

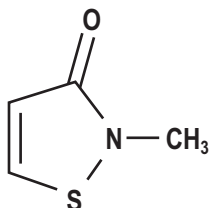


NEOLONE™ PE

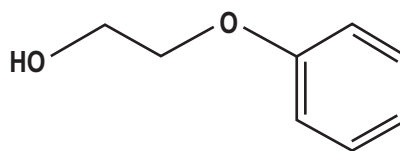
General

A broad spectrum preservative to protect against microbial contamination and facilitate product performance in rinse-off hair care and rinse-off skin care products. NEOLONE™ PE is a blend of Methylisothiazolinone and Phenoxyethanol preservatives.

Structure



Methylisothiazolinone
C₄H₅NOS
CAS No.: 2682-20-4



Phenoxyethanol
C₈H₁₀O₂
CAS No.: 122-99-6

Formulation/ Stability

NEOLONE™ PE active ingredients are formulated with propylene glycol (CAS No.: 57-55-6). This stable blend has a two-year product shelf life.

Physical Properties

The following are typical properties of NEOLONE™ PE; **they are not to be considered product specifications.**

Appearance: Clear, colorless to pale yellow liquid
Density: 1.10 g/mL (20°C)
Flash point (closed cup): 121°C (solvent)
Solubility: Miscible in water, lower alcohols and glycols;
Low solubility in hydrocarbons

Applications

- Shampoos
- Conditioners
- Body wash / shower gels
- Liquid hand soaps
- Cosmetic raw material ingredients such as surfactants, rheology modifiers, silicone emulsions, opacifiers, etc.

Recommended Use Rates

The recommended use level of NEOLONE™ PE is 0.29% to 0.57% w/w of NEOLONE PE as supplied.

NEOLONE PE preservative should be added as the last ingredient and at the lowest temperature (≤45°C) possible. NEOLONE PE may tolerate exposure to higher temperatures (70°C), however the stability of the active ingredients should be confirmed. Since the process conditions and components of personal care formulations vary considerably and may have impact on the efficacy of preservatives, we urge each manufacturer to verify the efficacy and stability of NEOLONE PE in use.

Features and Benefits

- Global approvals for use as a preservative in rinse-off personal care formulations*
- Excellent activity versus gram positive and gram negative bacteria, yeasts, and molds
- Compatible with a wide range of personal care products and ingredients
- Excellent stability in use over a wide pH (2 to 10) and temperature range
- Pre-blended combination into a single formulation for ease of use and simplifying manufacturing operations
- Does not release formaldehyde

*Customers should verify the appropriate legislation in any given jurisdiction.

NEOLONE™ PE Performance in Rinse-Off Personal Care Products

NEOLONE™ PE microbiological performance was assessed with a 3-cycle challenge test which uses separate pools of bacteria and fungi. Dow's method is a modification of the Personal Care Product Council (PCPC) preservative efficacy test.

Bacteria

Product	NEOLONE™ PE (% Product)	Bacteria – Estimated CFU/g after day:				
		2	7	14	21	28
Shampoo, pH 5.2	0 (Unpreserved)	>10 ³	>10 ³	>10 ³	>10 ³	>10 ³
	0.57	10 ³	<10	<10	<10	<10
Body Wash, pH 5.7	0 (Unpreserved)	>10 ³	>10 ³	>10 ³	>10 ³	>10 ³
	0.30	10 ³	<10	<10	<10	<10
	0.45	10 ³	<10	<10	<10	<10
Hair Conditioning Polymer, pH 10	0 (Unpreserved)	nd	<10	<10	<10	<10
	0.48	nd	<10	<10	<10	<10

B. cepacia (ATCC 25416), *E. coli* 8739, *K. pneumoniae* (ATCC 10031), *P. aeruginosa* (ATCC 15442), *P. aeruginosa* (ATCC 9027), *P. putida* (ATCC49128), *S. aureus* (ATCC 6538), *S. epidermidis* (ATCC 12228) inoculated at 0, 7 and 14 days

Fungi

Product	NEOLONE™ PE (% Product)	Bacteria – Estimated CFU/g after day:				
		2	7	14	21	28
Body Wash, pH 5.7	0 (Unpreserved)	>10 ³	10 ³	10 ³	>10 ³	>10 ³
	0.30	>10 ³	<10	10	<10	<10
	0.45	10	<10	<10	<10	<10
	0.57	<10	<10	<10	<10	<10
Shampoo, pH 5.2	0 (Unpreserved)	>10 ³	>10 ³	>10 ³	>10 ³	>10 ³
	0.57	10 ²	<10	<10	<10	<10
Hair Conditioning Polymer, pH 10	0 (Unpreserved)	nd	>10 ³	>10 ³	>10 ³	>10 ³
	0.48	nd	<10	10	<10	<10

A. brasiliensis (ATCC 16404), *C. albicans* (ATCC 10231) inoculated at 0, 7 and 14 days

Analytical Procedures

High Performance Liquid Chromatography (HPLC) analysis is the preferred method for determining use levels of Methylisothiazolinone and Phenoxyethanol. This method can be used to determine Methylisothiazolinone and Phenoxyethanol levels in many personal care products. If you require detailed information on HPLC methods, please contact your local Dow representative.

**Handling
Precautions****Storage**

Store products in tightly closed original containers at temperatures recommended on the product label.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow representative for more information.

**Product
Stewardship**

When considering the use of any Dow product in a particular application, review the latest Safety Data Sheet (SDS) and country-specific product label to ensure the intended use is within the scope of approved uses. Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products – from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including Safety Data Sheets (SDS), should be consulted prior to use of Dow products. Current Safety Data Sheets are available from Dow.

For further information visit our website:
www.dowmicrobialcontrol.com
or call:

Central and Eastern Europe:

Turkey +90-216-571-16-00

Russia +7-495-663-78-20

Poland +48-22-543-18-00

Western Europe:

+800-3-694-6367 (toll-free)

+31-115-67-26-26 (phone)

+31-115-67-28-28 (fax)

North America:

+1-800-447-4369 (toll-free)

+1-989-832-1560 (phone)

+1-989-832-1465 (fax)

Middle East and Africa:

UAE +971-4-332-88-66

South Africa +800-99-5078 (toll-free)

Greater China:

Shanghai +86-21-3851-1000

Beijing +86-10-8527-9199

Guangzhou +86-20-3813-0600

Taiwan +886-227-718-000

Southeast Asia:

Philippines +63-2-867-3293

Indonesia +62-21-2995-6273

Singapore +65-6830-4575

+65-6796-6217

Thailand +66-2365-7371

Vietnam +84-8-3822-5808

Malaysia +603-7965-5200

Australia and New Zealand:

+613-9226-3500 (phone)

+61-3-9226-3562 (fax)

Japan and Korea:

Japan +81-3-5460-2261

Korea +82-2-3490-4348

Indian Subcontinent:

+91-22-6793-4953 (phone)

+91-22-6793-4924 (fax)

Latin America:

+55-11-5188-9555 (phone)

+55-11-5188-9400 (fax)

Other Global Areas:

+1-989-832-1560 (phone)

+1-989-832-1465 (fax)

Notice: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

USE BIOCIDES SAFELY. ALWAYS READ THE LABEL AND PRODUCT INFORMATION BEFORE USE.

