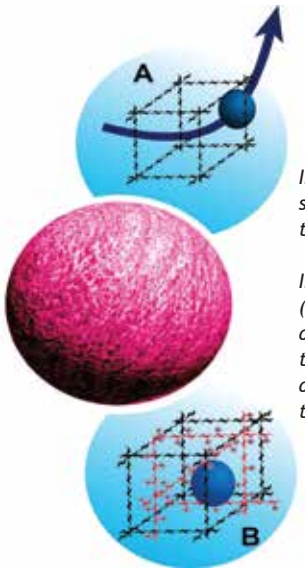
# Softspheres™

Agar is a natural polysaccharide, extracted from algae, able to form aqueous gels by natural cross-linking.

To be soft enough for being crushed onto the skin and deliver the entrapped active material, the gel should present a very large mesh size, which is not compatible with efficient retention of small molecules. Softspheres™ use the properties of a cationic and amphiphilic polymer, a copolymer to interact with active molecules by means of ionic bonds and / or hydrophobic interactions.

The complex is too large to move through the agar matrix and the bonded molecule is thus trapped within the soft bead.




*In a plain Agar bead (A), the mesh size of the matrix is too large to trap active molecules.*

*In a mixed agar/copolymer-bead (B, Softsphere™ structure), the active molecule is trapped within the bead by means of ionic bonds and hydrophobic interactions with the copolymer.*

## Composition

- Agar
- Restraining Polymer :
  - Polyquaternium-11
  - PG-Hydroxyethylcellulose Stearyldimonium Chloride
- Colorants / Pigments
- Active Ingredients / Oils / Vitamins / Fragrances / ...

## Size

- Size range : 1.0 to 2.8 mm
- 3 standard sizes :
  - a = 2.20 - 2.80 mm
  - b = 1.60 - 2.20 mm
  - m = 1.00 - 1.60 mm
- Stable in pH 2 - 10, in surfactants, at temperatures up to 60°C

## Applications

Examples of active ingredients we have successfully entrapped in Softspheres™:

- Anionic : colorants, hyaluronic acid
- Lipophilic : tocopherol, vitamin A, natural oils, ceramides
- Macromolecules : enzymes
- Pigments : iron, titanium & zinc oxides
- Miscellaneous : emulsions, fragrances

## Formulations

Recommended use levels range from 2.5 to 10% depending on the diameter.

- Transparent gel
- Shower gel & shampoo
- Emulsion
- Tooth Paste, soap

## After-Sun Gel

**KFL-082-BR**

**Part 1**

| | |
|---|---|
| • Deionized Water | 44.50% |
| • Aristoflex® Velvet - Clariant: *Polyacrylate Crosspolymer-11* | .50% |

**Part 2**

| | |
|---|---|
| • Glycerin- CAAL.: *Glycerin* | 40.00% |
| • CES-1104 - Nusil/Kobo Products: *Dimethicone (And) Water (Aqua) (And) Glycerin (And) Pentylene Glycol (And) Dimethicone/Vinyl Dimethicone Crosspolymer (And) Amodimethicone (And) Carbomer (And) Phenoxyethanol (And) Sodium Hydroxide (And) Disodium Edta* | 10.00% |

**Part 3**

| | |
|---|---|
| • Sp-VEaAVGrP41b - *Kobo Products: Water (And) Propylene Glycol (And) Agar (And) Polyquaternium-11 (And) Tocopheryl Acetate (And) Imidazolidinyl Urea (And) Aloe Barbadensis Leaf Juice (And) Mica (And) Titanium Dioxide (And) Chromium Hydroxide Green (And) Chromium Oxide Greens* | 2.50% |
| • Sp-VEaDC56b - *Kobo Products: Water (And) Propylene Glycol (And) Tocopheryl Acetate (And) Mica (And) Agar (And) Polyquaternium-11 (And) Imidazolidinyl Urea (And) Titanium Dioxide (And) Phenoxyethanol (And) Parabens (And) Iron Oxides (CI 77491)* | 2.50% |

**Manufacturing Procedure**

1. Mix Part 1 until it forms a clear gel at 900 rpm using a propeller.
2. Add Part 2.
3. Add Part 3 and mix at 100 rpm using a sweep blade.

**Description**

This after-sun gel features CES-1104 which gives a light and smooth feel for aqueous base formulations and a transformable texture: Light and watery at the beginning that turns into a velvety veil. It also has Softspheres™ that help to soothe the skin with encapsulated Aloe Vera and Vitamin E and provide an illuminating look.

