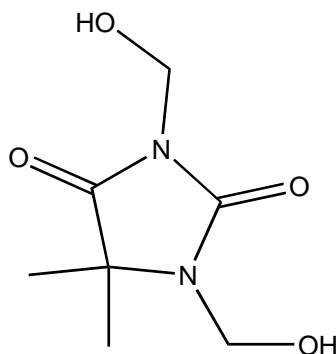


Maguard™ H-55



DMDM Hydantoin Preservative for Personal Care Products

Overview

MAGUARD H-55 is characterized as a 55% active DMDM Hydantoin (DMDMH).

MAGUARD H-55 is a versatile and cost effective preservative that provides a high level of antimicrobial activity. It is remarkably effective in inhibiting the growth of bacteria, yeasts and molds. Functional at low concentration, H-55 is fully compatible with surfactants, emulsifiers and proteins, and is stable over wide pH and temperature ranges.

DMDMH preservatives have a strong safety history based on comprehensive toxicology results and significant use experience. Toxicology studies performed over the years rate DMDMH as one of the safest preservatives available today. DMDMH has been tested extensively to meet personal care regulatory standards in the key global regions.

MAGUARD H-55 is soluble in water, offering ease of use for handling and formulating. Use MAGUARD H-55 to preserve **Shampoos, Conditioners, Personal Scrubbing and Cleansing Wipes, Creams and Lotions, Sun Screens, Raw Materials and Baby Products** with confidence.

INCI Name: DMDM Hydantoin
CAS#: 6440-58-0, EINECS# 229-222-8

Typical Properties

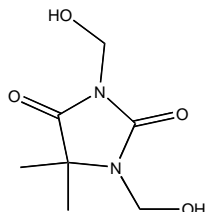
Physical form Water-White Liquid
Actives content >55 wt%
Storage Store between 0°C(32°F) and 32°C(90°F)

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™ H-55



MAGUARD H-55 is a versatile and cost effective preservative that provides a high level of broad-spectrum antimicrobial activity. It is remarkably effective in inhibiting the growth of gram positive and gram negative bacteria, yeasts and molds. Functional at low concentration, H-55 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 H-55 offers efficacy advantages over common personal care preservatives as the tables below illustrate:

EFFICACY DATA – PRESERVATIVE CHALLENGE TEST

Anionic Shampoo 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
0.05% Maguard H-55	1-3x10 ⁶	< 10	<10	< 10	< 10
0.10% Maguard H-55	1-3x10 ⁶	<10	<10	< 10	< 10
0.6% Typical Paraben mix (6,000ppm active)	1-3x10 ⁶	6x10 ³	4x10 ³	1x10 ⁴	2x10 ⁴

Anionic Shampoo 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
0.05% Maguard H-55	1-3x10 ⁵	2x10 ²	<10	< 10	< 10
0.10% Maguard H-55	1-3x10 ⁵	1x10 ¹	<10	< 10	< 10
0.15% Maguard H-55	1-3x10 ⁵	<10	<10	< 10	< 10
0.6% Typical Paraben mix (6,000ppm active)	1-3x10 ⁵	6x10 ³	4x10 ³	1x10 ⁴	2x10 ⁴

REGULATORY INFORMATION

North America

DMDM Hydantoin is approved for use up to 1%.

Europe

DMDM Hydantoin is approved up to the max. concentration of 0.6%.

Japan

DMDM Hydantoin is approved for use, products must have warning label phrase.

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