00</b>	<b>Helianthus annuus seed oil&amp;Alkanna tinctoria root extract</b>
D	<b>Vitamin C Tetra E (Ephyla)</b>	<b>0,50</b>	<b>Ascorbyl tetraisopalmitate</b>
D	<b>HTRE (Ephyla)</b>	<b>0,50</b>	<b>Helianthus annuus seed oil&amp;Canarium luzonicum gum nonvolatiles</b>
D	Perfume	0,30	Parfum
		100,00	

Protocol
<p>1- Prepare A            2- Add B to A phase and mix until homogeneous            3- Add C and mix            4- Prepare D and add to ABC phase and mix until completely homogeneous</p>

**FINAL PH : 4,5 -5 ,3**

<b>Customer (brand)</b>	Ephyla
<b>Formula Name</b>	Eye contour
<b>Formula Ref</b>	EP_CE_F6

Phase	Commercial Name	%	INCI
A	Water	64,9475	Aqua
B	<b>Acide hyaluronique HMW (Ephyla)</b>	<b>0,05</b>	<b>Sodium hyaluronate</b>
B	Xanthan gum	0,50	Xanthan gum
B	<b>Sensiteam BE (Ephyla)</b>	<b>1,00</b>	<b>Bentonite&amp;Lansea microcarpa fruit extract</b>
B	<b>Regeneryl (Ephyla)</b>	<b>1,00</b>	<b>Montmorillonite&amp;Borojoa patinoi fruit juice&amp;Ulva lactuca extract</b>
C	Glycerin	1,50	Glycerin
D	Lanette 22	2,50	Behenyl alcohol
D	<b>HTRE (Ephyla)</b>	<b>10,00</b>	<b>Helianthus annuus seed oil&amp;Canarium luzonicum gum nonvolatiles</b>
D	<b>Ephyster ECR (Ephyla)</b>	<b>4,00</b>	<b>Brassica napus extract</b>
D	<b>Organic desert date oil (Ephyla)</b>	<b>6,00</b>	<b>Balanites roxburghii seed oil</b>
D	Sunflower oil	2,00	Helianthus annuus seed oil
D	<b>Kokum butter (Ephyla)</b>	<b>3,00</b>	<b>Garcinia indica seed butter</b>
E	Unipure red LC381 EM	0,0025	CI 77491
F	<b>Vitamin C Tetra E (Ephyla)</b>	<b>1,00</b>	<b>Ascorbyl tetraisopalmitate</b>
F	<b>Ephystem PID (Ephyla)</b>	<b>1,00</b>	<b>Propanediol&amp;Dimethyl isosorbide&amp;Aqua&amp;Caesalpinia sappan extract</b>
G	Preservative	0,90	/
G	Perfume	0,60	Parfum
		<b>100,00</b>	

Protocol
<p>1- Prepare A and B</p> <p>2- Add B to A phase and mix until completely homogeneous</p> <p>3- Add C to AB phase and mix</p> <p>4- Prepare D</p> <p>5- Heat D phase to 70°C, add E to D phase and mix</p> <p>6- Add DE to ABC phase and mix until completely homogeneous</p> <p>7- Add F and mix</p> <p>8- Add G and mix</p>

FINAL PH : 7,0 - 7,5

<b>Customer (brand)</b>	Ephyla
<b>Formula Name</b>	Shampoo
<b>Formula Ref</b>	EP_SHL_F11

Phase	Commercial Name	%	INCI
A	Water	80,00	Aqua
A	Preservative	1,30	/
B	<b>Frametime CXG (Ephyla)</b>	<b>5,00</b>	<b>Bentonite&amp;Xanthan gum&amp;Sodium stearoyl glutamate&amp;Citric acid</b>
B	Xanthan gum	0,10	Xanthan gum
C	<b>Moringa oil (Ephyla)</b>	<b>0,50</b>	<b>Moringa oleifera seed oil</b>
C	<b>Organic desert date oil (Ephyla)</b>	<b>0,50</b>	<b>Balanites roxburghii seed oil</b>
C	<b>HTRE (Ephyla)</b>	<b>1,00</b>	<b>Helianthus annuus seed oil&amp;Canarium luzonicum gum nonvolatiles</b>
C	CosmeGreen ES1822+	1,00	Arachidyl/Behenyl betainate esylate&Arachidyl/Behenyl Alcohol
D	Organic rosemary CO2 extract oderless	0,60	Rosmarinus officinalis leaf extract*&Helianthus annuus seed oil*
D	Perfume	1,00	Parfum
E	Sodium coco-sulfate	9,00	Sodium coco-sulfate
		100,00	

