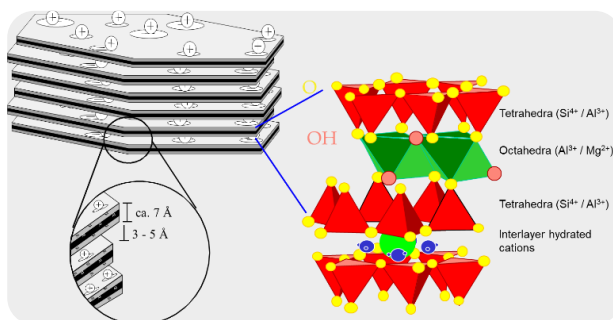


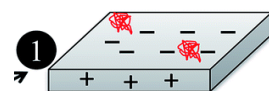
**Frametime technology:**  
Guideline Formulation 2020

## Introducing Frametime technology

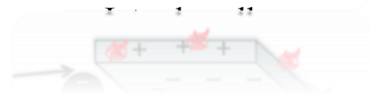
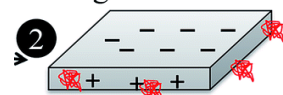
- Frametime is obtained by a surface modification of a natural multilamellar mineral, a bentonite.
- Bentonites forming Frametime are carefully selected and purified in order to fully meet the cosmetic international standard in terms of heavy metals and microbiological content.
- Xanthan Gum is used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



Surface attachment



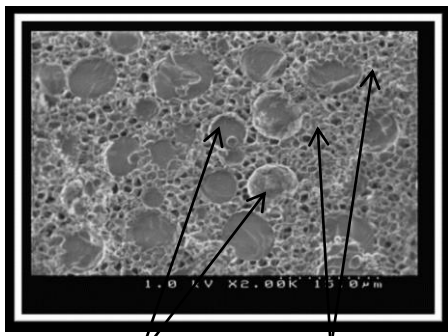
Edge attachment



## Introducing Frametime technology

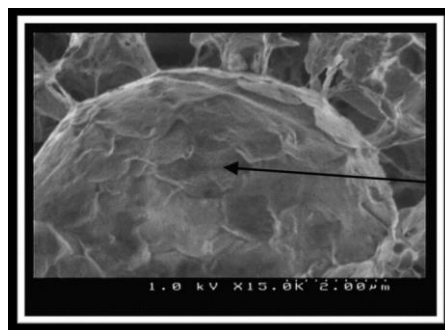
Frametime technology is designed to create a Pickering emulsion using a two steps stabilization process:

- 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.

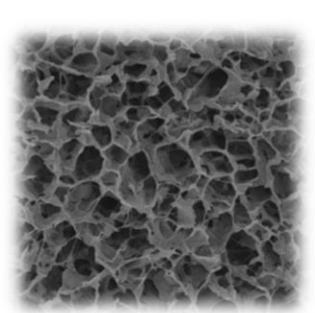


Oil droplets

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:

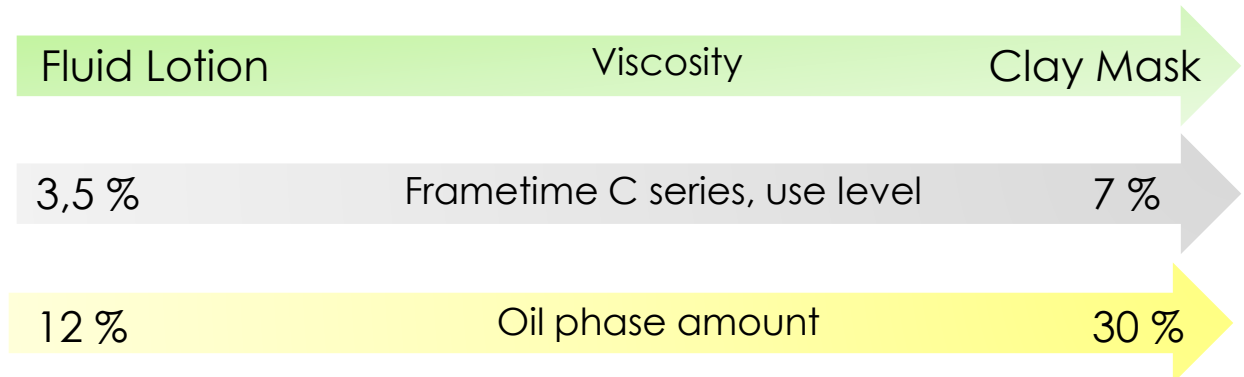
- Boost the Sun Protector Factor
- Reduce pigments separation and settlement

