



LAUREST[®] 1220

Plant Based, Multifunctional Cosmetic Ingredient

OVERVIEW

A self-preserving emollient for personal care products, Laurest[®] 1220 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[®] 1220 is approved by ECOCERT as a COSMOS-compliant natural raw material for use in natural and organic cosmetics.



Laurest[®] 1220 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[®] 1220 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

Laurest[®] 1220 uses a patented liquid delivery system¹ for water-soluble lauric esters derived from coconut or palm kernel oil.

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 ingredients from coconut or palm kernel oil and vegetable oil to add lauric esters that, in nature, protect everything from the coconut palm to healthy human skin.

Our Laurest[®] 1220 delivers otherwise insoluble coconut or palm kernel oil 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.

In vitro studies show Laurest[®] 1220 to be bacteriostatic and fungistatic in elevated concentrations, meaning that the addition of Laurest[®] 1220 will only improve the preservation capacity of personal care products.

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

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

BENEFITS

Copperhead Chemical's novel Laurest[®] 1220 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

Laurest® 1220 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.

The addition of Laurest® 1220 to personal care and cosmetic products provides moisturizing and conditioning properties and contributes to overall product stability. Laurest® 1220 is also the first 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® 1220 can help fortify natural skin defenses when they are compromised.

Multifunctional Laurest® 1220 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® 1220 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 Controls *Staphylococcus aureus*

Skin products can be formulated with Laurest® without the risk of irritation. The results of in-vitro studies at MB Research Laboratories on samples of generic skin lotions formulated with 0, .5% and 10% Laurest® were well within the "non-irritant" range. Additional studies at Microchem Laboratory on the same lotion samples showed that the control lotion without Laurest® was bacteriostatic whereas the lotion with 10% Laurest® reduced *Staphylococcus aureus* concentrations by 33% and 76% at 12 and 24 hours.

This unusual combination of qualities makes Laurest® an attractive ingredient for people who are susceptible to microbial flare-ups and persistent infections but whose skin is too sensitive to tolerate other conventional or natural antimicrobials.

Cosmetic Ingredient Reviews

All of the ingredients in Laurest® 1220 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	627-82-7	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® 1220	
Appearance	Clear to slightly amber liquid
Odor	Slight sweet odor
Freezing Point	> -3°C
Boiling Point	173°C
Specific Gravity @ 22°C	1.1807
Refractive Index @ 20°C	1.4810
Solubility	
Acetone	Soluble
Ethanol	Soluble
Water	Mostly soluble
Viscosity (Brookfield) 40°C	3490 cps
Viscosity (Brookfield) 20°C	20,000 cps
pH (5% solution in water)	9

Recommendations For Use

As a self-preserving, skin-conditioning ingredient, Laurest® 1220 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® 1220 may be added to either oil or water phase.

For use as a preservative: 1.5% - 3.0% wt/wt%

Other personal care applications: up to 39% wt/wt% for both wash off and leave on products

There are no use limitations or upper limits applicable to Laurest® 1220.

Laurest® 1220 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® 1220 be added during the final pH adjustment or neutralization due to its high pH level. When using Laurest® 1220 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® 1220 used. See formulary documentation, or contact Copperhead Chemical Company® Technical Support for more information.

Laurest[®] 1220 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.

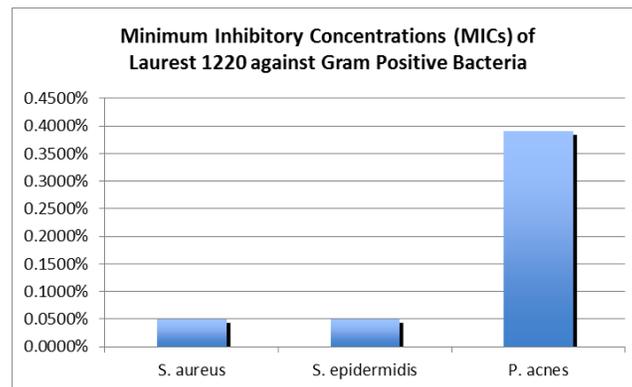
Storage

It is recommended that Laurest[®] 1220 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[®] 1220 is available in 5 and 30 gallon phenolic lined steel containers.

Microbial Studies

Laurest[®] 1220 has strong self-preserving activity due to the presence of C12 lauric esters and effectively inhibits the growth of Gram-positive bacteria. The following chart shows the minimum inhibitory concentrations of Laurest[®] 1220 against selected bacteria.



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:

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