



salinaturals

Natural Preservatives

TCLS

Introduction

SALICYLATES AND CHEMICALS is one of the largest manufacturers of preservatives for personal care and pharmaceutical applications. Considering the emerging need in the global market for natural preservatives, SALICYLATES introduces **Salinaturals** - Natural preservatives for Personal and Health Care products, developed as an alternative to synthetic preservatives.

Product Name **Salinatural TCLS**

Description **Salinatural TCLS** preservative is based on Turmeric Oil, Clove Bud Oil, Lemon Grass Oil and Sesame Oil

INCI Name Turmeric Oil - Curcuma longa
Clove Bud Oil - Syzgium Aromaticum
Lemon Grass Oil - Cymbopogon Citratus
Sesame Oil - Sesamum Indicum

- The plants are cultivated on a farm spread over 100 acres and the extraction is carried out by Supercritical CO₂ process which allows most compounds to be extracted without altering the main properties of the oil. We grow many of our species & herbs on our own contracted certified organic farm.
- **Salinatural TCLS** is a broad spectrum natural liquid preservative system, suitable for personal care and cosmetic applications.
- It has been designed specifically for formulations with a ph ≤ 6.0
- It is effective against Gram-positive & Gram-negative bacteria, yeast and mold.
- Being non-toxic, it is very safe to use.
- It has excellent antioxidant properties.

Features & Benefits

- Long shelf life
- Broad spectrum activity
- Non-toxic
- Wide application
- Excellent bacterial and fungal control
- Ensured safety - no label required

Physical Properties

Property	Specification
Appearance	Liquid
Color	Pale Yellow
Odor	Mild
Specific Gravity	0.93 ± 0.03

Applications

- **Salinatural TCLS** is water dispersible, pale in color with a mild lemony odor and compatible with a diverse range of products in formulations.

Rinse-off Products	Skin Care
Shampoos Shower Gels Body Washes Foam Baths	Creams Lotions Emulsions Gels

- **Salinatural TCLS** is typically used at 1.00 - 2.00% in rinse-off and leave-on product formulations.
- **Salinatural TCLS** provides excellent protection at pH 6 and can widely be used at pH 3-7.
- **Salinatural TCLS** can be added into any phase of the manufacturing process including the water phase of emulsions; it can tolerate temperatures up to 50°C.
- **Salinatural TCLS** requires intense mixing for uniform dispersal of the active ingredients when low amounts of emulsifiers are in the system.
- **Salinatural TCLS** is fully compatible with a wide range of formulations as well as most types of herbal extracts, proteins and anionic systems.

Broad Spectrum Activity

Salinatural TCLS provides excellent protection against various types of common organisms in a typical Facial Cream, Hand Cream, Shower Gel and Moisturizing Lotion at pH 6. The broad spectrum activity of **Salinatural TCLS** leads to greater efficacy. It provides protection against both types of contaminants.

Preserved by nature

In the on-going development of new preservatives, SALICYLATES AND CHEMICALS encountered many customers seeking natural preservatives. To satisfy this emerging global demand, SALICYLATES researched various naturally occurring essential oils commonly used in India.

Salinatural TCLS is based on three key essential oils: Turmeric Oil (*Curcuma longa*) Clove Bud Oil (*Syzygium Aromaticum*) Lemon Grass Oil (*Cymbopogon Citratus*) and Sesame Oil (*Sesamum Indicum*)

Turmeric Oil

Botanical Name	Curcuma longa
Family	Zingiberaceae
Part Used	Dried rhizomes
Extraction Method	SCO ₂ Extraction Method
Origin	India



Botanical Description

Extracted from the herb *Curcuma longa*, of the Zingiberaceae family. It is also known as Haldi. It is a perennial, stemless herb, reaching up to 1.5 m height, with large, pale green, elongated and tufted leaves. The rhizome is short, branched and bright yellow within. The pale yellow flowers are present in dense, cylindrical inflorescences, 10-15 cm long which develop in the centre of leaves. The plant grows to a height of three to five feet and is cultivated extensively in Asia, India and other countries with a tropical climate. It has oblong, pointed leaves and bears funnel-shaped yellow flowers. The rhizome is the portion of the plant used medicinally.

