

# Isothiazolinones

## Properties and Characteristics

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Isothiazolinones are a class of broad spectrum biocides composed of 5-chloro-2-methyl-4-thiazoline-3-ketone (CMI) and 2-methyl-4-thiazoline-3-ketone (MI). The antibacterial and antifungal effects of Isothiazolinones are carried out by breaking the bond between bacteria and algae protein. Isothiazolinones can efficiently inhibit and eliminate microbial growth. Isothiazolinones are used to control the growth of microorganisms such as bacteria, fungi and yeast, and are generally compatible with most components of industrial formulations. Isothiazolinones are an excellent sludge stripper when used in high concentration dosage rates.

Chloro-methyl-isothiazolinone is a preservative with antibacterial and antifungal effects, within the group of isothiazolinones. It is effective against gram-negative and gram-positive bacteria, fungi and yeast and is found in many water-based industrial solutions.

Methyl-isothiazolinone is a powerful biocide and preservative, within the group of isothiazolinones. It is utilized for controlling microbial growth in solutions containing water.

## Specifications

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Property	Value
CAS Number	26172-55-4; 2682-20-4
Other Names	Benzalkonium Chloride; Lauryl Dimethyl Benzyl Ammonium Chloride
Molecular Formula	2-methyl-4-thiazoline-3-ketone; 5-chloro-methyl-4-thiazoline-3-ketone
Molecular Weight	115.16

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Item	Grade I	Grade II
Appearance	Amber transparent liquid	Light yellow waxy solid
Active Content	14% min	1.5% min
CMI/MI	2.5 – 4.0%	2.5 – 4.0%
pH (original solution)	1.0 – 4.0	2.0 – 5.0
Density (20°C)	1.25 g/cm <sup>3</sup> min	1.02 g/cm <sup>3</sup> min

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Note: 2%, 4% and 8% or other concentrations can be supplied on demand.

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## Applications

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Isothiazolinones are antimicrobials used to control bacteria, fungi, and algae in cooling water systems, fuel storage tanks, pulp and paper mill water systems, oil extraction systems, wood preservation and antifouling agents. Isothiazolinones are frequently used as preservatives in water-based personal care products such as shampoos, certain paint formulations, and many other household and industrial products. When Grade II Isothiazolinones are used as a sludge stripper, the preferred dosage is 150-300mg/L. When used as biocide, the preferred dosage is 80-100mg/L, changed every 3-7 days. Antimicrobial effects are significantly improved when Isothiazolinone is used in combination with quaternary amine. When used as industrial fungicide, the preferred dosage is 0.05-0.4%. The product should not be used with oxidative fungicidal agents such as chlorine, and should not be used in cool water circulating systems containing sulfur.

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## Packaging

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25kg plastic barrel, or as requested by clients.

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## Handling

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Product can be a skin and membrane irritant in pure form or in high concentrations. Wear splash-resistant safety goggles and rubber gloves during use. Product should be used in a well-ventilated area. Avoid direct contact with eyes, skin, and clothing. In case of contact, immediately flush exposed area with water.

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## Storage

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Store in a tightly closed container in a dry and cool place, away from incompatible materials. Keep container closed when not in use. Store above freezing. Storage life: 10 months.