

# Geogard® LSA Preservative

## Comparative Challenge Testing Results



Preservative Efficacy Testing (PET) is an important test performed in order to determine whether the preservative used in any given system has enough activity in order to maintain the integrity of a product once it has been contaminated with organisms common to personal care products.

Although there is variance in the performance of preservatives based on the formulation with which it is being used, it is not uncommon for there to be a need to understand how a certain preservative compares to another. In the case of Geogard® LSA non-traditional preservative blend, it has been compared to other chemistries of both traditional and non-traditional nature.

### **Microbiological Challenge Studies**

Preservative Efficacy Testing (CTFA) studies were run comparing several traditional and non-traditional preservatives, including Geogard® LSA blend in various formulations to assess efficacy against various bacteria, yeast and fungi. All samples were inoculated at the beginning of the study, and then sampled at 24 hours, 7, 14, 21 and 28 days. Below is a summary of the results.\*

## Oil in Water Lotion pH 6

Oil in Water Lotion (5985-179) pH 6	
<b>A</b>	
Water, de-ionized	56.00
Urea	5.00
Sorbitan Monostearate (Londest™ SMS)	2.00
Caprylic/capric triglyceride (Aldo™ MCT)	20.00
PEG 1750 Monostearate (Pegospense™ 1750)	1.50
Glyceryl Monostearate (Londest™ MSA)	2.00
Decaglyceryl Monostearate (Polyaldo™ 10-1-S)	5.00
<b>B</b>	
Hydroxyethylcellulose	1.50
<b>C</b>	
Hole for preservative	5.00

48 Hours	<i>S. aureus</i>	<i>P. aeruginosa</i> ; <i>B. cepacia</i>	<i>K. pneumonia</i> ; <i>E. gergoviae</i>	<i>C. albicans</i>	Mixed Molds
Geogard® LSA @ 2.0 %	3.84x10 <sup>3</sup>	<10	<10	<10	140
Phenoxyethanol/ Ethylhexylglycerin @ 0.75%	10 <sup>6</sup>	<10	110	10	1.00x10 <sup>3</sup>
Phenoxyethanol/Parabens 0.90%	10 <sup>6</sup>	<10	1.66x10 <sup>3</sup>	<10	940
Unpreserved	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>5</sup>	10 <sup>5</sup>

1 Week	<i>S. aureus</i>	<i>P. aeruginosa</i> ; <i>B. cepacia</i>	<i>K. pneumonia</i> ; <i>E. gergoviae</i>	<i>C. albicans</i>	Mixed Molds
Geogard® LSA @ 2.0 %	10	<10	<10	<10	<10
Phenoxyethanol/ Ethylhexylglycerin @ 0.75%	2.70x10 <sup>3</sup>	<10	110	<10	520
Phenoxyethanol/Parabens 0.90%	690	<10	<10	<10	490
Unpreserved	10 <sup>4</sup>	<10	10 <sup>5</sup>	150	10 <sup>5</sup>

### Summary

#### At levels tested, Geogard® LSA blend was:

- Faster acting/more effective than phenoxyethanol/EHG blend in controlling *S. aureus* and mixed molds
- Faster acting than the phenoxyethanol/parabens blends against bacteria
- Maybe slightly faster acting/ performs slightly better than phenoxyethanol/parabens blends against mixed molds

## Hair Conditioner pH 3.9–4.2

Hair Conditioner [5985-052B] pH 3.9 – 4.2		%
<b>A</b>		
Water, de-ionized		66.70
Hydroxyethylcellulose		0.30
Cetrimonium Bromide & Cetearyl Alcohol (Lonza CT-100)		1.00
Stearyl Alcohol		1.00
Steareth 21		2.50
<b>B</b>		
Glycosperse 0-20		0.50
Soy Lecithin		1.00
Water, de-ionized		20.00
<b>C</b>		
Hole for preservative		5.00

48 Hours	<i>S. aureus</i>	<i>P. aeruginosa</i> ; <i>B. cepacia</i>	<i>K. pneumonia</i> ; <i>E. gergoviae</i>	<i>C. albicans</i>	Mixed Molds
Geogard® LSA @ 1.5 %	<10	<10	<10	<10	<10
Glydant Plus® Liquid @ 0.3%	<10	<10	<10	<10	<10
Isocil® PC @ 0.075%	<10	<10	<10	<10	<10
Unpreserved	<10	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>5</sup>	10 <sup>5</sup>

1 Week	<i>S. aureus</i>	<i>P. aeruginosa</i> ; <i>B. cepacia</i>	<i>K. pneumonia</i> ; <i>E. gergoviae</i>	<i>C. albicans</i>	Mixed Molds
Geogard® LSA @ 1.5 %	<10	<10	<10	<10	<10
Glydant Plus® Liquid @ 0.3%	<10	<10	<10	<10	<10
Isocil® PC @ 0.075%	<10	<10	<10	<10	<10
Unpreserved	<10	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>5</sup>	10 <sup>5</sup>

### Summary

#### At levels tested, Geogard® LSA blend:

- Performed comparably to Glydant Plus® Liquid
- Performed comparably to Isocil® PC

\*Abbreviated data is displayed in order to show the efficacy of Geogard® LSA within one week after inoculation. Full data reports are available upon request.

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