Therapeutic Properties

As an anti-inflammatory agent and for the treatment of flatulence, jaundice, menstrual difficulties, hematuria, hemorrhage, and colic. Turmeric can also be applied topically in poultices to relieve pain and inflammation. Current research has focused on turmeric's antioxidant, hepatoprotective, anti-inflammatory, anticarcinogenic & antimicrobial properties. In addition to its use in cardiovascular disease & gastrointestinal disorders, COX-2 Inhibitor.

Aromatherapeutic Use

Extracts have been added to creams for use as a colouring agent and traditionally women would rub turmeric into their cheeks to produce a golden glow. The yellow pigment in turmeric is a compound called curcumin. Turmeric which improves skin tone.

Clove bud Oil



Botanical Name	Syzygium aromaticum
Family	Myrtaceae
Part Used	Buds
Extraction Method	SCO ₂ Extraction Method
Origin	India

Botanical Description

Clove oil is extracted from *Eugenia caryophyllata* (also known as *Syzygium aromaticum*, *Eugenia aromatica*, *E. carophyllus*) of the Myrtaceae family.

A small evergreen tree, pyramidal, trunk soon divides into large branches covered with a smooth greyish bark; leaves large, entire, oblong, lanceolate (always bright green colour), which stand in pairs on short foot-stalks, when bruised very fragrant. Flowers grow in bunches at end of branches. A slender evergreen with a smooth gray trunk, up to 12 meters high. It has large bright green leaves on short stalks. At the start of the rainy season long buds appear that have a rosy-pink corolla at the tip. As the corolla fades the calyx turns deep red. When dried these provide the cloves.

Therapeutic Properties

The therapeutic properties of clove oil are analgesic, antiseptic, antispasmodic, anti-neuralgic, carminative, anti-infectious, disinfectant, insecticide, stimulant, stomachic, uterine and tonic.

It helps with toothache and mouth sores. It is also of use for skin problems – especially for skin sores and leg ulcers and as insect repellent.

Aromatherapeutic Use

When using aromatherapy to address physical conditions, this oil is an antiseptic and stimulating oil. It can be used for mouthwashes and gargling. Traditionally used to reduce toothache by rubbing onto the teeth gums.

Lemon Grass Oil



Botanical Name	Cymbopogon citratus
Family	Graminaceae
Part Used	Fresh or partially dried grass
Extraction Method	Steam distillation Method
Origin	India

Botanical Description

Lemongrass oil is extracted from Cymbopogon citratus (also known as Andropogon citratus, A. schoenathus - of the Poaceae family). Lemon Grass is an aromatic herb, that has robust, lemon scented linear leaves. It is a perennial fast-growing aromatic grass, growing to about 1 meter (3 feet) high with long, thin leaves and originally was growing wild in India.

The quantity of oil depends upon the age of the grass and found to have refreshing fragrance and properties.

Therapeutic Properties

The therapeutic properties of lemongrass oil are analgesic, anti-depressant, antimicrobial, antipyretic, antiseptic, astringent, bactericidal, carminative, deodorant, diuretic, febrifuge, fungicidal, galactagogue, insecticidal, nervine, nervous system sedative and tonic.

Aromatherapeutic Use

It is a valuable ingredient in perfumes and citrus-type soaps and is also an insect deterrent. It is a fresh smelling oil that can be used with success for fighting jet lag, cellulite, revitalizing a tired body and mind. On the skin, it helps to balance oily conditions and to clear inflammation and fight fungal infections.

Sesame Oil



Botanical Name	Sesamum indicum
Family	Pedaliaceae
Part Used	Seeds
Extraction Method	cold pressing Method
Origin	India

Botanical Description

Sesame Seed is the seed of an annual herb, *Sesamum indicum*, which grows well in hot climates. Sesame Seed is the most commonly produced seed. Sesame is a herbaceous, annual and tropical plant which reaches heights of 1-2 meters. The leaves have varied shapes, they are either oval or lanceolate and fluffy on both sides.