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# Softspheres™

| Trade Name | Average Size (mm) | Color | Delivered Ingredients | INCI Name |
|---|---|---|---|---|
| New SpS-5coral56a<br>New SpS-5coral56b<br>New SpS-5coral56m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Pearlescent Tan | Tocopheryl Acetate | Water (And) Propylene Glycol (And) Pentylene Glycol (And) Mica (And) Tocopheryl Acetate (And) Polyquaternium-11 (And) Agar (And) Iron Oxides (CI 77491) (And) 1,2-Hexanediol (And) Caprylyl Glycol (And) Titanium Dioxide |
| New SpS-BkFeO41a<br>New SpS-BkFeO41b<br>New SpS-BkFeO41m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Black | - | Water (And) Propylene Glycol (And) Pentylene Glycol (And) Polyquaternium-11 (And) Agar (And) 1,2-Hexanediol (And) Caprylyl Glycol (And) Iron Oxides (CI 77499) |
| Sp-AOPL41a<br>Sp-AOPL41b<br>Sp-AOPL41m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Pearlescent Pink | Prunus Amygdalus Dulcis (Sweet Almond) Oil & Tocopheryl Acetate | Water (And) Propylene Glycol (And) Prunus Amygdalus Dulcis (Sweet Almond) Oil (And) Polyquaternium-11 (And) Agar (And) Imidazolidinyl Urea (And) Mica (And) Phenoxyethanol (And) PEG-40 Hydrogenated Castor Oil (And) Titanium Dioxide (And) Tocopheryl Acetate (And) Red 30 Lake (And) Parabens |
| Sp-BkFEB41a<br>Sp-BkFEB41b<br>Sp-BkFEB41m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Metallic Grey | - | Mica (And) Agar (And) Polyquaternium-11 (And) Titanium Dioxide (And) Iron Oxides (CI 77499) (And) Imidazolidinyl Urea (And) Propylene Glycol (And) Water |
| Sp-JbOTiO41a<br>Sp-JbOTiO41b<br>Sp-JbOTiO41m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | White | Simmondsia Chinensis (Jojoba) Seed Oil | Water (And) Propylene Glycol (And) Agar (And) Polyquaternium-11 (And) Simmondsia Chinensis (Jojoba) Seed Oil (And) Imidazolidinyl Urea (And) Phenoxyethanol (And) Titanium Dioxide (And) Parabens |
| Sp-SfOVEaUMDC41a<br>Sp-SfOVEaUMDC41b<br>Sp-SfOVEaUMDC41m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Pearlescent Blue | Tocopheryl Acetate & Helianthus Annuus (Sunflower) Seed Oil | Water (And) Propylene Glycol (And) Mica (And) Tocopheryl Acetate (And) Helianthus Annuus (Sunflower) Seed Oil (And) Agar (And) Polyquaternium-11 (And) Imidazolidinyl Urea (And) Ultramarines (And) Titanium Dioxide (And) Phenoxyethanol (And) Parabens |
| Sp-UM41a<br>Sp-UM41b<br>Sp-UM41m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Deep Blue | - | Water (And) Propylene Glycol (And) Agar (And) Polyquaternium-11 (And) Imidazolidinyl Urea (And) Ultramarines (And) Phenoxyethanol (And) Parabens |
| Sp-VApGP41a<br>Sp-VApGP41b<br>Sp-VApGP41m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Gold | Retinyl Palmitate | Water (And) Propylene Glycol (And) Agar (And) Polyquaternium-11 (And) Retinyl Palmitate (And) Imidazolidinyl Urea (And) Phenoxyethanol (And) Mica (And) Titanium Dioxide (And) Parabens (And) Iron Oxides (CI 77491) |
| Sp-VCTiOGH41a<br>Sp-VCTiOGH41b<br>Sp-VCTiOGH41m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Light Green | Magnesium Ascorbyl Phosphate | Water (And) Propylene Glycol (And) Agar (And) Polyquaternium-11 (And) Imidazolidinyl Urea (And) Phenoxyethanol (And) Chromium Hydroxide Green (And) Magnesium Ascorbyl Phosphate (And) Titanium Dioxide (And) Parabens |
| Sp-VCYOTR56a<br>Sp-VCYOTR56b<br>Sp-VCYOTR56m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Orange | Tocopheryl Acetate & Magnesium Ascorbyl Phosphate | Water (And) Propylene Glycol (And) Tocopheryl Acetate (And) Agar (And) Polyquaternium-11 (And) Imidazolidinyl Urea (And) Phenoxyethanol (And) Red 30 Lake (And) Magnesium Ascorbyl Phosphate (And) Iron Oxides (CI 77492) (And) PEG-40 Hydrogenated Castor Oil (And) Parabens |
| Sp-VEaAVGrP41a<br>Sp-VEaAVGrP41b<br>Sp-VEaAVGrP41m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Pearlescent Green | Tocopheryl Acetate & Aloe Barbadensis Leaf Juice | Water (And) Propylene Glycol (And) Agar (And) Polyquaternium-11 (And) Tocopheryl Acetate (And) Imidazolidinyl Urea (And) Aloe Barbadensis Leaf Juice (And) Mica (And) Titanium Dioxide (And) Chromium Hydroxide Green (And) Chromium Oxide Greens |
| Sp-VEaDC56a<br>Sp-VEaDC56b<br>Sp-VEaDC56m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Pearlescent White | Tocopheryl Acetate | Water (And) Propylene Glycol (And) Tocopheryl Acetate (And) Mica (And) Agar (And) Polyquaternium-11 (And) Imidazolidinyl Urea (And) Titanium Dioxide (And) Phenoxyethanol (And) Parabens (And) Iron Oxides (CI 77491) |
| Sp-VEaTR41a<br>Sp-VEaTR41b<br>Sp-VEaTR41m | 2.2 - 2.8<br>1.6 - 2.2<br>1.0 - 1.6 | Red | Tocopheryl Acetate | Water (And) Propylene Glycol (And) Polyquaternium-11 (And) Agar (And) Imidazolidinyl Urea (And) PEG-40 Hydrogenated Castor Oil (And) Phenoxyethanol (And) Tocopheryl Acetate (And) Red 30 Lake (And) Parabens |