

# QUALITY SUSTAINS.

QUALITY WORKS.

**LANXESS**  
Energizing Chemistry

## Neolone® BioG Preservative – Naturally derived preservative for Personal Care

Sustainable broad spectrum preservative based on Ethyl Lauroyl Arginate for personal care characterized by:

### Safety

Ethyl Lauroyl Arginate is non-irritating and non-sensitizing at recommended use levels for cosmetic applications.

### Acceptance

Ethyl Lauroyl Arginate is widely approved\* for use in leave-on and rinse-off products.

#### Product description

**Neolone® BioG Preservative**, based on Ethyl Lauroyl Arginate, has a wide spectrum of activity against gram-positive and gram-negative bacteria, yeast and mold. Due to its cationic molecular structure, Ethyl Lauroyl Arginate induces the loss of bacterial cell viability by disturbing their cell membrane potential and altering cell permeability. **Neolone® BioG Preservative** provides an excellent preservation activity in cosmetic products formulated with compatible ingredients and the efficacy can be further enhanced with the use of recommended boosters and multifunctional ingredients.

Ethyl Lauroyl Arginate has an excellent Environmental Health and Safety profile. At recommended use levels it is non-irritating, non-sensitizing and readily biodegradable.

### Naturally derived ingredients

**Neolone® BioG Preservative** meets ISO 16128 definition of a naturally derived ingredient and is COSMOS and NATRUE raw material certified. The raw materials for **Neolone® BioG Preservative** are derived from non-GMO corn, sugar beet, sugar cane and sustainably sourced palm oil.

### Effectiveness

Strong antimicrobial activity against molds, yeasts, gram-negative, and gram-positive bacteria.

#### Safe for consumers and the environment

### Neolone® BioG Preservative

Ethyl Lauroyl Arginate HCl in Glycerin. Liquid form for ease of formulating. Recommended dose 0.25–2.0%

- **Neolone® BioG Preservative** is best added post emulsification when cooling to ~45 °C
- Ensure the formulation is not too basic before Ethyl Lauroyl Arginate additions pH < 7. Keep final product pH below 6 to minimize Ethyl Lauroyl Arginate hydrolysis and maintain performance
- Incorporate with sufficient mixing
- Avoid incompatible ingredients

\* Please contact your LANXESS representative to check the specific approval status in your country

## Naturally derived and certified

### Neolone® BioG Preservative is...

- Readily biodegradable and does not bioaccumulate
- Naturally derived (ISO 16128)
- COSMOS and NATRUE raw material approved
- Containing raw materials which are obtained from palm oil. The raw materials are RSPO certified
- Listed as preservative for cosmetics on Annex V of the European Cosmetics Products Regulation
- Non-animal origin: does not contain any animal ingredients, by-products or derivatives
- Kosher and Halal certified
- LANXESS Scopeblue® product\*

## Applications

Approved for leave-on and rinse-off applications, such as creams, lotions, micellar water, conditioners and mouthwash. The safety of Ethyl Lauroyl Arginate for consumers at recommended use level has been confirmed by the European Scientific Committee on Consumer Safety based on extensive toxicology and skin irritation data.

## Formulation

We as LANXESS, Business Line Consumer Solutions, are dedicated to delivering innovative and sustainable preservation solutions with advanced technical and regulatory expertise on a global level.

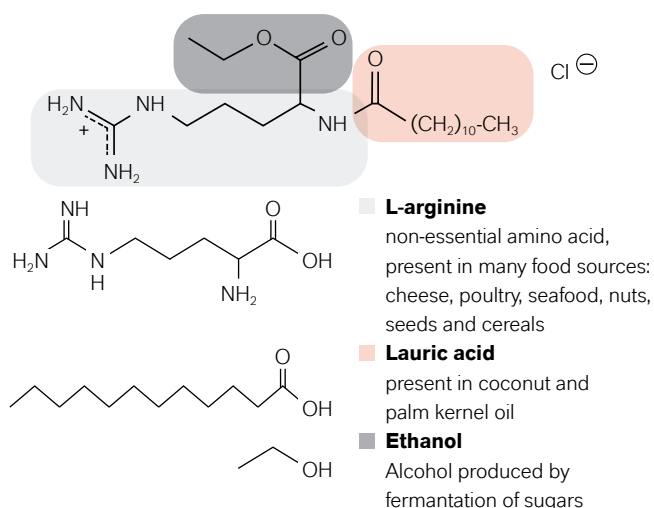
With our microbiology know-how and our network of global R&D hubs, we are providing our customers with safe, high-quality and effective products in a sustainable way.

For information on the appropriate dosage, possible combinations and formulation specifics of this preservative for your individual application, please contact your LANXESS representative to closely support you.

## Regional availability

United states, Europe, Southeast Asia.