The flowers are either violet or white, and at their end, one can find pods of 3 cm containing many seeds. Their color varies from yellowish-white to red, brown or black. It is naturally antibacterial for common skin pathogens, such as staphylococcus and streptococcus as well as common skin fungi, such as athlete's foot fungus. It is a natural anti inflammatory agent. Sesame seed oil is a potent antioxidant. It keeps the skin supple and soft and protects against common skin pathogens.

Therapeutic Properties

Sesame seeds contain fat substances, antioxidants, sesamol, proteinic substances, arginine and cellulose, mineral substances and calcium. This way, the sesame seeds have a very high nutritive and energetic value.

Aromatherapeutic Use

Sesame massage oil has great moisturizing, soothing and emollient qualities which makes it a good choice to include when mixing a massage oil or preparing a carrier oil blend. Sesame oil has some sun screening properties but should not be used as a sun screen preparation, unless in an emergency. Since it is a good source of vitamins and minerals the sesame oil is used in cosmetics for making soap.

Shampoo Preserved With 1.00% Salinatural TCLS

Test Organism	Inoculum density / 0.1 ml	Weight of Sample	Expected count per gm of Sample
Staphylococcus aureus	6.4×10^8 cfu/ml	20.00 g	3.1×10^7 cfu/g
Escherichia coli	2.3×10^8 cfu/ml	20.04 g	1.1×10^7 cfu/g
Pseudomonas aeruginosa	4.2×10^8 cfu/ml	20.03 g	2.0×10^7 cfu/g
Aspergillus niger	5.7×10^7 cfu/ml	20.12 g	2.8×10^6 cfu/g
Candida albicans	4.8×10^7 cfu/ml	20.07 g	2.3×10^6 cfu/g

Test Organism	Count at Zero hour	Count at 7 th day	Count at 14 th day	Count at 21 st day	Count at 28 th day
Staphylococcus aureus	7.7×10^6 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Escherichia coli	1.9×10^6 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Pseudomonas aeruginosa	2.9×10^6 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Aspergillus niger	4.0×10^4 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Candida albicans	7.6×10^4 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g



Stability

Salinatural TCLS preservative is very stable and shows no change in composition over long periods of time. It is also freeze / thaw / heat stable without separation or crystal formation through several cycles.

Toxicity Information

Mainly due to impending legislation in Europe, which will soon impose various marketing restrictions, **Salinatural TCLS** preservative has not been tested on animals. Therefore, toxicity testing information regarding the blended material will not be generated. However, each of the **Salinatural TCLS** ingredients has been tested extensively over the years. Overall, the ingredients in **Salinatural TCLS** have been carefully chosen due to their global acceptance as well as excellent toxicity profiles.

Cream Base Preserved With 2.00% Salinatural TCLS

Test Organism	Inoculum density / 0.1 ml	Weight of Sample	Expected count per gm of Sample
Staphylococcus aureus	6.4×10^8 cfu/ml	20.04 g	3.1×10^7 cfu/g
Escherichia coli	2.3×10^8 cfu/ml	20.03 g	1.1×10^7 cfu/g
Pseudomonas aeruginosa	4.2×10^8 cfu/ml	20.00 g	2.0×10^7 cfu/g
Aspergillus niger	5.7×10^7 cfu/ml	20.00 g	2.8×10^6 cfu/g
Candida albicans	4.8×10^7 cfu/ml	20.00 g	2.3×10^6 cfu/g

Test Organism	Count at Zero hour	Count at 7 th day	Count at 14 th day	Count at 21 st day	Count at 28 th day
Staphylococcus aureus	5.7×10^6 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Escherichia coli	6.9×10^6 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Pseudomonas aeruginosa	8.1×10^6 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Aspergillus niger	2.0×10^5 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Candida albicans	6.1×10^5 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g



Safety And Regulatory Profile

Salinatural TCLS has an excellent safety and toxicological profile and is safe to use in a wide range of personal care applications.

(The information given in this booklet is based on our current knowledge and experience, and may be used at your discretion and risk. We do not assume any liability in connection with your product or its use. You must comply with all applicable laws and regulations, and observe all third party rights.)

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