

Glydant®

Excellent Bactericide for Product Protection



INCI Name: DMDM Hydantoin

Key Product Attributes:

- Excellent bactericide, mild fungicide
- Extremely cost-effective
- Available in liquid and solid versions
- Formulation flexibility
 - Water-white/color stability
 - Compatibility with anionics, nonionics and cationics
 - Heat stability
 - Water solubility
- Has a wide range of global regulatory approval

Recommended Use Level

0.1 – 0.6%

Description

Glydant® is a preservative system that acts as an effective bactericide. This DMDM Hydantoin chemistry has been used safely and effectively for years within personal care. Glydant® works well in most cosmetic formulations and can be used at low use levels. For added ease of use, Glydant® is offered in a liquid format. In addition, there are strong safety and toxicological packages supporting this material.

Compositional Breakdown

Chemical Compound Breakdown	Cas No.	EINECS No.
DMDM Hydantoin	6440-58-0	229-222-8
Water	7732-18-5	231-791-2

Chemical Compound Breakdown	%
DMDMH	54-56%
Water	44-46%

Applications

- Baby care
- Baby wipes
- Body wash
- Conditioner
- Cream
- Deo/ Anti-Perspirant
- Eye creams/gels
- Eye shadow
- Face Lotion
- Face wipes
- Facial Cream
- Foundation
- Hair gel
- Hand soap (non anti-bac)
- Lotion
- Make up remover
- Mascara
- Oil in Water
- Powder
- Shampoo
- Suncare
- Toner
- Water in Oil

Efficacy

Microbiological Challenge Studies

Studies were run using various concentrations of Glydant® 2000, a lower formaldehyde variant in the Glydant range, in a shampoo formulation to see efficacy on a mixed inoculum of bacteria and mixed fungi. All samples were inoculated at the beginning of the study, sampled at 24 hours, 3, 7, 14, 21 and 28 days.

Challenge Test Data in a Protein Shampoo

Ingredient	% wt/wt
Sodium-Laurylthethersulfate	35.0
Triethanol-Laurylsulfate	25.0
Cocodiethanolamide	3.0
Water, DI	36.0
Anhydrous protein	1.0
Preservative	q.s.
Total	100

Efficacy in the cream formulation			Organism count (cfu/ml) / Contact time (days)				
Test Organisms			0	7	14	21	28
Mix Bacteria	Glydant® 2000	0.05%	1.5 x 10 ⁶	< 10	< 10	< 10	< 10
	Glydant® 2000	0.1%	1.5 x 10 ⁶	< 10	< 10	< 10	< 10
	Glydant® 2000	0.2%	1.5 x 10 ⁶	< 10	< 10	< 10	< 10
Mix Fungi	Glydant® 2000	0.1%	6.6 x 10 ⁵	1.6 x 10 ³	1.6 x 10 ³	1.0 x 10 ³	3.6 x 10 ²
	Glydant® 2000	0.2%	6.6 x 10 ⁵	< 10	< 10	< 10	< 10
	Glydant® 2000	0.4%	6.6 x 10 ⁵	< 10	< 10	< 10	< 10

Formulation Recommendations

- Wide pH range: 3 – 10
- Compatible with anionic, cationic and nonionic systems
- Add during cool down phase of process, where possible
- Short bursts of temperature are also acceptable, up to 80°C, in closed systems

Global Regulatory

Europe

- Approved under Annex V to Regulation EC/1223/2009
- Finished products containing DMDMH must be labeled with the warning “contains formaldehyde” if the (free) formaldehyde concentration exceeds 0.05%
- Maximum concentration 0.6% DMDMH

Japan

- Listed in the positive list
- The following warning must be labeled: “should not be used by infants or by people who are hypersensitive to formaldehyde.”
- Can be used at a level up to 0.3% DMDMH for rinse-off only

United States

- Approved by CTFA for both rinse-off and leave-on applications; can be used at a level up to 0.6% DMDMH

Typical Properties	
Appearance	Clear, colorless liquid, low viscosity
Color (APHA)	10 Max
Odor	Low, Characteristic



www.lonza.com

www.lonza.com/personalcare

USA

Lonza Consumer Care
70 Tyler Place
South Plainfield, NJ 07080
Tel +1 908 561 5200

Switzerland

Lonza Ltd
Muenchensteinerstrasse 38
4002 Basel
Tel +41 61 316 81 11

This product information corresponds to our knowledge on the subject at the date of publication and we assume no obligation to update it. It is offered without warranty, and is intended for use by persons who are experienced and knowledgeable in the field and capable of determining the suitability of ingredients for their specific applications. Because we cannot anticipate all variations in actual end-use conditions, we assume no liability and make no warranty in connection with your use of our products or product information. We do not guarantee the efficacy of active ingredients, delivery systems, functional ingredients, rheology modifiers, natural or botanical products, preservative and protection systems or proteins in any specific application or use. The information we provide is not intended to substitute for testing. You should perform your own tests to determine for yourself the suitability and efficacy of ingredients in your application and conditions of use. The information we provide should not be construed as a license to operate under or a recommendation to infringe any patent or other intellectual property right, and you should ensure that your use does not infringe any such rights. Our products are for industrial use only. WE MAKE NO WARRANTY (INCLUDING AS TO MERCHANTABILITY OR FITNESS FOR PURPOSE) OF ANY KIND, EXPRESS OR IMPLIED, OTHER THAN THAT OUR PRODUCTS CONFORM TO THE APPLICABLE PRODUCT SPECIFICATIONS.

© 2015 Lonza Ltd
