



LAUREST[®] 1240

Plant-Based, Multifunctional Cosmetic Ingredient

OVERVIEW

A self-preserving emollient for personal care products, Laurest[®] 1240 was developed to exploit certain active botanical constituents that are utilized by plants to provide protection from microbes in the environment. These constituents, rearranged and concentrated, are useful for preserving and improving personal care formulations when formulating natural cosmetic products. Laurest[®] 1240 is a natural raw material for use in natural and organic cosmetics.

Laurest[®] 1240 is a new way to impart luxurious skin feel to personal care products with natural emollients that promote healthier skin without the risk of microbial spoilage. It is a selective antimicrobial and not a traditional broad spectrum preservative.

Laurest[®] 1240 delivers the antimicrobial, emollient and humectant esters that customers want in their products at a competitive price, with outstanding quality, and in an easy-to-use form that professionals can use with confidence.

DETAILS

Like Laurest[®] 1220, Laurest[®] 1240 uses a patented liquid crystal delivery system¹ for water-soluble lauric esters derived from coconut or palm kernel oil. With double the concentration of lauric monoesters combined with a higher proportion of glyceryl laurate than Laurest[®] 1220, antimicrobial activity in formulations and products is enhanced. Laurest[®] 1240 is a thicker gel that will not liquify and run at body temperature, making it suitable for formulations and products intended for direct application to localized areas.

It is prepared by partial saponification and transesterification of glyceryl laurate derived from sustainable coconut or palm kernel oil, and polyglyceryl-2 derived from sustainable vegetable oil. It delivers lauric esters that, in nature, protect everything from the coconut palm to healthy human skin.

Laurest[®] 1240 delivers otherwise insoluble plant-based lauric esters in a form that can be easily used when formulating liquids, creams and gels. This enables a class of products that emulates and enhances the natural processes by which healthy skin protects itself.

BENEFITS

Copperhead Chemical's novel Laurest[®] 1240 provides multiple benefits:

- ◆ Plant-based ingredients
- ◆ Water-soluble medium chain fatty acid esters - cold process capable
- ◆ Antimicrobial properties - C12 lauric esters
 - Excellent inhibition against Gram-positive bacteria and some fungi*
 - Promotes a healthy skin microbiome by augmenting innate skin defenses
- ◆ Non-volatile
- ◆ Skin conditioning - emollient and humectant
- ◆ Excellent solvent or carrier for fragrances or active ingredients - other botanicals, essential oils, other actives
- ◆ Non-ionic emulsifier and mild surfactant
- ◆ Dispersant properties
- ◆ Wetting agent
- ◆ Stabilizer and pH modifier

¹ [Methods and compositions for novel liquid crystal delivery systems.](#)

U.S. Patent Number: 8,546,593

Laurest® 1240 is made from ingredients of vegetable origin and can be used in most personal care formulations. This is important in cosmetic applications where the use of ethoxylated derivatives is increasingly questioned for both dermatological and environmental reasons.

Adding Laurest® 1240 to personal care and cosmetic products provides moisturizing and conditioning properties and contributes to overall product stability. Laurest® 1240 is a water-soluble mixture of medium chain fatty acid esters without any added emulsifiers or surfactants. This allows antimicrobial esters to migrate between the water and oil phase and ensures product stability while providing excellent skin feel.

The amounts of lauric acid in dietary sources vary and there are many conditions that change the amount and composition of sebum produced by a person's skin. Laurest® 1240 can help fortify natural skin defenses when they are compromised.

Multifunctional Laurest® 1240 is...

- ✓ Gluten Free
- ✓ Paraben Free
- ✓ Phthalate Free
- ✓ Sulfate Free
- ✓ Aluminum Free
- ✓ Silicone Free
- ✓ Cruelty Free



An Environmentally Friendly Ingredient

The patented method of manufacture for Laurest® 1240 uses sustainable, botanically derived raw materials, is a relatively low energy process that produces no waste stream, and results in a product that is 100% biodegradable.

Non-irritating and Improves Appearance of Fungal Nails

Laurest® 1240 soothes and quickly improves the appearance of skin and nails affected by fungus and bacteria. In customer trials, 83% of nail fungus subjects noted improvement within two weeks and 94% within six weeks. Similarly, Laurest® 1240 resolves the appearance of red bumps, cracked and broken skin and minor wounds.

Although many products targeted at improving the appearance of fungal nail are irritating, products can be formulated with Laurest® 1240 without the risk of irritation. Under the conditions of a repeated insult (semi-occlusive) patch test procedure conducted in 51 subjects (49% of whom had self-perceived sensitive skin), Laurest® 1240 was not associated with skin irritation or allergic contact dermatitis in human subjects.

Cosmetic Ingredient Reviews

All of the ingredients in Laurest® 1240 are commonly used in personal care and cosmetic products and have cosmetic ingredient reviews (CIRs)^{2,3} by expert panels and safety assessments. The ingredients are suitable for use in the USA, Canada, EU, Japan, Australia, Brazil, New Zealand and other global markets.

