

**arxada**

# Geogard® ECT

## Broad Spectrum Preservation System



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### Preservation

INCI Name: Benzyl Alcohol & Salicylic  
Acid & Glycerin & Sorbic Acid

Recommended Use Level: 0.6-1.0%



## Description

Geogard® ECT is a unique, patented combination of benzyl alcohol, salicylic acid, glycerin and sorbic acid, which are well accepted in a wide range of personal care products. The novel composition of this antimicrobial blend offers a low cost in use as well as broad spectrum protection in a diverse range of products against Gram-positive and Gram-negative bacteria, yeast and molds at wide pH ranges. Geogard® ECT has a wide range of global regulatory acceptance for personal care products.

## Compositional Breakdown

Chemical Compound	CAS No.	EINECS No.	%
Benzyl Alcohol	100-51-6	202-859-9	77-86%
Salicylic Acid	69-72-7	200-712-3	8-15%
Glycerin	56-81-5	200-289-5	3-6%
Sorbic Acid	110-44-1	203-768-7	1-4%

## Typical Properties

Appearance	Clear, colorless to straw
Color (Gardner)	2 Max.
Odor	Characteristic

## Efficacy

### Microbiological Challenge Studies

Studies were run on five formulas using a 1.0% concentration of Geogard® ECT. The protocol used was a CTFA challenge test. All samples were inoculated at the beginning of the study, sampled at 24 hours, 7, 14, 21 and 28 days. The samples were diluted in neutralizer and plated quantitatively for viable organisms at all sampling times. After 28 days, all samples were re-inoculated and subjected to a second challenge.

## Key Product Benefits

- Broad spectrum activity on bacteria, yeast and molds
- Low odor profile; Ideal for fragrance-free and fragrance-sensitive systems
- Wide pH compatibility: pH 3-8
- Excellent safety profile
- COSMOS & Soil Association approved
- Vegan
- Non-GMO
- Cruelty-free [Not Tested On Animals]
- China compliant

## Applications



Body Care



Hair Care



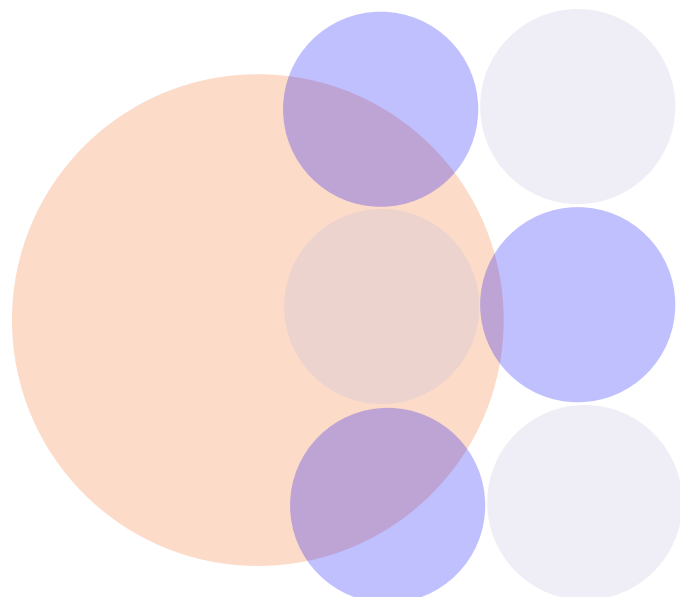
Makeup



Skin Care

## Formulation Recommendations

- Versatile, clear liquid
- Can be easily added directly to most any system
- Compatible with most ingredients used in personal care
- For emulsified systems
- Can be easily integrated post-emulsification at temperatures below 45°C
- Limited pH restrictions





## Hair Conditioner (pH 3.9)

% water: 73.7%;  $A_w$ : 0.976

Ingredient	%
<b>Phase A</b>	
Deionized Water	q.s. to 100%
Hydroxyethylcellulose	0.30%
<b>Phase B</b>	
Cetrimonium Bromide & Cetearyl Alcohol	1.00%
Stearyl Alcohol	1.00%
Steareth-21	2.50%
Polysorbate 80	0.50%
Lecithin	1.00%
Water	20.00%
Total	100.00%



