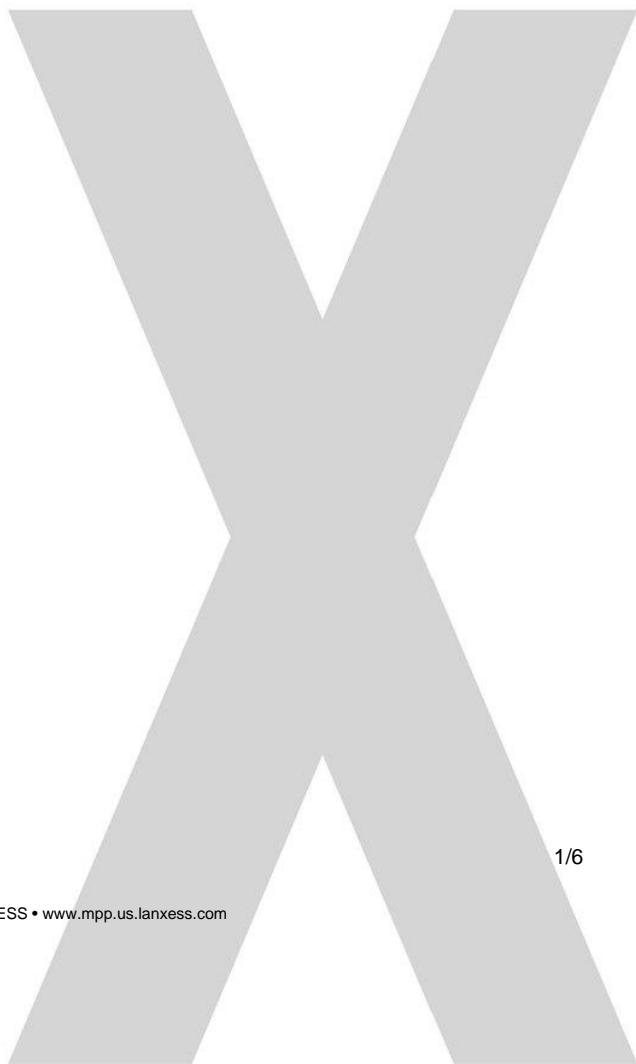


Product Information

Preventol® P 91 MV

Liquid preparation of 2-bromo-2-nitropropane-1,3-diol (Bronopol) and 5-Chloro-2-methyl-4-isothiazolin-3-one (CMIT) and 2-Methyl-4-isothiazolin-3-one (MIT)



Preventol® P 91 MV**EPA Registration No. 39967-79****Uses**

For industrial use as a preservative to inhibit the growth of bacteria, fungi, yeast in polymer emulsions, aqueous compositions, inks & fountain solutions, metalworking fluids (Tankside), Adhesives, cleansers & detergents, general preservation and mineral slurries. Designed to preserve products which are sensitive to multivalent salts.

Chemical and physical data

Active ingredient:	approx. 10 % 2-bromo-2-nitropropane-1,3-diol (Bronopol) approx. 1.0 % Isothiazolinones (CMIT/MIT)
Product description:	colorless to pale yellow liquid

Specification

The specification parameters can be found in the currently valid product specification.

Characteristic data*

Density (68 °F / 20 °C):	1.01 - 1.12 g/cm ³
Viscosity (68 °F / 20 °C):	approx. 1.5 mPa s (DIN 53019)
Boiling point:	approx. 210 °F / 99 °C (DIN 53171)
Pour point:	-2 °C (DIN ISO 3016)
Vapor Pressure (68 °F / 20 °C): Vapor Pressure (122 °F / 50 °C):	23 mbar 107 mbar
Ignition temperature:	>500 °C
pH:	3 - 5.5
Solubility:	easily soluble in cold water

*These items are provided as general information only. They are approximate values and are not considered to be part of the product specifications.

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Storage

Product should be stored in the original sealed package. The shelf life of this product is 1 year. Since Preventol® P 91 MV is an aqueous solution, appropriate measures should be taken to ensure it does not freeze during the transport and storage. Do not store at temperatures exceeding 104 °F / 40 °C.

Spectrum of activity

Minimal Inhibitory Concentration (MIC) in ppm of Preventol® P 91 MV**

Gram Positive Bacteria	MIC (ppm)
<i>Corynebacterium striatum</i>	25
<i>Micrococcus luteus</i>	50
<i>Staphylococcus aureus</i>	25
<i>Streptococcus pyogenes</i>	10

Gram Negative Bacteria	MIC (ppm)
<i>Escherichia coli</i>	25
<i>Enterobacter aerogenes</i>	25
<i>Klebsiella pneumoniae</i>	10
<i>Pseudomonas aeruginosa</i>	50
<i>Proteus vulgaris</i>	25
<i>Salmonella typhi</i>	25
<i>Serratia marcescens</i>	25

Yeasts	MIC (ppm)
<i>Candida albicans</i>	75

** MIC values are from laboratory testing.

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Application

Preventol® P 91 MV is a blended microbicide containing a mixture of bronopol and isothiazolinones. The combination of these two active ingredients provides a broader and more balanced spectrum of activity against bacteria (aerobic and anaerobic), mold and yeast.

