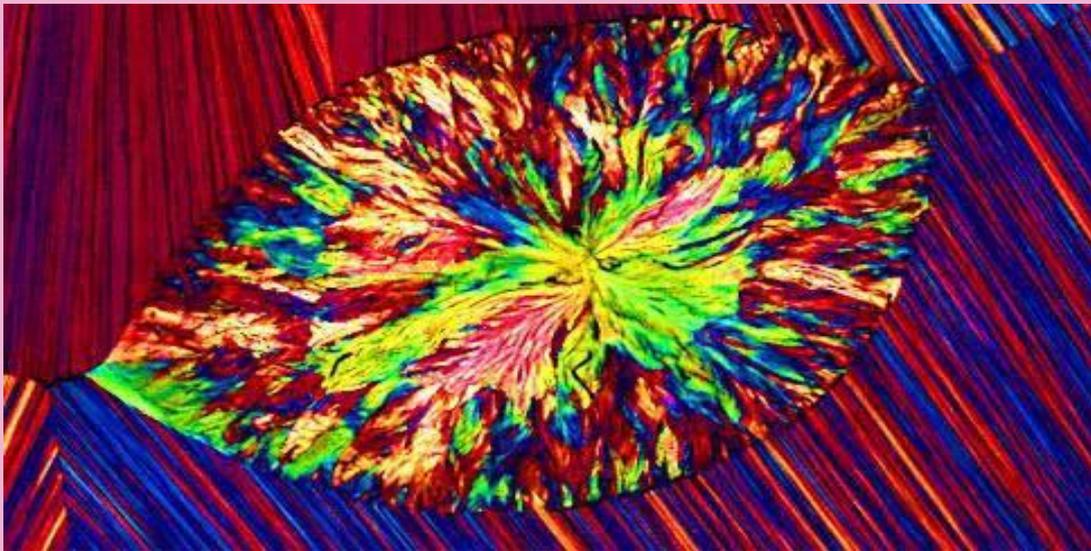


# **Biotechnological Herbal Cholesterol**



**Novel functional ingredients for  
multi-purpose formulations**



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CAMPO® Multi-Purpose Cosmetic Base Chemicals & Active Ingredients

CAMPO® Novel Functional Active Cosmetic Ingredient & Raw Materials

# Campo Research

***Biotechnologic herbs' eextracts for alternative animal-identical & human-skin identical functionally active - cosmetic ingredients as true non-cruelty replacement for cruel animal-based cosmetic ingredients & raw materials.***

## **Product Information**

**BIOTECHNOLOGIC HERBS** and Plants are novel State-of-Art Plants and Herbs, which are genetically manipulated with DNA and viable Genes from sources in Animal Kingdom.

The resultant Biotechnologic hybrids are identical to the normal species of plants, but certain parts of these Biotechnologic species exhibits the required necessary properties and functions which are previously possibly obtained only from 'cruelty to animal-sources' such as placental, Hyaluronic acid, lipids, collagens, foetal extracts, and many others.

Biotechnologic Herbs Extract as an Alternative Animal-Identical and Human-Skin Identical Cosmetic Ingredients are a true novel replacement and cruelty-free alternative to the "Animal-Cruelty" sourced functional cosmetic ingredients.

Campo® Vegetal CHOLESTEROL Extracts which is VCE in short is extracted from Mexican Skin-Tree inner-bark cells which are genetically manipulated with BOVINE-WOOL-WAX & LIPIDS forming Cells'- DNA scripts (from genetic material that is responsible for the formation of the sterol).

As Mexican Skin-Tree (*Mimosa tenuiflora*) as a skin-and hair-regeneration traditional remedy is well known in catastrophic events of Mexican Gas Explosion in 1984 and Mexico City Earthquake in 1987. When in both cases, a million burn victims were treated for severe to light burn skin-conditions, as medical supplies were non- existent, in these 2 national disasters, with the Mexican Tepescohuite, which in Spanish simply means Skin-Tree.

The Biotechnologic Mexican Skin-Tree cells are novelty which are more prolific and enhanced in its activity of re-generation of the cellular structures and contains a cocktail of sterols - high molecular weight alcohol characterised structurally by the presence of a saturated phenanthrene ring systems, having an additional five membered ring fused at the 1,2 position.

The principal sterol being Cholesterol occurring in its free state and or as fatty acid esters, identical, in cholesterol formation and functions as to that presently found viable and exclusively only in the animal sources.