## A preservative derived from natural raw materials INCI: Ethyl Lauroyl Arginate HCl



Characteristics	
INCI	Glycerin and Ethyl lauroyl arginate HCl
Formula	C <sub>20</sub> H <sub>40</sub> N <sub>4</sub> O <sub>3</sub> x HCl
CAS	60372-77-2
EINECS/ELINCS	434-630-6
MW	421 g/mol
Form/consistency	Liquid, solution in glycerin
Odor	No Odor; No influence on the finished product at recommended use level

\* The **LANXESS Scopeblue® brand** label identifies products that either contain at least 50% sustainable raw materials or have a carbon footprint that is at least 50% lower than that of conventional products. **Neolone® BioG Preservative** meets both Scopblue® requirements.

Formulation	
Recommended use level/ dosage	0.25 – 2%
Optimal pH range	3 – 6
Thermostability	Stable at the processing temperature up to 80°C
Point of incorporation	<ul style="list-style-type: none"> <li>■ Add after emulsification (either cold or hot process)</li> <li>■ In hot process, addition after cooling below 45°C</li> </ul>
Incompatibilities	<p><b>Anionic thickeners:</b> Such as: Polyacrylic acid (PAA) based polymers (carbopol, carbomer), Xanthan gum, Carboxymethyl cellulose (CMC), Carrageenan</p> <hr/> <p><b>Anionic Surfactants:</b> Such as: Sodium laureth or Lauryl sulfate (SLES/SLS), Alkyl phosphates or carboxylates</p>
Compatibilities	<p><b>Compatible Thickeners:</b> <b>Non-ionic gum thickeners</b> (e.g. Tara gum<sup>(1)</sup>, Guar gum<sup>(1)</sup>, Locust bean gum<sup>(1)</sup>, Cellulose ether<sup>(1)</sup>, Zea Mays starch<sup>(1)</sup>, Sclerotium<sup>(1)</sup>) or combination with Xanthan gum Viscosity adjustment with structuring agents (e.g. Cetearyl alcohol<sup>(1)</sup>) <b>Cationic thickener</b> (e.g. Polyquaternium (Polyquat 37), modified Cationic guars)</p> <p><b>Compatible Surfactants:</b> <b>Non-ionic surfactants</b> (e.g. Alkyl glucoside<sup>(1)</sup>, Ethoxylated alcohol, Fatty alcohol<sup>(1)</sup>, etc), amphoteric (e.g. Cocamidopropyl betaines) <b>Cationic surfactants</b> (e.g. long chain or dialkyl quaternaries) <b>Anionic active ingredients</b> (e.g.: Sodium hyaluronate<sup>(1)</sup>, Sodium lactate<sup>(1)</sup>) <b>Amphoteric active ingredients</b> (e.g.: Betaine<sup>(1)</sup>) <b>Anionic preservatives</b> (e.g. Sodium benzoate<sup>(1)</sup>, Potassium sorbate<sup>(1)</sup>, Sodium dehydroacetate<sup>(1)</sup>)</p>
Preservatives or multifunctional additives	<p>The following preservatives or multifunctional additives passed the LANXESS Challenge test in a COSMOS compliant cream formulation in combination with 0.55 to 1.15% of Neolone® BioG Preservative</p> <ul style="list-style-type: none"> <li>■ 0.3 – 0.5% Sodium benzoate<sup>(1)(2)</sup></li> <li>■ 0.1 – 0.3% Na Dehydroacetate<sup>(1)(2)</sup></li> <li>■ 0.1 – 0.3% Na Anisate<sup>(1)(2)</sup></li> <li>■ 0.5 – 1% 1,2-Hexanediol</li> <li>■ 0.1 – 0.3%</li> <li>■ 0.3 – 0.7% Glyceryl caprylate<sup>(1)(2)</sup></li> <li>■ 0.1 – 0.3% Gluconolactone<sup>(1)(2)</sup></li> <li>■ 0.33 – 0.65% Benzyl alcohol<sup>(1)(2)</sup> + 0.025 – 0.05% Cinnamic acid<sup>(1)(2)</sup></li> </ul> <p><b>Other Options for enhancing performance:</b> Add low dosages of high HLB surfactants (solubilizers to the water phase before emulsification)</p> <p>Examples: PEG-40 hydrogenated castor oil (HLB 12.5) (from 2:1 to 1:2) Polysorbate-20 (HLB 16.7) (from 2:1 to 1:2) Caprylyl glucoside<sup>(1)(2)</sup> (HLB 13 – 14) (from 2:1 to 1:2)</p>

<sup>(1)</sup> Ingredients suitable for COSMOS compliant formulations

<sup>(2)</sup> Dosage levels should be verified with testing due to the variation in personal care formulations and their susceptibility to microbial contamination. Check with your local LANXESS representative for availability and regulatory limits that may apply.



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Unless specified to the contrary, the values given have been established on standardized test specimens at room temperature. The figures should be regarded as guide values only and not as binding minimum values. Kindly note that the results refer exclusively to the specimens tested. Under certain conditions, the test results established can be affected to a considerable extent by the processing conditions and manufacturing process.

**Note:** Information contained in this publication is current as of April, 2024. Please contact LANXESS Deutschland GmbH respectively LANXESS Corporation to determine if this publication has been revised.

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