
ISOCILTM

Isocil is a manufacturing use product which can be used to make high performance biocides. It has extremely broad spectrum activity, controlling bacteria, fungi and yeasts while being compatible with most components in a formulation. Very low use levels make this product one of the most cost effective solutions on the market.

Chemical Composition

Isocil is comprised of two primary active compounds, 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one, in a dilute aqueous solution that permits easy and safe handling.

Active Ingredients

	<u>% WT/WT</u>
5-Chloro-2-methyl-4-isothiazolin-3-one	10.80%
2-Methyl-4-isothiazolin-3-one	3.83%
Total active ingredients	14.63%

Inert Ingredients

Magnesium salts (As Mg(NO ₃) ₂)	~23%
Water	~63%

Typical Properties

Appearance	Clear Liquid
pH	2-4
Odor	Mild

Compatibility

Isothiazolinones are generally compatible with most components of industrial formulations. However, the presence of a few agents will cause degradation of the active ingredients (and therefore some care is necessary). Agents such as thiols, mercaptans, secondary amines, sulfides and other nucleophiles are to be avoided in formulations. Conditions of high heat for long periods of time (> 50°C) and pH above 9 will lead to loss of activity.

The seller makes no warranty, expressed or implied, concerning the accuracy of any results to be obtained from the use of this information and no warranty is expressed or implied concerning the use of these products other than indicated within. The buyer assumes all risks of use and/or handling. No statement is intended or should be construed as a recommendation to infringe any patent

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Biocidal Performance

Isocil isothiazolinone is a more cost effective biocide preservative due to the extremely low use levels required. While the specific use levels are application dependent, the following MIC values for isothiazoline activities are indicative of the effectiveness of the product.

Bacteria	ATCC No.	PPM, Isothiazoline 1.5% Active	Bacteria	ATCC No.	PPM, Isothiazoline 1.5% Active
Gram-Negative			Gram-Positive		
Achromobacter parvulus	4335	300	Brevibacterium ammoniagenes	6871	600
Alcaligenes faecalis	8750	300	Bacillus cereus	11778	600
Enterobacter aerogenes	3906	600	Bacillus subtilis	6633	600
Escherichia coli	11229	600	Sarcina lutea	9341	600
Flavobacterium suaveolens	958	600	Staphylococcus aureus	6538	750
Klebsiella pneumoniae	13883	600	Staphylococcus epidermidis	155	600
Proteus vulgaris	8427	600	Staphylococcus agalactiae	624	600
Pseudomonas aeruginosa	15442	600			
Pseudomonas cepacia	25416	600			PPM, Isothiazoline 1.5% Active
Pseudomonas fluorescens	13525	600			
Pseudomonas oleovorans	8062	300			
			Fungi	ATCC No.	
Salmonella choleraesuis (typhi)	6539	600	Asperigillus niger	9642	>750
Shigella sonnei	9290	600	Asperigillus oryzae	10196	750
Serratia marcescens	8100	600	Chaetomium globosum	6205	600
			Gliocladium fimbriatum	32913	>750
			Mucor rouxii	24905	>750
			Penicillium funciculosum	9644	750
			Pullularia (Aureobasidium) pullulans	9348	>750
			Rhizopus stolonifer	10404	750
Yeast	ATCC No.	PPM, Isothiazoline 1.5% Active			
Candida albicans	11651	600			
Rhototorula rubra	9449	600			
Saccharomyces cerevisiae	2601	600			

Safety and Handling

Isothiazolinones at 14% active, are corrosive and potential skin sensitizers. As such, keeping these solutions away from the skin is essential. Due diligence must be maintained at all times while handling these materials. When working with Isocil, ensure that workers will not come in direct contact with the product. Proper selection of personal protective equipment is essential. Even if the slightest spill were to be absorbed onto a worker's clothing, it may work its way through and cause a delayed skin burn. If significant aerosolization is expected, then the appropriate self contained breathing apparatus is required.

Regulatory Information:

EPA Reg. No. 6836-238

For questions or for further information, please contact Lonza Technical Sales Support at contact.allendale@lonza.com or call 1-800-365-TECH (8324).