Protocol
<p>1- Prepare A            2- Add B to A phase and mix until completely homogeneous            3- Prepare C            4- Heat C phase to 70 °C, add to AB phase and mix until completely homogeneous            5- Add D and mix            6- Solubilize E in 20% water phase A, heat to 80 °C            7- Add E to ABCD phase and mix gently</p>

FINAL PH : 4,7 - 5,3

Customer (brand)	Ephyla
Formula Name	Sunscreen SPF 50
Formula Ref	EP_CS50_F6

Phase	Commercial Name	%	INCI
A	Aloe vera gel	32,00	Aqua&Aloe barbadensis leaf juice powder
A	Water	6,50	Aqua
B	<b>Frametime CXG (Ephyla)</b>	<b>3,50</b>	<b>Bentonite&amp;Xanthan gum&amp;Sodium stearyl glutamate&amp;Citric acid</b>
B	Xanthan gum	0,10	Xanthan gum
B	<b>Ulvaprotect (Ephyla)</b>	<b>1,00</b>	<b>Bentonite&amp;Ulva lactuca extract</b>
B	Amisoft Hs-11p	0,25	Sodium stearyl glutamate
C1	Glycerin	6,00	Glycerin
C1	Propanediol	2,00	Propanediol
C2	Sea salt	1,00	Maris sal
D	Super Zinc Sheer Natural (Vizor)	20,00	Zinc oxide&Polyhydroxystearic acid
D	<b>Ephyster ECR (Ephyla)</b>	<b>15,00</b>	<b>Brassica napus extract</b>
D	<b>Organic desert date oil (Ephyla)</b>	<b>5,00</b>	<b>Rosmarinus officinalis extract&amp;Helianthus annuus seed oil</b>
D	<b>HTRE (Ephyla)</b>	<b>1,00</b>	<b>Helianthus annuus seed oil&amp;Canarium luzonicum gum nonvolatiles</b>
D	NS EX-81	1,00	Polyglyceryl-8 oleate
E	Lanette 22	2,00	Behenyl alcohol
F	Preservative	0,70	/
F	<b>Vitamin D3-like (Ephyla)</b>	<b>1,00</b>	<b>Aqua&amp;Sodium citrate&amp;Saccharomyces/Grape ferment extract&amp;Sodium benzoate</b>
F	Perfume	1,95	Parfum
		<b>100,00</b>	

Protocol
<p>1 - Prepare A phase</p> <p>2 - Add the B phase to A, and mix until completely homogeneous</p> <p>3 - Add C1 to AB, and mix. Add C2 to AB and mix</p> <p>4 - Prepare and heat the D phase at 70°C, homogenize during 30 min, until perfect dispersion of pigments</p> <p>5 - Add E to D and mix</p> <p>6 - Heat the ABC phase at 50 °C</p> <p>7 - Add ED to ABC and mix until completely homogeneous</p> <p>8 - When ABCDE &lt; 50°C, add F one by one, and mix between each ingredient</p>

**FINAL PH : 7,5 - 9,00**

Customer (brand)	EPHYLA
Formula Name	Solar balm
Formula Ref	EP_BSO_F2

Phase	Commercial Name	%	INCI
A	Organic desert date oil (Ephyla)	7,70	Balanites roxburghii seed oil*
A	Sunflower oil	5,00	Helianthus annuus seed oil
A	Ephyster ECR (Ephyla)	19,982	Brassica napus extract
A	Ephyster ECC (Ephyla)	20,00	Theobroma cacao extract
A	Glyceryl behenate	5,00	Glyceryl behenate
B	Super Zinc Sheer Natural (Vizor)	20,00	Zinc oxide&Polyhydroxystearic acid
C	OLO 3D (Ephyla)	10,00	Stearalkonium bentonite
C	Unipure red LC320	0,018	CI75470
C	Rice starch	5,00	Oryza sativa starch*
D	Triethyl citrate	5,00	Triethyl citrate
E	Perfume	2,00	Parfum
E	Organic rosemary CO2 extract	0,30	Rosmarinus officinalis leaf extract*&Helianthus annuus seed oil*
		100,000	

Protocol
<p>1- Prepare A and heat to 60°C</p> <p>2- Add B and heat to 70°C with stirring for 5 minutes</p> <p>3- Prepare C and mix</p> <p>4- Add C when the mixture is below 50°C and mix until the viscosity increases</p> <p>5- Add D and mix</p> <p>6- Add E and mix</p>