In general, these vegetal cholesterol are identical in its moisturising and emulsified water retention to the skin functions and in its many other characteristics as the animal sourced cholesterol; which functions by holding emulsified water to the skin as a moisturiser in similar manner as the human-skin lipids.

Vegetal Cholesterol has the unique character to impart its property as above mention, to other waxes and fats in a formulary; apart from this moisturising, Vegetal Cholesterol aids in modifying the occlusiveness of the fatty and oily films, as the natural human-skin cholesterol functions does.

Vegetal Cholesterol is positively as known from various tests and assays is a natural Animal-Cruelty-Free and Human skin-identical natural emollient and moisturiser of the skin.

Vegetal Cholesterol is water in oil emulsifying agent, which may be used as a primary emulsifier in water in oil ointment, creams and lotions.

Vegetal Cholesterol is a primary non-irritation and can be safely recommended for reducing the irritation and defatting action of soaps and detergents. Tests have shown that Vegetal Cholesterol in the soap lather in the emulsified form can readily penetrates the epidermis and imparts suppleness.

Vegetal Cholesterol can be used in "All Cruelty Free" skincare preparation, as an emollient moisturising additive, which exhibit unique surface activity, emollience, superfatting properties and can be incorporated in as a functional additive for medicated and non-medicated shampoos, cleansing, cold, nourishing, moisturising hair preparation and other skin preparations for skin-softening and improving skin textures.

Therefore, the functional Alternative Animal-Identical and Human-Skin-identical Biotechnological vegetal sourced novel active cosmetic ingredients presents a uniquely viable marketing strategy in an era of Anti-Animal Vissisection & Cruelty-Free and Vegan - & Green consciousness. VCE as active ingredients which are uniquely functional and active in formulations:

***Anti-cellulite, body contour reflex, treatment of body-zones with weak connective tissues, massage formulations, facial skin re-generation, skin & bruises rapid healing, after-shaves, after-sun, anti-acne treatment, day & night moisturisers, insect-bite-anti-irritation; snow & sun chapped irritated skin, regeneration & reversing of aged skin; and baby-skin formulas.***

Other non-specific functions are decrease in the water evaporation and increase in moisture-absorbency/retention rate of corny layer which is re-adjusted to a silky smooth surface instead hard, corny, unregulated, and uneven surface of the skin.

VCE can be manufactured to USPXXVII (NMMII) specification on custom-request.

**CAMPO R&D BIOTECHNOLOGICAL** Cosmetic Ingredients Div.

# Campo Research

***Biotechnological herbs' eextracts for alternative animal-identical & human-skin identical functionally active - cosmetic ingredients as true non-cruelty replacement for cruel animal-based cosmetic ingredients & raw materials.***

## VCE Product Specification

### USPXXII/NFXVII Specification

<b>Product Name:</b>	<b>Campo Muthu-Thulasi<sup>®</sup> Cholesterol 10</b> (USP/NF Equivalent)
Syn. Name:	Vegetal Cholesterol Extract (Bovine-Identical)
CTFA/INCI Name: (proposed)	Cholesterol Extract
Product #:	Biotechnologic Cholesterol 10 equal USP/NF
Appearance (25°C)	white crystalline powder
Solubility (1% in ETOH)	no deposit or turbidity after solubilising
Melting point (By capillary)	147-150°C
Specific rotation (2% in dioxane)	-38 to -34 deg.
Acidity (0.5M sulfuric)	0.3 ml max
Loss on drying (1g)	0.3%
Sulfated ash	0.1%

### Microbiological characteristic

Total aerobic bacteria	100 opg max
Yeasts & moulds	100 opg max
Gram-negative bacteria	not detected/nil
Shelf life:	approx. > 24 months

### CAMPO R&D

BIOTECHNOLOGIC Cosmetic Ingredients Div.