## Hair Conditioner Test Results

Colony Forming Units per Gram (CFU/g)

Test Organism	Unpreserved Control				Test-Geogard® ECT (1%)			
	Initial Challenge		Rechallenge		Initial Challenge		Rechallenge	
	24 hrs	7 days	28 days	28 days	24 hrs	7 days	28 days	28 days
<i>S. aureus</i>	$3.5 \times 10^5$	<10	<10	<10	<10	<10	<10	<10
<i>K. pneumoniae</i> + <i>E. gergoviae</i>	$9.4 \times 10^5$	$3.4 \times 10^5$	$2.6 \times 10^8$	$3.5 \times 10^5$	<10	<10	<10	<10
<i>P. aeruginosa</i> + <i>B. cepacia</i>	$4.9 \times 10^5$	> $10^6$	$3.0 \times 10^8$	<10	$2.0 \times 10^2$	<10	<10	<10
<i>C. albicans</i>	$3.3 \times 10^5$	$3.3 \times 10^6$	$2.7 \times 10^6$	$2.8 \times 10^7$	$6.0 \times 10$	<10	<10	<10
Mixed molds	$2.1 \times 10^4$	$3.5 \times 10^3$	$1.2 \times 10^3$	$1.4 \times 10^4$	<10	<10	<10	<10

## Make-Up Remover (pH 5.15)

% water: 90%; A<sub>w</sub>: 0.980

Ingredient	% wt/wt
Deionized Water	q.s. to 100%
Propylene Glycol	2.00%
Glycerin	2.00%
PEG-8	2.00%
Decyl Glucoside	4.00%
Total	100.00%

## Make-Up Remover (pH 8.1)

% water: 44%; A<sub>w</sub>: 0.965

Ingredient	%
Deionized Water	q.s. to 100%
Propylene Glycol	2.00%
Glycerin	2.00%
PEG-8	2.00%
Decyl Glucoside	50.00%
Total	100.00%

## Make-Up Remover Test Results

Colony Forming Units per Gram (CFU/g)

Test Organism	Unpreserved Control				Test-Geogard® ECT (1%)			
	Initial Challenge			Rechallenge	Initial Challenge			Rechallenge
	24 hrs	7 days	28 days	28 days	24 hrs	7 days	28 days	28 days
<i>S. aureus</i>	9.0×10	<10	<10	<10	2.0×10	<10	<10	<10
<i>K. pneumoniae</i> + <i>E. gergoviae</i>	5.3×10 <sup>3</sup>	<10	<10	<10	4.0×10	<10	<10	<10
<i>P. aeruginosa</i> + <i>B. cepacia</i>	3.3×10 <sup>5</sup>	1.8×10 <sup>6</sup>	1.4×10 <sup>6</sup>	7.7×10 <sup>6</sup>	1.0×10	<10	<10	<10
<i>C. albicans</i>	1.8×10 <sup>4</sup>	1.9×10 <sup>4</sup>	1.2×10 <sup>4</sup>	1.5×10 <sup>4</sup>	<10	<10	<10	<10
Mixed molds	1.5×10 <sup>4</sup>	2.4×10 <sup>4</sup>	1.1×10 <sup>4</sup>	7.0×10 <sup>4</sup>	<10	<10	<10	<10

## Make-Up Remover Test Results

Colony Forming Units per Gram (CFU/g)

Test Organism	Unpreserved Control				Test-Geogard® ECT (1%)			
	Initial Challenge			Rechallenge	Initial Challenge			Rechallenge
	24 hrs	7 days	28 days	28 days	24 hrs	7 days	28 days	28 days
<i>S. aureus</i>	1.0×10 <sup>2</sup>	<10	<10	<10	<10	<10	<10	<10
<i>K. pneumoniae</i> + <i>E. gergoviae</i>	5.1×10 <sup>6</sup>	8.0×10 <sup>6</sup>	2.5×10 <sup>6</sup>	8.0×10 <sup>5</sup>	<10	<10	<10	<10
<i>P. aeruginosa</i> + <i>B. cepacia</i>	4.5×10 <sup>6</sup>	6.6×10 <sup>6</sup>	1.5×10 <sup>6</sup>	3.2×10 <sup>6</sup>	<10	<10	<10	<10
<i>C. albicans</i>	4.0×10 <sup>2</sup>	<10	<10	<10	<10	<10	<10	<10
Mixed molds	1.1×10 <sup>4</sup>	2.5×10 <sup>4</sup>	2.0×10 <sup>4</sup>	1.0×10 <sup>5</sup>	<10	<10	<10	<10

