SOLAGUM™ AX
Combination of thickening
natural polymers
Where does SOLAGUM™ AX come from?

- SOLAGUM™ AX is a new combination of:
  - acacia gum
  - and xanthan gum
- The mixture has been optimized to obtain the best performance and is obtained from an innovative production process
- INCI name: Acacia Senegal Gum (and) Xanthan Gum
Where does SOLAGUM™ AX come from?

- Sustainable development concept
- Acacia gum is harvested in Africa in subsaharian region which represents one of its most important source of income
- This helps the inhabitants to adopt a sedentary lifestyle
- The picking is done by hands and is ecofriendly
- Acacia forest are a natural defense versus the desertification
- 100 % renewable
What are its characteristics?

Product profile:

- White to beige powder, no odor
- Density: 0.35-0.45
- Soluble in water
- Size: ~100 µm
## Specifications

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Specifications</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>white to beige fine powder</td>
<td>Visual</td>
</tr>
<tr>
<td><strong>pH into water at 1%</strong></td>
<td>5-7.5</td>
<td>NFT 73206</td>
</tr>
<tr>
<td><strong>Microbiology</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total germs</strong></td>
<td>&lt; 2000 cfu/g</td>
<td>ISO 4833</td>
</tr>
<tr>
<td><strong>Viscosity in water at 1%</strong></td>
<td>400-600 mPa.s</td>
<td>S 52417</td>
</tr>
</tbody>
</table>
**What is it used for?**

A natural easy to use thickener

**Visco-dose curve into water**

**Procedure:**

- **Weigh the water (at room temperature)**
- **Use the defloculator.**
- **Add the polymer into the water while stirring**
- **Let it homogenize 10 min between 1100 and 1300 rpm**
- **Use level: 0.1% to 3%**

- **Xanthan gum**
- **Solagum™ AX**
- **Acacia gum**

Diagram showing visco-dose curve with Brookfield viscosity (mPa.s) on the y-axis and dose (%) on the x-axis.
What is it used for?
A medium thickening power

Thickening power of xanthan gum alone
+

Thickening power of SOLAGUM™ AX

Thickening power of acacia gum alone (which does not thicken at all)

SOLAGUM™ AX will find a place in the field of natural thickening polymers in the cosmetic area.
What is it used for?

The aqueous gels containing **SOLAGUM™ AX** do not show any stringy texture ... as opposed to those containing **xanthan gum**.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Appearance of the gels</th>
<th>Jelly texture</th>
<th>Stringy texture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOLAGUM™ AX</strong></td>
<td>opalescent</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td><strong>Xanthan gum</strong></td>
<td>opalescent</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>
Valorization of SOLAGUM™ AX in 2 different cosmetic products formulations to point out the ease of use, the compatibility with the other ingredients and its versatility

Natural day cream 7158, a cream with astonishing sensorial attributes in accordance with ECOCERT® standard

Passion Jelly 7159, a facial foaming scrub that will provide an exotic fruity smoothness on the skin
### Natural day cream with SOLAGUM™ AX - 7158

<table>
<thead>
<tr>
<th></th>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>MONTANOVTM 202 (Arachidyl Alcohol and Behenyl Alcohol and Arachidyl Glucoside)</td>
<td>3 %</td>
</tr>
<tr>
<td></td>
<td>MONTANOV™ 14 (Myristyl Alcohol and Myristyl Glucoside)</td>
<td>1.5 %</td>
</tr>
<tr>
<td></td>
<td>Behenyl behenate</td>
<td>2 %</td>
</tr>
<tr>
<td></td>
<td>Butyrospermum parkii (bio)</td>
<td>1.5 %</td>
</tr>
<tr>
<td></td>
<td>Squalane</td>
<td>3 %</td>
</tr>
<tr>
<td></td>
<td>Glyceryl undecylenate</td>
<td>1.5 %</td>
</tr>
<tr>
<td></td>
<td>Simmondsia chinensis (jojoba) seed oil (bio)</td>
<td>3 %</td>
</tr>
<tr>
<td></td>
<td>Caprylyl capric triglyceride</td>
<td>3 %</td>
</tr>
<tr>
<td></td>
<td>Isopropyl isostearate</td>
<td>3 %</td>
</tr>
<tr>
<td>B</td>
<td>Aqua / water</td>
<td>Up to 100 %</td>
</tr>
<tr>
<td>C</td>
<td>SOLAGUM™ AX (Acacia senegal gum &amp; Xanthan gum)</td>
<td>0.6 %</td>
</tr>
<tr>
<td>D</td>
<td>Tocopherol</td>
<td>0.1 %</td>
</tr>
<tr>
<td></td>
<td>Water and Hordeum vulgare extract (bio)</td>
<td>11 %</td>
</tr>
<tr>
<td></td>
<td>Benzyl alcohol and Dehydroacetic acid</td>
<td>0.6 %</td>
</tr>
<tr>
<td></td>
<td>Aquaxyl™ (Xylitylglucoside and Anhydroxylitol and Xylitol)</td>
<td>3 %</td>
</tr>
<tr>
<td></td>
<td>Sodium levulinate</td>
<td>0.5 %</td>
</tr>
<tr>
<td>E</td>
<td>Sodium hydroxyde (24%)</td>
<td>Up to pH 5.0</td>
</tr>
</tbody>
</table>

