

# Maguard™ Plus I

## Multifunctional, Cost-Effective Alternative Preservative for Personal Care Products - Paraben, Formaldehyde & Isothiazolinone Free -

### Overview

**MAGUARD™ PLUS I** is characterized as a proprietary, Patent Pending blend of INCI listed ingredients. Containing one of the most cost-effective and safest fungicides in 3-Iodo-2-Propynyl Butyl Carbamate (IPBC) and benzoic acid in combination with a fluoroaliphatic quaternary ammonium surfactant used as a stabilizer and hair and skin conditioning agent, and Glycereth-2 Cocoate for exceptional moisturization properties.

**MAGUARD™ PLUS I** is a cost-effective alternative Personal Care products preservative that provides a high level of antimicrobial activity, in an easy to handle liquid. Paraben, formaldehyde and isothiazolinone free, it is remarkably effective in inhibiting the growth of bacteria, yeasts and molds. Functional at low concentration, **MAGUARD™ PLUS I** is fully compatible with surfactants, emulsifiers and proteins, and is stable over wide pH and temperature ranges.

**MAGUARD™ PLUS I** preservative is made up of INCI listed ingredients that have a strong safety history based on comprehensive toxicology results and significant use experience.

Soluble in water based surfactants and oil phase ingredients in emulsions, use **MAGUARD™ PLUS I** to preserve **Shampoos, Conditioners, Personal Scrubbing and Cleansing Wipes, Creams and Lotions, Sun Screens, Makeup and Powders** with confidence.

**INCI Name: Iodopropynyl Butylcarbamate and Benzoic acid and C4-18 Perfluoroalkylethyl Thiohydroxypropyl-trimonium Chloride and Glycereth-2 Cocoate**

**CAS#: 55406-53-6, EINECS# 259-627-5, CAS# CAS# 65-85-0, EINECS# 200-618-2  
CAS# 70983-60-7, ENECS# 275-091-5; CAS# 68201-46-7**

### Typical Properties

Physical form ..... Clear Liquid  
Actives content ..... 12 wt%  
pH.....3.5 – 5.0  
Storage ..... Store between 0°C(32°F) and 32°C(90°F)

### Typical Use Levels

0.1% - 0.6%

### Handling Information

Refer to the Material Safety Data Sheet (MSDS) available from Mason Chemical Company for information on the safe use, handling and disposal of this product.

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# Maguard™ Plus I

**MAGUARD™ PLUS I** is a versatile and cost effective preservative that provides a high level of antimicrobial activity. It is remarkably effective in inhibiting the growth of yeasts and molds. Functional at low concentration, **Plus I** is fully compatible with surfactants, emulsifiers and proteins, and is stable over wide pH and temperature ranges. Used as a Preservative in Personal Care Products, **MAGUARD™ PLUS I** offers efficacy advantages over typical personal care preservatives as the tables below illustrate:

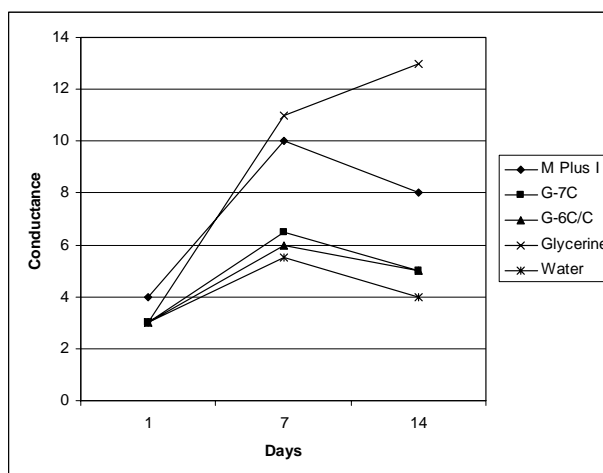
## EFFICACY DATA – PRESERVATIVE CHALLENGE TEST

Cationic Conditioner Sample w/addition of Preservative	Challenge Data – Colony Forming Units per Gram (cfu/g) Mixed Bacteria ( <i>P. aeruginosa</i> , <i>E. coli</i> & <i>S. aureus</i> )				
	Day 0	Day 7	Day 14	Day 21	Day 28
<b>0.20% MAGUARD™ PLUS I</b>	1-3x10 <sup>6</sup>	< 10	<10	< 10	< 10
1.0% Phenoxyethanol/Methyl/Ethyl/Propyl/Butyl Paraben blend	1-3x10 <sup>6</sup>	6x10 <sup>4</sup>	4x10 <sup>4</sup>	1x10 <sup>4</sup>	2x10 <sup>4</sup>

Cationic Conditioner Sample w/addition of Preservative	Challenge Data – Colony Forming Units per Gram (cfu/g) Mixed Fungi ( <i>A. niger</i> & <i>C. albicans</i> )				
	Day 0	Day 7	Day 14	Day 21	Day 28
<b>0.20% MAGUARD™ PLUS I</b>	1-3x10 <sup>5</sup>	< 10	<10	< 10	< 10
1.0% Phenoxyethanol/Methyl/Ethyl/Propyl/Butyl Paraben blend	1-3x10 <sup>5</sup>	3x10 <sup>3</sup>	2x10 <sup>3</sup>	8x10 <sup>2</sup>	6x10 <sup>2</sup>

## Moisturizing Effect

The moisturizing effect of glycerine and its derivatives are well known. The moisturizing ability **Maguard™ Plus I** was compared to the emollients PEG-7 Glyceryl Cocoate (G-7C) and PEG-6 Caprylic/Capric Glycerides (G-6C/C) in a simple composition containing 10% of emollient, 1.5% Polysorbate 60, 0.5% Sorbitan Monostearate in water. In this illustration glycerin was considered as positive control and water as negative control. After application on the same area 2 times a day for two weeks, conductance was measured. **Maguard™ Plus I** showed superior moisturization effectiveness compared to the other emollients.



## FEATURES/BENEFITS

### Features

### Benefits

Paraben Free	Alternative, Better Perception
Isothiazolinone Free	Alternative, Better Perception
Formaldehyde Free	Alternative, Better Perception
Synergistic Efficacy	Cost Effectiveness, Broad Spectrum
Multifunctional	Moisturizer and Thickening Agent
Naturally-Derived Ingredients	Consumer Appeal, Safer alternative, Improved Labelling
Water White Liquid	Ease of Use, Manufacturing Ease
No Animal Testing	No Label Warnings

Refer to Material Safety Data Sheet for Handling and Safety Information and Toxicology Summary.