# Campo Research

***Biotechnologic herbs' extracts for alternative animal-identical & human-skin identical functionally active - cosmetic ingredients as true non-cruelty replacement for cruel animal-based cosmetic ingredients & raw materials.***

## VCE Product Specification

### Specification

<b>Product Name:</b>	<b>Campo Muthu-Thulasi ® Cholesterol 10 SE</b>
Syn. Name:	Vegetal Cholesterol Extract (Bovine-Identical)
Product #:	Biotechnologic Cholesterol 10 SE
CTFA/ INCI Name (proposed)	Cholesterol Extract
CAS #	
EINECS NAME	
EINECS #	
Appearance (25°C)	yellow viscous liquid
Odor (physical)	slight characteristic
Color (gardener)	2.5 max
Acid value (BS 684)	0.05 max
Saponification value (BS684 at 4 hours)	85 - 107.0
Hydroxyl value	5.00 max
Iodine value (WIJ's)	20.00 - 36.00
Volatile (%) (5g 105°C at 1 hour)	0.30% max
Ash %	0.100 % max
Heavy metal (PPM)	20 max
Arsenic (PPM)	2 max
Water content (Karl Fisher)	1-% max
Shelf life:	approx. > 24 months

### **CAMPO R&D**

BIOTECHNOLOGICAL Cosmetic Ingredients Div.

## **VEGETAL LANOLIN - THE FUTURE ???**

**An overview of the present position of vegetable derived lanolin with regard to its physical quality, purity, allergenicity and effectiveness in comparison to animal-derived lanolin**

### **Introduction**

**Vegetable Lanolin** is not described nor specified in any national or intra-regional or international pharmacopoeias. However these non-specifications for **vegetal lanolin or vegetable lanolin** in pharmacopoeias give very little insight into the advanced materials - (**Vegetable Lanolin** also referred to as **Vegetal Lanolin**) produced by modern biotechnological advances in mass-tissue-culture of Biotechnologic olive fruit cells. While the specifications for animal-derived Lanolin contained within official standards such as BP, PhEur, USP, JP etc have changed very little in the last twenty-five years. On the other hand, the demand for **'true green and natural'** with safer; with ever better quality and purity, channels the demand and availability of competitive Biotechnologic vegetal-origin materials, that are **'easy on the collective conscious mind of green consumer's'**; have resulted in considerable developments in Biotechnologic vegetable lanolin technology. These changes were stimulated by the exclusive close relationship between **vegetable lanolin manufacturer - Campo** and the cosmetics & pharmaceutical industry. Because pharmacopoeial review is very slow process, many of these quality enhancements are not yet integrated into the pharmacopoeias - some probably never will be in the present century. Accordingly, formulators who are not conversant with the situation will be given a false impression of modern **vegetable lanolin** if the vegetable lanolin and its specification are not quoted in these 'official' sources are regarded as definitive 'negative' status.

### **Color and Odor**

For animal derived lanolin, neither of these parameters (color and odor) are quantitatively defined in the pharmacopoeias. Color is usually described as 'yellow' and the odor defined as 'characteristic'. These descriptions are quite meaningless to the formulator and do not provide an acceptable threshold of acceptability. This allows for a variety of qualities of animal derived lanolin to be available within the marketplace and on balance, gives a poor impression of the very high qualities of **vegetable lanolin** which are now available.

In order to establish a quantitative definition of color, **vegetable lanolin** users (most of Campo's Clients) agree on the use of the Gardner color scale as the most practical method of color control. Most manufacturers of animal lanolin are quite capable of providing material with Gardner colors of 8,9 or 10. These are typical of the cosmetic and pharmaceutical grades used over the last 25 years. However, to the contrary, in **vegetable lanolin** production, lower color intensity level of 8,7, 6, 5, 4, 3 and **specialty vegetal lanolin** with colors of much lower levels are available.

In regard to odor, the modern **vegetable lanolin** standard is essentially odorless. Animal lanolin manufacture requires automatically to incorporate a de-odorisation step which results in toxic chemicals waste streams which are environmentally undesirable and lack of odor is a prerequisite for almost all lanolin users (animal derived and vegetable derived) users. The traditional principle of a 'characteristic' odor is simply not acceptable. Now, more with the advent of the **novel vegetable-derived animal-identical lanolin of Biotechnologic means**, odorless has become the standard for even for animal lanolin.

The quantitation of odor using electronic sensing devices is seen to be the logical next step and we at Campo has arrived at its threshold and are working closely with the Japanese partner- a world leader in such technology.

### **Purity**

Like many other natural derivatives and the animal derived lanolin; to which the **vegetable derived lanolin** has been compared with; and criticized over possible contamination with traces of pesticides. The animal derived lanolin market has today established a standard of purity which, in broad terms, equates with the regulations covering foodstuffs. Indeed, naturally the purity of **modern vegetable lanolin** astronomically exceeds the standards required in the food area and animal-derived lanolin's' area and is rigorously tested using the most sophisticated analytical techniques to support its **(vegetal lanolin)** "as **no pesticides used**".