**Procedure:**

Weigh ingredients of phase A then heat at 80°C – Introduce B in the main tank then heat at 80°C – Add C in A then put the mix (C+A) in water B – Emulsify – Cool down under agitating – Add ingredients of phase D one after one around 40°C – Adjust final pH with phase E if necessary
Characteristics:

Appearance: white liquid
pH after 1 month at RT: 5.1
Viscosity after 1 month at RT: 6 800 mPa.s BROOKFIELD LV speed 6
Viscosity after 1 month at 45°C: 3 450 mPa.s BROOKFIELD LV speed 6
Stability: more than 1 month at RT and 45°C

7158 – Natural day cream
### Procedure:

Weigh water – Add slowly SOLAGUM™ AX under mixing – Add slowly SEPINOV™ EMT10 in aqueous gel when homogeneous – Add ingredients phase B, one after one, under mixing – Measure pH and adjust if necessary.
Characteristics:

Appearance
Orange liquid

pH after 1 month at RT
7.1

Viscosity after 1 month at RT
6 100 mPa.s BROOKFIELD LV M3 speed 6

Viscosity after 1 month at 45°C
5 600 mPa.s BROOKFIELD LV M3 speed 6

Stability
more than 1 month at RT and 45°C

7159
Passion Jelly
Acacia senegal, also named “gommier blanc”, is a type of tree from Africa.

Arabic gum (acacia gum) comes from the exudate of the acacia senegal tree and is largely used in pharmaceutical, food, cosmetic and textile industries.

Picking is made by cutting the trunk and the branches of the tree. Wood is used to produce tools handles and high quality coal. The bark contains a large amount of tanins and is used in popular pharmacopeia for its astringent properties.
Acacia gum is a very grafted acid polysaccharide, mixture of potassium, magnesium and calcium salts. Monomer units of the free acid (arabic acid) are G-galactose, L-arabinose, L-rhamnose and D-glucuronic acid.

Acacia gum is generally composed of 2 fractions of 2 different polysaccharides. The molecular weight is between 200 000 and 300 000 Daltons. Even at high concentration, its thickening power is very low and it is used for its emulsifying power in the food industry (O/W emulsions).
How is it made?

Acacia gum

Acacia senegal

Structure of acacia gum

Proteinaceous core (1-5%)

AGP
The xanthan gum is produced by exogene fermentation of glucose or sucrose by Xanthomonas campestris. It is then precipitated from the medium by the addition of isopropyl alcohol. The precipitate is then dried and milled to the desired size.
The xanthan is a polysaccharide of very high molecular weight (one to several millions of Daltons). The main segment is composed of D-glucose on which are grafted several sided chains (one sided segment for 2 glucoses).

The lateral chains constituted of 3 sugars: α-D mannose, β-D glucuronique and α-D mannose at the end. Glucuronic and pyruvic acids give a very important anionic nature to the xanthan gum.
How is it made?
Xanthan gum

Structure of the xanthan gum
In the cosmetic area, the product can be put on the different markets worldwide:
- USA, Canada, Australia,
- Japan, China, Korea,
- New Zealands and Philippines.

Furthermore, SOLAGUM™ AX is agreed by ECOCERT®!
INCI name: Acacia senegal gum & Xanthan gum

- The first SEPPIC polymer certified by ECOCERT™
- New combination of thickening polymers from vegetable origin from an innovative production process
- Easy to use with a cold or a hot process
- Does not create any stringy effect in aqueous gels
- Ecofriendly product
Nota
The analytical specifications warranted are only those mentioned on the certificate of analysis supplied with each delivery of the product.

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