Preventol® P 91 MV is a colorless liquid with a slight odor. This product is easily incorporated into the finished product since it is soluble in water, alcohols and glycols. It can be incorporated at any stage of the production process, but it is best to add it in the initial stage.

However, if higher temperatures (>104 °F / 40 °C), the presence of highly reactive components, or pH values >9 occur during the manufacturing process the product should be added at the end of the process or to the finished product below critical conditions. In this case, take care to distribute the preservative uniformly in order to ensure a homogeneous mixture within the product. Since Preventol® P 91 MV has a low viscosity, the product can be added directly or pre-dissolved in water.

Preventol® P 91 MV is also compatible with surfactants and emulsifiers regardless of their ionic nature. Preventol® P 91 MV will not adversely affect product physical properties or performance and should not impart odor or color to most final products.

The use of the monovalent stabilized Preventol® P 91 MV in an aqueous formulation does not generally cause any undesirable stability issues. Even sensitive polymer emulsions, which tend to coagulate when multivalent metal salts are added to the formulation, can be easily preserved with the Preventol® P 91 MV.

It is recommended to conduct preliminary tests on compatibility and biological effectiveness for each new application. The approved dosage level ranges are provided in the chapter "Directions for use" further below, but variables such as pH, temperature, initial microbial count or intended storage time of the product to be preserved should be taken into account.

Stability range

Preventol® P 91 MV is best used in acidic to weakly alkaline environments. The use of Preventol® P 91 MV at higher alkalinity (pH >8.5 - 9.0), especially if exposed for longer periods of time, may lead to accelerated degradation of the active ingredients.

Degradation of the active ingredients may also be accelerated at temperatures exceeding 104 °F / 40 °C; therefore Preventol® P 91 MV should be added at later stages of the production process when lower temperatures exist.

As with any product, the use of this product, must be tested including field testing prior to incorporating into the finished product.

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Material Compatibility

Preventol® P 91 MV is compatible with high quality stainless steel. Compatibility tests are recommended for other metallic materials. Plastic materials like, PE, HDPE, and PTFE are compatible and suitable for handling and storage of Preventol® P 91 MV.

Directions for use

It is a violation of Federal law to use this product in a manner inconsistent with its labelling. The following guidance is given as an approximation for each use pattern, but field-testing is recommended to achieve optimum effectiveness.

Application	Dosage Levels
Water-based Printing Inks and Fountain Solutions	0.05 - 0.30 %
Concentrate Fountain Solution	0.05 - 6.0 %
Metalworking Fluids - Tankside	0.05 - 0.30 %
Polymer Emulsions	0.05 - 0.38 %
Adhesives	0.05 - 0.30 %
Mineral Slurries	0.05 - 0.30 %
Cleaners and Detergents	0.05 - 0.20 %
General Preservation	0.05 - 0.30 %
Preservative for aqueous compositions	0.05 - 0.33 %



Preventol® P 91 MV

Registration / Approval / Recommendation**

EPA Registration No. 39967-79

****Regulatory Compliance Information:** Some of the end uses of the products described in this bulletin must comply with applicable regulations, such as the FDA, NSF, USDA, and CPSC. If you have any questions on the regulatory status of these products, contact your LANXESS Corporation representative or the LANXESS Regulatory Affairs Manager in Pittsburgh, PA.

Health & Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling the LANXESS products mentioned in this publication. For materials mentioned which are not LANXESS products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be followed. Before working with any of these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., *material safety data sheets and product labels*. Consult your LANXESS Corporation representative or contact the LANXESS Product Safety and Regulatory Affairs Department in Pittsburgh, PA.

Precautions

Preventol® P 91 MV is supplied as a clear low viscosity solution. When handling Preventol® P 91 MV, general recommendations for handling any chemicals should be observed, e.g. wearing of protective clothing, safety goggles and protective gloves. Skin contact and inhalation of vapors should be avoided. If the product comes into contact with the body, the affected area should be washed immediately with large amounts of soap and water (e.g. product that has been splashed in the eyes should be rinsed out immediately with plenty of water). If irritation persists, the affected individual should obtain medical attention. Contaminated clothing should be removed and properly cleaned separately or disposed.

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The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

Note: The information contained in this bulletin is current as of the edition date. Please contact LANXESS Corporation to determine if this publication has been revised.

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