Pesticides are not required in tissue culture callus cultivation of the olive fruit cells. On the other hand, for animal-derived lanolin, the need for pesticide residue purity has recently been recognized by the United States Pharmacopoeia (USP) and a revised specification is now in place and which provides appropriate assurances on pesticide residues. Indeed, two new specifications have been issued for animal-derived lanolin. The one covering pharmaceutical/medical applications ('Modified Lanolin USP') contains a residual pesticide specification of 3 PPM maximum total for all pesticide component substances and no individual substance shall exceed 1 PPM.

The European Pharmacopoeia (PhEur) has issued a revised specification for animal-derived lanolin during 1996. The residual pesticide (PhEur) specification will equate with the 3/1-PPM limits of USP.

In the **vegetable lanolin** arena, pesticide residual do not exists and is considered an antiquated past to screen for pesticide for modern vegetable lanolin's available from Campo.

### **Allergy**

Sulzberger in New York conducted the first scientific study into the allergenicity of animal derived lanolin during the early 50's. The study involved over one thousand people who were regularly attending New York University Hospital, Skin and Cancer Unit. All patients were suffering from eczematous skin conditions. Animal derived lanolin based creams had been used for many years to treat these conditions and most patients improved through its use. However, the study showed that 1.14-% of these particular patients showed an adverse reaction to lanolin. Sulzberger presented his findings in two reports dated 1950 and 1953 (1,2). The cosmetics/pharmaceutical press published the results, and concluded that over 1% of the general population of New York were allergic to animal-derived lanolin! The following 30 years, animal lanolin was known to be an allergen. The result - Specific **lanolin allergy**, (3) and the manufacture of so called hypoallergenic animal lanolin has been established to provide for these situations.

Hypoallergenic animal-derived lanolin is material containing a reduced level of free lanolin alcohols, the component believed to contain the **allergenic factor-excessive free lanolin alcohols** (4). The USP has acknowledged the value of such an animal-derived lanolin grade and incorporated the relevant parameters into the 'Modified Lanolin' monograph (as limit of maximum 6% free lanolin alcohol).

In the case of **vegetable-derived lanolin**, as the free lanolin alcohol is totally non-existent and nil, as the Biotechnologic olive fruit cells' genetic makeup are inhibited from producing any free lanolin alcohols in the complex mechanism to produce vegetal lanolins.

### **Effectiveness**

**Vegetable lanolin** is a truly multifunctional material, though its supreme emolliency is perhaps its best-known property. Its ability to moisturize the skin as true human-identical moisturizing factor is no doubt related to its water binding capacity and its skin-substantive enzymatic functions.

Campo-manufactured **vegetable lanolins** can meet the aspect is that is legislated for animal lanolin by the water absorption tests demanded by BP and PhEur. Most grades of animal derived lanolin and lanolin derivatives have inferior water holding capacity and will therefore be less effective moisturizers like that of animal-derived lanolin BP /PhEur.

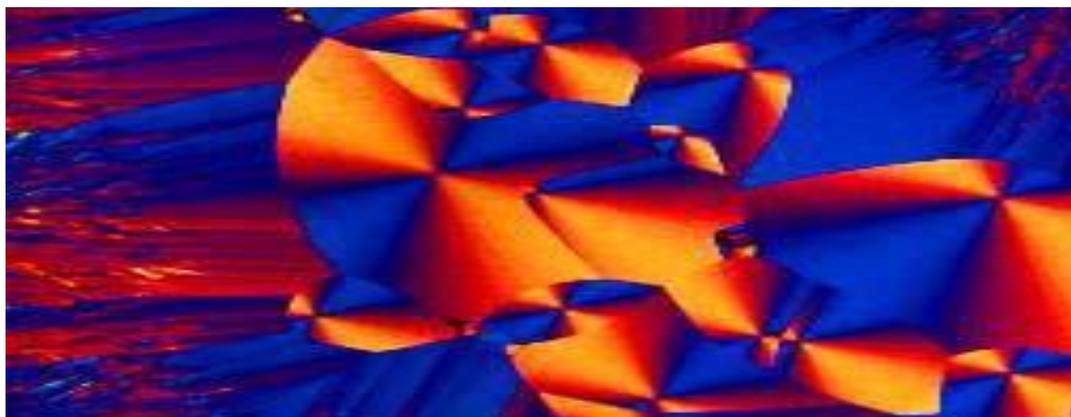
The supreme emolliency of **vegetable lanolin** as equal to animal Lanolin BP/PhEur was quantified through a series of studies undertaken by Campo in 1990-93. These involved *Skin Profilometry*, *Intracomeal Cohesography* and *Skin Elasticity*. These evaluation assays prove, beyond doubt, the effectiveness of **vegetable lanolin** as a skin conditioner. Copies of these extensive reports (5) are available on request.