## 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

<b>Customer (brand)</b>	EPHYLA
<b>Formula Name</b>	Daily cream
<b>Formula Ref</b>	EP_CDJ_F5

Phase	Commercial Name	%	INCI
A	Water	63,05	Aqua
A	Frametime CXG (Ephyla)	5,00	Bentonite&Xanthan gum&Sodium stearoyl glutamate&Citric acid
A	Regeneryl (Ephyla)	1,00	Montmorillonite&Borojoa patinoi fruit juice&Ulva lactuca extract
A	Amihope LL	0,70	Lauroyl lysine
A	Xivia C	1,50	Xylitol
B	Glycerin	2,50	Glycerin
B	Propanediol	4,00	Propanediol
B	Lightderm Gly (Epyhla)	1,00	Glycerin&Balanites roxburghii seed oil
B	Ephylife (Ephyla)	1,00	Glycerin&Anarcadium occidentale extract&Alcohol
C	Lanette 22	1,50	Behenyl alcohol
C	Moringa oil (Ephyla)	4,00	Moringa oleifera seed oil
C	Organic desert date oil (Ephyla)	4,00	Balanites roxburghii seed oil
C	Oleic alcohol	2,00	Oleyl alcohol
C	Ephyster ECR (Ephyla)	6,00	Brassica napus extract
C	Vitamin C Tetra E (Ephyla)	1,00	Ascorbyl tetraisopalmitate
D	Preservative	0,95	/
E	Perfume	0,80	Parfum
		100,00	

Protocol
<p>Prepare A and mix until completely homogeneous. Add B and mix. Prepare C, heat to 50 - 55 °C, add to AB phase and mix until completely homogeneous. Add D and mix. Add E at the end and mix</p>

**FINAL PH : 4,8 - 5,5**

<b>Customer (brand)</b>	<b>Ephyla</b>
<b>Formula Name</b>	<b>Sunscreen SPF 50</b>
<b>Formula Ref</b>	<b>EP_CS50_F6</b>

Phase	Commercial Name	%	INCI
A	Aloe vera gel	32,00	Aqua&Aloe barbadensis leaf juice powder
A	Water	6,50	Aqua
B	Frametime CXG (Ephyla)	3,50	Bentonite&Xanthan gum&Sodium stearyl glutamate&Citric acid
B	Xanthan gum	0,10	Xanthan gum
B	Ulvaprotect (Ephyla)	1,00	Bentonite&Ulva lactuca extract
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	Ephyster ECR (Ephyla)	15,00	Brassica napus extract
D	Organic desert date oil (Ephyla)	5,00	Balanites roxburghii seed oil
D	HTRE (Ephyla)	1,00	Helianthus annuus seed oil&Canarium luzonicum gum nonvolatiles
D	NS EX-81	1,00	Polyglyceryl-8 oleate
E	Lanette 22	2,00	Behenyl alcohol
F	Preservative	0,70	/
F	Vitamin D3-like (Ephyla)	1,00	Aqua&Sodium citrate&Saccharomyces/Grape ferment extract&Sodium benzoate
F	Perfume	1,95	Parfum
		<b>100,00</b>	

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

**FINAL PH : 8,00 - 9,00**

<b>Customer (brand)</b>	<b>Ephyla</b>
<b>Formula Name</b>	<b>BB Cream</b>
<b>Formula Ref</b>	<b>EP_BBC_F45</b>

Phase	Commercial Name	%	INCI
A	Eau	44	Aqua
B	Frametime CXG (Ephyla)	3,5	Bentonite&Xanthan gum&Sodium stearyl glutamate&Citric acid
B	Ulvaprotect (Ephyla)	1	Bentonite&Ulva lactuca extract
B	Amisoft Hs-11p	0,25	Sodium stearyl glutamate
B	Xanthan gum	0,25	Xanthan gum
C1	Glycerin	6	Glycerin
C1	Propanediol	2	Propanediol
C2	Sea salt	1	Maris sal
D1	Super zinc natural (Vizor)	12,5	Zinc oxide&Polyhydroxystearic acid
D1	MST-1 YELLOW No.602P	0,8	Iron Oxide Yellow (CI 77492)&Magnesium stearate
D1	MST-1 RED No.211P	0,22	Iron Oxide Red (CI 77491)&Magnesium stearate
D1	MST-1 BLACK No.710P	0,08	Iron oxide black (CI 77499)&Magnesium stearate
D2	Ephyster ECC (Ephyla)	12	Theobroma cacao extract
D2	Organic desert date oil (Ephyla)	6	Balanites roxburghii seed oil
D2	Oleic alcohol	4	Oleyl alcohol
D2	HTRE (Ephyla)	1	Helianthus annuus seed oil&Canarium luzonicum gum nonvolatiles
D2	NS EX-81	1	Polyglyceryl-8 oleate
E	Lanette 22	2	Behenyl alcohol
E	Organic rosemary CO2 extract	0,2	Rosmarinus officinalis extract&Helianthus annuus seed oil
F	Preservative	0,7	/
G	Perfume	0,5	Parfum
H	Vitamin D3-like (Ephyla)	1	Aqua&Sodium citrate&Saccharomyces/Grape ferment extract&Sodium benzoate
		100	

