Product Safety Assessment
NEOLONE™ CapG Preservative

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Names
- CAS No. 2682-20-4
- CAS No. 1117-86-8
- NEOLONE™ CapG preservative
- Methylisothiazolinone
- 2-Methyl-3(2H)-isothiazolone
- 2-Methyl-4-isothiazolin-3-one
- Caprylyl Glycol
- Methylisothiazolinone, Caprylyl Glycol (INCI name)
- MIT

Product Overview
- NEOLONE™ CapG preservative is a broad-spectrum antimicrobial product based on the active ingredient 2-methyl-4-isothiazolin-3-one (methylisothiazolinone). This product is formulated as a clear, colorless liquid with a mild odor.¹ For further details, see Product Description.
- NEOLONE CapG preservative is added to cosmetics and personal-care products to prevent or retard bacterial growth. NEOLONE CapG preservative is formulated into skin-care lotions and creams, moisturizers, sun-care products, eye and facial cosmetics, and many other personal-care products.² For further details, see Product Uses.
- Worker exposure to NEOLONE CapG preservative is possible during manufacture, transport, or use. Consumers may use personal-care products that contain NEOLONE CapG preservative.³ For further details, see Exposure Potential.
- In the industrial setting, eye contact with undiluted product may cause severe irritation and permanent eye injury. Skin contact may result in severe irritation. Some individuals may experience sensitization through skin contact. Inhalation of product vapor or mist during processing may irritate the nose, throat, and lungs.⁴ For further details, see Health Information.
- Methylisothiazolinone, the active ingredient in NEOLONE CapG preservative, is not persistent and is quickly degraded in the environment. Methylisothiazolinone has a low risk of accumulating in the food chain and is considered highly toxic to aquatic organisms on an acute basis.⁵ For further details, see Environmental Information.
- NEOLONE CapG preservative is stable under recommended storage and use conditions. Avoid contact with oxidizing agents, amines, reducing agents, and mercaptans.⁶ For further details, see Physical Hazard Information.
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Manufacture of Product

- **Capacity** – NEOLONE™ CapG preservative is formulated in Buchs, Switzerland, by ACIMA Chemical Industries, a wholly owned subsidiary of The Dow Chemical Company.
- **Process** – NEOLONE CapG preservative is manufactured using proprietary Dow materials and technology. The chemical structure of the active substance 2-methyl-4-isothiazolin-3-one is shown below:

![Chemical Structure](image)

Product Description

NEOLONE™ CapG preservative is a broad-spectrum antimicrobial product based on the active ingredient 2-methyl-4-isothiazolin-3-one or methylisothiazolinone. It prevents or retards the growth of bacteria, yeasts, and molds. NEOLONE CapG preservative is formulated as a clear, colorless liquid with less than 1% active ingredient. The level is further reduced when formulated into the final product. This product also contains the emollient caprylyl glycol. An “emollient” softens and soothes the skin.

Product Uses

NEOLONE™ CapG preservative is globally approved for use as a preservative in cosmetics and personal-care products. The active ingredient methylisothiazolinone protects cosmetics and personal-care products from spoilage resulting from inadvertent contamination by the consumer during use. NEOLONE CapG preservative is used as a preservative and bacterial-growth inhibitor in the following applications:

- Skin-care lotions and creams
- Body moisturizers
- Sun-protection products – including sunscreens with avobenzone
- Hair-care gels, shampoos
- Wipes
- Bath products – all types of rinse-off applications
- Eye and facial makeup

Exposure Potential

NEOLONE™ CapG preservative is used in the production of personal-care products and cosmetics. Based on this, the public could be exposed through:

- **Workplace exposure** – Those working with NEOLONE CapG preservative in manufacturing and/or formulating operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing facility should have a thorough training program for employees and appropriate work processes and safety equipment in place to limit exposure. See Health Information.
- **Consumer exposure to products containing NEOLONE CapG preservative** – NEOLONE CapG preservative is not sold for direct consumer use, but it is formulated into personal-care products, such as skin-care lotions and creams, used by the general public. The active ingredient methylisothiazolinone is globally approved for safety in concentrations of up to

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0.01% by weight (100 ppm). Always read and follow product label instructions before use. See Health Information.

- **Environmental releases** – Because NEOLONE™ CapG preservative is formulated into personal-care products, small quantities could enter wastewater-treatment facilities when consumer products are washed off or discarded. The main active ingredient methylisothiazolinone biodegrades rapidly in both water and soil environments and is effectively removed by wastewater-treatment facilities. Methylisothiazolinone is highly toxic to aquatic organisms. See Environmental, Health, and Physical Hazard Information.

- **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, the focus is on immediate containment to prevent contamination of soil and surface or ground water. Ventilate the area. Cleanup personnel must wear an approved respirator. Dike the spill and absorb with inert solids such as sand or soil. Sweep or vacuum up spillage and collect in suitable and properly labeled containers. Dispose of inert solids with absorbed methylisothiazolinone according to all applicable governmental requirements. See Environmental, Health, and Physical Hazard Information.

- **In case of fire** – Isolate the area and deny any unnecessary entry. Use extinguishing media appropriate for the surrounding fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Contain fire water if possible to minimize the potential for environmental damage. Combustion can generate toxic nitrogen oxides and sulfur oxides. Follow emergency procedures carefully. See Environmental, Health, and Physical Hazard Information.

For more information, see the relevant Safety Data Sheet.

**Health Information**

The safety of methylisothiazolinone has been assessed by the Cosmetic Ingredient Review (CIR) Expert Panel. The CIR Expert Panel evaluated the scientific data and concluded that methylisothiazolinone is safe for use as a cosmetic ingredient at concentrations up to 100 ppm.

- **Eye contact** – Contact with undiluted product during manufacturing can cause severe eye irritation and possible permanent eye injury.

- **Skin contact** – Contact with undiluted product may cause severe skin irritation. Skin contact may cause skin sensitization in susceptible individuals.

- **Inhalation** – Inhalation of product vapor or mist during processing can cause irritation of the nose, throat, and lungs.

- **Ingestion** – Undiluted product may be harmful if swallowed.

For more information, see the relevant Safety Data Sheet.

**Environmental Information**

Methylisothiazolinone, the active ingredient in NEOLONE™ CapG preservative, is soluble in water and, when introduced to the environment, will have a tendency to migrate to or remain in water.

Methylisothiazolinone is unlikely to persist in the environment. It is rapidly degraded to intermediates that are in turn readily biodegradable. As a result, the substance is expected to
rapidly biodegrade in both water and soil environments, including biological wastewater-treatment facilities.

Methylisothiazolinone is not likely to accumulate in the food chain (bioconcentration potential is low) and is highly toxic to aquatic organisms on an acute basis.

For more information, see the relevant Safety Data Sheet.

Physical Hazard Information

NEOLONE™ CapG preservative is stable under recommended storage and use conditions. Avoid contact with oxidizing agents, amines, reducing agents, and mercaptans.

For more information, see the relevant Safety Data Sheet.

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of NEOLONE™ CapG preservative. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet, Technical Data Sheet, or Contact Us.

Additional Information

- Contact Us (www.dow.com/microbial/contact/index.htm)
- NEOLONE CapG Preservative Global Cosmetic Dossier Version 6, Rohm and Haas Company, May 22, 2011 (request from the Dow Customer Information Group)
- Web page for NEOLONE for Personal Care: Preservatives for skin, sun, and hair care (www.dow.com/products/product_line_detail.page?product-line=1000064)

For more business information about NEOLONE CapG preservative, visit the Dow Microbial Control website at www.dow.com/microbial.
References


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