### **Availability**

**Vegetable Derived Lanolins (Campo Vegetal Lanolins)** which fully comply with the quality parameters discussed above are available from **Campo**. We are able to provide material, which conforms to all pharmacopoeial requirements or indeed, to our clients' special needs and requirements

### **References**

- 1 Sulzberger M B, Lazar M P:A study of the allergenic constituents of lanolin (wool fat) : J Invest Dermatol: 15:453-458:1950
- 2 Sulzberger M B, Warshaw T, Herrmann F : Studies of skin-hypersensitivity to lanolin : J Invest Dermatol : 20:33-43:1953
- 3 Clark E W: Estimation of the general incidence of specific lanolin allergy : J Soc Cosmet Chem 26:323-335;1975
- 4 Clark E W, Blondeel A, Cronin E, Olefte J A, Wilkinson D S : Lanolin of reduced sensitisation potential : Contact Dermatitise: 7:80-83:1981
- 5 Campo Eisai In-house literature (12,000 pages): The Emollient properties of Vegetal Lanolin of Biotechnologic olive fruit cells origins (In Japanese) 1991-1993



## **VEGETAL LANOLIN**

### **STRUCTURE- MICROSCOPE PICTOGRAPH**

## Product Information

A novel natural green cosmetic active ingredient ' **Vegetal Lanolin, cosmetic grade** ' that is manufactured to match all the specifications of the USP and BP for the animal-derived lanolin except the melting point which was Biotechnologically designed to have a slightly higher melting point. As this increase of melting point (41° C - 50° C) is a desirable property in all cosmetic formulations based **on vegetal lanolins**, as known empirically but was not achieved previously for animal-derived lanolin.

**Vegetal lanolin CG** functions as a wetting/dispersing agent in lipophilic media, as a co-solvent, plasticiser, powerful but gentle water in oil emulsifier as well as stabilizer for both oil in water and water in oil emulsions- (which both types of emulsions' stability are improved with this vegetal lanolin as additive), super fattening, emollient, moisturizing and conditioning agent.

**Vegetal lanolin CG** can be safely used in virtually all-cosmetic preparations, as it is a superb emollient, making the skin soft and supple

Product Name:	<b>Vegetal Lanolin, Cosmetic Grade A</b>	<b>Vegetal Lanolin CGB</b>
Other Syn. Names	<b>Vegetable Lanolin, cosmetic grade A Vegetal Lanolin CG A</b>	<b>Vegetable Lanolin, CG B Vegetal Lanolin CG B</b>
Product Code#	<b>VLCG 1993-010-02-01A</b>	<b>VLCG 1993-010-02-02A</b>
CTFA/ INCI Name	<b>Lanolin</b>	<b>Lanolin</b>
CAS#	<b>8006-54-0</b>	<b>8006-54-0</b>
EINECS Name	<b>Lanolin, vegetal</b>	<b>Lanolin, vegetal</b>
EINECS#	<b>232-348-6</b>	<b>232-348-6</b>
Plant Parts used	<b>Biotechnologic Olive Fruit cells line#10-02</b>	

### Technical Specification

Appearance (25° C)	<b>Yellow stiffed mass</b>	<b>Yellow soft mass</b>
Appearance (molten)	<b>Clear</b>	<b>Clear</b>
Color (Gardener)	<b>8 max. GARDENER</b>	<b>8 max. GARDENER</b>
Acid value (BS684)	<b>1 max            MG KOH/G</b>	<b>1 max            MG KOH/G</b>
Saponification value (BS648 - 4hours)	<b>85-109 MG KOH/G</b>	<b>85-109 MG KOH/G</b>
Peroxide value	20 max	20 max
Volatile content 10G (BS648)	<b>0.5 % max</b>	<b>0.5 % max</b>
Ash Content (BS648)	<b>0.05% max</b>	<b>0.15% max</b>
Mettler Drop Point (For vegetal lanolins)	<b>41 - 50°C</b>	<b>38 - 44°C</b>
Pesticide Content (OC/OP)	Nil	Nil