² Safety Assessment of Polyglyceryl Fatty Acid Esters as Used in Cosmetics. January 28, 2016. <http://www.cir-safety.org/sites/default/files/PGlyFE122015SLR.pdf>

³ Amended Safety Assessment of Monoglycerol Monoesters as Used in Cosmetics. August 28, 2015. <http://www.cir-safety.org/sites/default/files/monoglycerol%20monoesters.pdf>

Composition

INCI Name: Diglycerin (and) Polyglyceryl-2 Laurate

| Ingredient (INCI) | CAS No. | EINECS | Description | Source |
|------------------------|------------|-----------|-------------------|----------------------------|
| Diglycerin | 59113-36-9 | 211-013-8 | Diluent/Humectant | Vegetable Oil |
| Polyglyceryl-2 Laurate | 96499-68-2 | N/A | Active | Coconut or Palm Kernel Oil |

Typical Physical Properties

| Typical Physical Properties – Laurest® 1240 | |
|---|------------------------------|
| Appearance | Clear to slightly cloudy gel |
| Odor | Nil |
| Freezing Point | -3.5°C |
| Boiling Point | 173°C |
| Auto-Ignition Temperature | Not below 300°C |
| Relative Density | 1.170 |
| Solubility | |
| Acetone | Soluble |
| Ethanol | Soluble |
| Water | Partially soluble |
| Hexane | Partially soluble |
| Viscosity (Brookfield) | 7500 cps |
| pH | 9 |

Recommendations For Use

As a self-preserving, skin-conditioning ingredient, Laurest® 1240 is easy to incorporate into formulations and readily forms emulsions in most aqueous and oil systems. Recommended use levels and concentration depends upon the application and type of product. Laurest® 1240 may be added to either oil or water phase.

For use as a preservative: 1.5% - 3% wt/wt%

Other personal care applications: up to 39% wt/wt%

There are no use limitations or upper limits applicable to Laurest® 1240.

Laurest® 1240 may be used in products with a pH range from 5 to 10. It may be used in more acidic products, i.e., exfoliating products, provided that care is taken to form separate emulsions.

For Carbopol® or other carboxylic acid polymer rheology systems, it is suggested that Laurest® 1240 be added during the final pH adjustment or neutralization due to its high pH level. When using Laurest® 1240 in these systems, the amount of traditional neutralizing ingredient (NaOH, TEA, or other) may need to be reduced or eliminated depending on the concentration of Laurest® 1240 used. See formulary documentation, or contact Copperhead Chemical Company® Technical Support for more information.

Laurest® 1240 is compatible with most cosmetic ingredients, including but not limited to soft acids such as citric or sorbic acid, and alcohols such as benzyl alcohol or phenoxyethanol. Various combinations of these ingredients may be required to achieve maximum product preservation. Please contact Copperhead Chemical Company® Technical Support for more information.

* Each unique product formulation requires preservative challenge and stability testing to determine adequate preservation from microbial spoilage and to establish product shelf life. Please contact Copperhead Chemical Company® about study sponsorship opportunities when using Laurest® products.

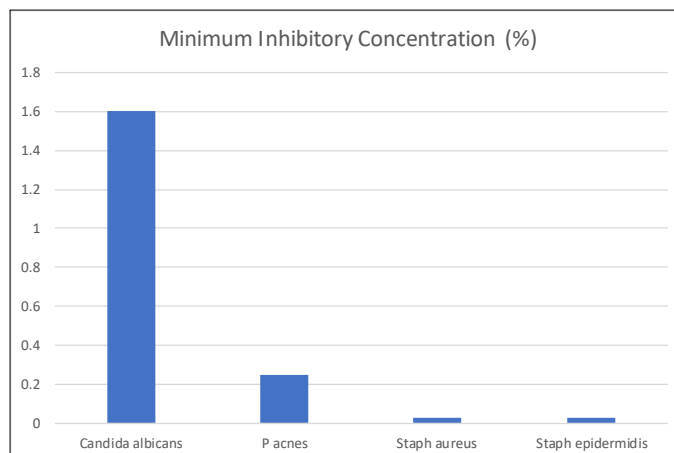
Storage

It is recommended that Laurest[®] 1240 be stored in a cool and dry place to preserve the product at maximum quality. Store in original container. Avoid excessive heat and light. The working area should be kept free of accumulated dust and sources of ignition.

Laurest[®] 1240 is available in 5 and 30 gallon phenolic lined steel containers.

Microbial Studies

Laurest[®] 1240 has strong self-preserving activity due to the presence of C12 lauric esters and effectively inhibits the growth of common Gram-positive bacteria and fungi. The chart below shows the minimum inhibitory concentration (MIC) of Laurest[®] 1240 against selected organisms. The MICs of Laurest[®] 1240 against *C. albicans*, *S. aureus*, *P. acnes*, and *S. epidermidis* are approximately *half* that of Laurest[®] 1220. These data show that increasing the amount of C12 lauric esters significantly increases the antimicrobial activity in formulations and products.



About Copperhead Chemical Company[®]

Copperhead Chemical is a leading manufacturer of active pharmaceutical ingredients and specialty chemicals located in Tamaqua, PA USA. Copperhead is dedicated to quality and operates in accordance with Good Manufacturing Practice regulations enforced by the U.S. FDA. Contact information is as follows:

**COPPERHEAD
CHEMICAL
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