**FINAL PH : 8,00 - 9,00**

**Protocol**

- 1 - Prepare A phase
- 2 - Add the B phase to A, and mix until completely homogeneous
- 3 - Add C1 to AB, and mix. Add C2 to AB and mix
- 4 - Prepare D1 and homogenize
- 5- Add D1 to D2 and heat at 70°C, homogenize during 30 min, until perfect dispersion of pigments
- 5 - Add E to D and mix
- 6 - Heat the ABC phase at 50 °C
- 7 - Add ED to ABC and mix until completely homogeneous
- 8 - When ABCDE < 50°C, add F, G and H , one by one, and mix between each ingredient

<b>Customer (brand)</b>	<b>Ephyla</b>
<b>Formula Name</b>	<b>Body Lotion</b>
<b>Formula Ref</b>	<b>EP_LC_F13</b>

Phase	Commercial Name	%	INCI
A	Water	73,00	Aqua
A	Preservative	1,30	/
B	Frametime CXG (Ephyla)	3,50	Bentonite&Xanthan gum&Sodium stearyl glutamate&Citric acid
B	Xanthan gum	0,20	Xanthan gum
B	Rice starch	1,00	Oryza sativa starch
B	Mica	1,00	Mica
C	Propanediol	2,00	Propanediol
C	Glycerin	2,00	Glycerin
D	HTRE (Ephyla)	1,00	Helianthus annuus seed oil&Canarium luzonicum gum nonvolatiles
D	Oleic alcohol	3,00	Oleyl alcohol
D	Organic desert date oil (Ephyla)	5,00	Balanites roxburghii seed oil
D	Ephyster ECR (Ephyla)	5,00	Brassica napus extract
E	Perfume	1,00	Parfum
F	Vitamin D3-like (Ephyla)	1,00	Aqua&Sodium citrate&Saccharomyces/Grape ferment extract&Sodium benzoate
		100,00	

Protocol
<p><b>Prepare A. Add B to A and mix until completely homogeneous. Add C and mix. Prepare D and add to ABC phase and mix until completely homogeneous. Add E then F and mix between each ingredient</b></p>

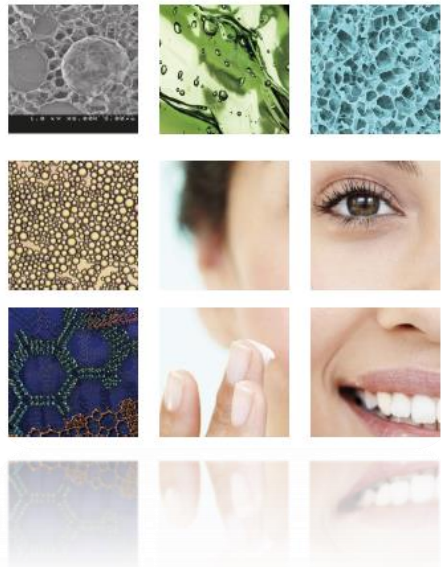
**FINAL PH : 4,5 -5 ,3**

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

Phase	Commercial Name	%	INCI
A	Ephyster ECR (Ephyla)	36,2	Brassica napus extract
A	Ephyster ECC (Ephyla)	18	Theobroma cacao extract
A	Organic desert date oil (Ephyla)	20	Balanites roxburghii seed oil
A	Moringa oil (Ephyla)	20	Moringa oleifera seed oil
A	HTRE (Ephyla)	2,5	Helianthus annuus seed oil&Canarium luzonicum gum nonvolatiles
B	Vitamin C Tetra E (Ephyla)	1	Ascorbyl tetraisopalmitate
B	Organic rosemary CO2 extract	0,3	Rosmarinus officinalis extract&Helianthus annuus seed oil
B	Perfume	2	Parfum
		100	

Protocol
Prepare A and homogenize. Add B to A and homogenise.

EPHYLA  
Natural Active Design



Do not hesitate to contact us



[contact@ephyla3.com](mailto:contact@ephyla3.com)