Customer (brand)	EPHYLA
Formula Name	Solar stick
Formula Ref	EP_SS_F1

Phase	Commercial Name	%	INCI
A	Ephyster ECR (Ephyla)	25,30	Brassica napus extract
A	Ephyster ECC (Ephyla)	25,00	Theobroma cacao extract
A	Beeswax	10,00	Cera alba*
A	Carnauba wax	10,00	Copernicia cerifera cera*
B	Super Zinc Sheer Natural (Vizor)	23,00	Zinc oxide&Polyhydroxystearic acid
C	Glyceryl behenate	5,00	Glyceryl behenate
D	Perfume	1,70	Parfum
		100,00	

Protocol
<p>1- Prepare A and heat to 70°C</p> <p>2- Add B to A phase homogenize during 20 min, until perfect dispersion of pigments (maintain the temperature at 70°C)</p> <p>3- Add C to AB phase and mix</p> <p>4- Add D to ABC phase and mix</p> <p>5- Add D and mix</p> <p>6- Fill the stick when the product is liquid (70°C)</p>

<b>Customer (brand)</b>	Ephyla
<b>Formula Name</b>	Dry oil
<b>Formula Ref</b>	EP_HS_F11

Phase	Commercial Name	%	INCI
A	Ephyster ECR (Ephyla)	36,20	Brassica napus extract
A	Ephyster ECC (Ephyla)	18,00	Theobroma cacao extract
A	Organic desert date oil (Ephyla)	20,00	Balanites roxburghii seed oil
A	Moringa oil (Ephyla)	20,00	Moringa oleifera seed oil
A	HTRE (Ephyla)	2,50	Helianthus annuus seed oil&Canarium luzonicum gum nonvolatiles
B	Vitamin C Tetra E (Ephyla)	1,00	Ascorbyl tetraisopalmitate
B	Organic rosemary CO2 extract	0,30	Rosmarinus officinalis extract&Helianthus annuus seed oil
B	Perfume	2,00	Parfum
		100,00	

Protocol
<p>1- Prepare A and homogenize</p> <p>2- Add B to A and homogenize</p>

Customer (brand)	EPHYLA
Formula Name	Balm
Formula Ref	EP_B_F8

Phase	Commercial Name	%	INCI
A	Organic desert date oil (Ephyla)	10,00	Balanites roxburghii seed oil*
A	Sunflower oil	5,00	Helianthus annuus seed oil
A	Ephyster ECR (Ephyla)	32,388	Brassica napus extract
A	Ephyster ECC (Ephyla)	20,00	Theobroma cacao extract
A	Kokum butter (Ephyla)	5,00	Garcinia indica seed butter
A	Glyceryl behenate	5,00	Glyceryl behenate
B	OLO 3D (Ephyla)	12,00	Stearalkonium bentonite
B	Unipure red LC320	0,012	CI 75470
B	Rice starch	5,00	Oryza sativa starch*
C	Triethyl citrate	3,00	Triethyl citrate
D	Perfume	2,00	Parfum
D	Organic rosemary CO2 extract oderless	0,60	Rosmarinus officinalis leaf extract*&Helianthus annuus seed oil*
		100,00	

Protocol
<p>1- Prepare A and heat to 70°C</p> <p>2- Mix B and add to A phase when the mixture is below 50°C and mix until the viscosity increases</p> <p>3- Add C and mix</p> <p>4- Add D and mix</p>

<b>Customer (brand)</b>	Ephyla
<b>Formula Name</b>	Bracing mint sorbet
<b>Formula Ref</b>	EP_ES_F4

Phase	Commercial Name	%	INCI
A	Water	78,65	Aqua
A	Methylene blue solution (0,5%)	0,05	Aqua&Basic blue 9
B	<b>Frametime LTA (Ephyla)</b>	<b>4,50</b>	<b>Agar&amp;Sodium magnesium silicate&amp;Xanthan gum&amp;Citric acid</b>
C	Propanediol	5,00	Propanediol
D1	<b>Organic desert date oil (Ephyla)</b>	<b>5,00</b>	<b>Balanites roxburghii seed oil*</b>
D1	<b>Moringa oil (Ephyla)</b>	<b>5,00</b>	<b>Moringa oleifera seed oil</b>
D1	Menthol	0,10	Menthol*
D1	Perfume	0,40	Parfum
D2	Questice fresh S	0,30	Menthyl lactate
E	Preservative	1,00	/
		100,00	

Protocol
<p>1- Heat A phase to 90°C</p> <p>2- Add B to A phase and mix until completely homogeneous (maintain the temperature at 80°C)</p> <p>3- Add C to AB phase and mix until completely homogeneous</p> <p>4- Prepare D1 and add D2 to D1.</p> <p>5- Add D1D2 to ABC phase and mix</p> <p>6- Add E when the temperature is below 45°C</p>

FINAL PH : 7,5 - 8,5

EPHYLA  
Natural Active Design



Do not hesitate to contact us



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