

# Glycospheres-GTs

## The benefits of green tea delivered to the skin



### Green Tea Extract

Most of the medicinal properties attributed to green tea come from flavonoids. Numerous studies have shown these polyphenols, mostly gallic catechin, epigallocatechin, epicatechin and epigallocatechin gallate in green tea, to have protective effects against free radicals, cardiovascular damage and even cancers and infections. Considering their well-documented antioxidant and anti-inflammatory activities, green tea polyphenols are likely to slow down the development of some signs of aging. They may also synergistically enhance sun damage protection by quenching free radicals and reducing inflammation. Green tea extracts are also composed of caffeine, minerals and amino acids.

Like most antioxidants, green tea extracts can be oxidized and react to some constituents of cosmetic formulas.

### Glycospheres-GTs

Glycospheres are submicron delivery systems. They can entrap plant extracts such as green tea within their hydrophilic inner core, separating them from the constituents of the formulas and protecting them from degradation.

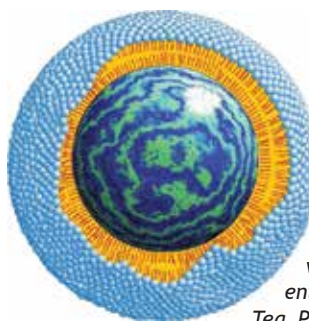
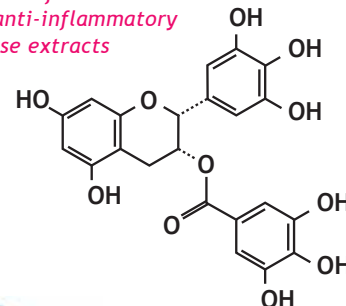
### In vitro test - NBT test:

We used Nitroblue Tetrazolium (NBT) in vitro test to demonstrate the ability of Green Tea extract to inhibit the formation of the superoxide radical ( $O_2^{\cdot-}$ ), generated by UV light during the test (note: the results below are expressed as relative activity compared to GT in solution).

- Solution of Green Tea extract: 100%
- Glycospheres-GT: 421%

Green extracts show a very high level of activity against superoxide radical. However, it appears that, during the test, when the solution is irradiated to generate the radical, green tea polyphenols are not stable. On the contrary, Glycospheres-GT, which remain stable during the test, exhibit a relative activity more than four times higher.

*Epigallocatechin gallate, one of the polyphenols found in green tea extracts, responsible for the antioxidant and anti-inflammatory properties of these extracts*



Glycospheres are based on a stable inner core, made of a network of cross-linked starch. This polysaccharide has been modified with a quaternary ammonium, which allows it to bind and entrap poly-anions like Green Tea Polyphenols. The core is surrounded by lipid layers which helps protect the entrapped molecules.

### INCI name:

Water (And) Pentylene Glycol (And) Palmitoyl Hydroxypropyltrimonium Amylopectin/Glycerin Crosspolymer (And) Camellia Sinensis Leaf Extract (And) 1,2-Hexanediol (And) Caprylyl Glycol (And) Hydrogenated Lecithin

### Applications

- Gs-GTs is used as a free-radical scavenger in anti-aging or anti-inflammatory products, regenerating creams or slimming products
- Gs-GTs is best formulated by replacing part of the water in the formula by the Glycosphere suspension
- Recommended use level is between 1 and 5%

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KFL-131B

# Hand/Foot Lotion for Men with MAKIMOUSSE

## Part 1

- SunBoost ATB - Kobo Products: *Argania Spinosa Kernel Oil (And) Tocopheryl Acetate (And) Bisabolol* 5.00%
- Eutanol® G - BASF: *Octyldodecanol* 5.00%
- Standapol® ES-2 - BASF: *Sodium Laureth Sulfate* 2.50%
- Cetiol® SB 45 - BASF: *Shea Butter* 2.00%
- Jeeteric CAB-LC - Jeen International: *Water (And) Cocamidopropyl Betaine* 0.50%

## Part 2

- MSS-500W - Kobo Products: *Silica* 1.00%

## Part 3

- Deionized Water - *Water* 70.40%
- JEECID® CAP-7 - Jeen International: *Caprylyl Glycol (And) Glyceryl Laurate (And) Glyceryl Undecylenate* 1.30%

## Part 4

- Glycerin U.S.P. Natural 96% - Univar USA Inc.: *Glycerin* 7.90%
- MAKIMOUSSE 7 - Daito/Kobo Products: *Sodium Polyacrylate Starch* 3.00%

## Part 5

- CES-1104 - Avantor/Kobo Products: *Dimethicone (And) Water (And) Glycerin (And) Pentylene Glycol (And) Dimethicone/Vinyl Dimethicone Crosspolymer (And) Amodimethicone (And) Carbomer (And) Phenoxyethanol (And) Sodium Hydroxide (And) Disodium Edta* 1.00%

## Part 6

- Gs-VE - Kobo Products: *Water (And) Palmitoyl Hydroxypropyltrimonium Amylopectin/Glycerin Crosspolymer (And) Phenoxyethanol (And) Tocopherol (And) Parabens (And) Hydrogenated Lecithin* 0.10%
- Gs-VACE - Kobo Products: *Butylene Glycol (And) Water (And) Palmitoyl Hydroxypropyltrimonium Amylopectin/Glycerin Crosspolymer (And) Phenoxyethanol (And) Ascorbic Acid (And) Parabens (And) Hydrogenated Lecithin (And) Tocopherol (And) Polysorbate 20 (And) Retinol (And) BHT (And) BHA* 0.10%
- Gs-GTS - Kobo Products: *Water (And) Pentylene Glycol (And) Palmitoyl Hydroxypropyltrimonium Amylopectin/Glycerin Crosspolymer (And) Camellia Sinensis Leaf Extract (And) 1,2-Hexanediol (And) Caprylyl Glycol (And) Hydrogenated Lecithin* 0.10%
- Fragrance CE-181718 - Custom Essence: *Fragrance* 0.10%

## Manufacturing Procedure:

1. Combine Part 1 under slow sweep. Heat to 45°C.
2. Combine Part 2 slurry and add to Part 1 under slow sweep.
3. Slowly add Part 3 to batch and switch to prop mix.
4. Slowly add Part 4 slurry to batch, continue to prop mix.
5. Slowly add Part 5 to batch until uniform.
6. Add Part 6 to batch.

## Description:

This men's hand and foot lotion effectively moisturizes the skin. MAKIMOUSSE 7 is used to thicken and give body to the formula while SunBoost ATB, a mixture of antioxidant, anti-irritant and anti-inflammatory agents, conditions skin. CES-1104 leaves a nice silky film on the skin after washing. MSS-500W is a silica microsphere responsible for enhanced feel. Glycospheres, Gs-GTS, Gs-VACE and Gs-VE, provide anti-aging properties.