*Campo Vegetal Lanolin CG A and Campo Vegetal Lanolin CG B are now well-established as cosmetic and pharmaceutical raw material and was used as an exclusive additive in several major international brands (cosmetics, pharmaceutical OTC) as a raw material with no special hazards.*

*Campo Research Eisai biotech labs. 1994-10-02 vegetal lanolin cosmetic grade*

## **Product Information**

### **Campolan (Liquid Vegetal Lanolin and Biotechnologic vegetal isopropyl esters blend)**

This one of its kind novel cosmetic active ingredient combines the emollient effect of vegetal lanolin with solvency of Biotechnologic vegetal isopropyl esters (**vegetal cholesterol** and its **derivative cholesterol esters**) in a clear liquid form.

**Campo** develop three **Campolan vegetal lanolin** grades based on the astronomical demand for these vegetable -derivatives, which are presently used in various many internationally popular cosmetic brands' formulations.

**Campolan 1** containing approximately a ratio of 1:1 vegetal lanolin CG\*: Biotechnologic vegetal isopropyl esters. (Approx. 50% Of each material)

**Campolan 2** containing approximately a ratio of 1:2.5 vegetal lanolin CG\*: Biotechnologic vegetal isopropyl esters. (Approx. 30% of vegetal lanolin CG & 70% IPE)

**Campolan 3** containing approximately a ratio of 1:3 vegetal lanolin CG\*: Biotechnologic vegetal isopropyl esters. (Approx. 20-25% of vegetal lanolin CG & 75-80% Isopropyl esters)

CG \* = Vegetal Lanolin, Cosmetic Grade (see specification elsewhere)

#### **Features**

1. **greaseless emollience**
2. **solvents/plasticisers**
3. **high lanolin content**
4. **compatible with most fats and waxes used in cosmetics**

**Campolans** are extremely effective greaseless emollients and co-solvents, imparting a soft, soothing effect to the skin,

**Campolans** contains Biotechnologic vegetable-derived cholesterol and its esters (as Biotechnologic vegetal isopropyl esters) as oil-soluble liquid and combine the advantageous properties of both vegetal-derived materials (vegetal lanolin and vegetal cholesterols)

## **Applications**

- 1 baby oils and lotions
- 2 hair and skin care applications
- 3 Shaving creams
- 4 nail lacquer removers
- 5 Lipsticks
- 6 bath-oils

**Campolans** enable the formulation of cosmetics with superior spreading characteristics which deposits a molecular size thin, highly water-resistant, non-greasy emollients film on the skin. Addition of **Campolan** into cosmetic formulations allows the production of clear, liquid, non-sticky highly emollient preparations.

CTFA/INCI NAME (proposed)

CAMPOLAN 1	- ISOPROPYL MYRISTATE (AND) LANOLIN OIL
CAMPOLAN 2	- ISOPROPYL MYRISTATE (AND) LANOLIN OIL
CAMPOLAN 3	- ISOPROPYL PALMITATE (AND) LANOLIN OIL

Lanolin, vegetal

CAS# **8006-54-0**  
 EINECS Name **Lanolin, vegetal**  
 EINECS# **232-348-6**

Isopropyl Myristate

CAS# 110-27-4  
 EINECS Name Isopropyl Myristate  
 EINECS # 203-751-4

Isopropyl palmitate

CAS# 142-91-6  
 EINECS Name Isopropyl palmitate  
 EINECS # 205-571-1

**Specifications**

	<b><u>Campolan 1</u></b>	<b><u>Campolan 2</u></b>	<b><u>Campolan 3</u></b>
Appearance	Yellow, clear liquid	Yellow, clear liquid	Yellow, clear liquid
Color (Gardner)	7 max	6 max	7 max
Saponification value	150 - 163	168 - 182	142 - 166
Acid value	2 max	2 max	2 max
Cloud point	10° C	10° C	13° C
Pour point	-1°C	-1°C	-1°C

Campolans are well established (1994-97) in various many well-known brands' formulations under exclusivity, and generally now considered as cosmetic ingredients that presents no special hazards.