## Water in Oil Emulsion Cream (pH N/A)

% water: 75%;  $A_w$ : 0.963

Ingredient	%
<b>Phase A</b>	
Deionized Water	q.s. to 100%
Glycerin	3.00%
Sodium Chloride	1.00%
<b>Phase B</b>	
Cyclomethicone & Dimethicone	10.00%
Cyclopentasiloxane	8.50%
Cyclomethicone & Dimethicone & Petrolatum	2.50%
Total	100.00%

## Water in Oil Emulsion Cream Test Results

Colony Forming Units per Gram (CFU/g)

Test Organism	Unpreserved Control			Test-Geogard® ECT (1%)			
	Initial Challenge		Rechallenge	Initial Challenge		Rechallenge	
	24 hrs	7 days	28 days	24 hrs	7 days	28 days	28 days
<i>S. aureus</i>	8.6×10 <sup>4</sup>	<10	<10	<10	<10	<10	<10
<i>K. pneumoniae</i> + <i>E. gergoviae</i>	5.6×10 <sup>4</sup>	<10	<10	<10	<10	<10	<10
<i>P. aeruginosa</i> + <i>B. cepacia</i>	3.1×10 <sup>4</sup>	2.9×10 <sup>3</sup>	<10	3.4×10 <sup>5</sup>	<10	<10	<10
<i>C. albicans</i>	4.6×10 <sup>4</sup>	1.3×10 <sup>4</sup>	2.9×10 <sup>3</sup>	5.3×10 <sup>4</sup>	<10	<10	<10
Mixed molds	1.2×10 <sup>4</sup>	9.7×10 <sup>3</sup>	7.0×10 <sup>3</sup>	3.4×10 <sup>5</sup>	<10	<10	<10

## Lotion (pH 7.85)

% water: 89%;  $A_w$ : 0.976

Ingredient	%
Deionized Water	q.s. to 100
Glycerin	2.00%
Cyclomethicone & Dimethicone & Phenyl Trimethicone	2.00%
Cyclopentasiloxane	5.00%
Sodium Acrylate/ Sodium Acryloyldimethyl Taurate Copolymer & Hydrogenated Polydecane & Sorbitan Laurate & Trideceth-6	2.00%
Total	100.00%

## Lotion Test Results

Colony Forming Units per Gram (CFU/g)

Test Organism	Unpreserved Control				Test-Geogard® ECT (1%)			
	Initial Challenge		Rechallenge	Initial Challenge		Rechallenge		
	24 hrs	7 days	28 days	24 hrs	7 days	28 days	28 days	
<i>S. aureus</i>	1.3×10 <sup>6</sup>	1.6×10 <sup>4</sup>	3.0×10 <sup>4</sup>	8.0×10 <sup>3</sup>	7.0×10	<10	<10	<10
<i>K. pneumoniae</i> + <i>E. gergoviae</i>	1.3×10 <sup>6</sup>	9.5×10 <sup>5</sup>	7.0×10 <sup>5</sup>	2.3×10 <sup>3</sup>	2.0×10	<10	<10	<10
<i>P. aeruginosa</i> + <i>B. cepacia</i>	>10 <sup>6</sup>	8.5×10 <sup>6</sup>	4.3×10 <sup>7</sup>	9.8×10 <sup>7</sup>	<10	<10	<10	<10
<i>C. albicans</i>	1.1×10 <sup>5</sup>	1.0×10 <sup>5</sup>	9.0×10 <sup>5</sup>	1.5×10 <sup>5</sup>	8.7×10 <sup>3</sup>	<10	<10	<10
Mixed molds	2.3×10 <sup>6</sup>	9.0×10 <sup>4</sup>	1.6×10 <sup>4</sup>	7.0×10 <sup>4</sup>	1.8×10 <sup>3</sup>	<10	<10	<10

## Global Regulatory

### Europe

- All ingredients approved (Annex V to Regulation EC/1223/2009 formerly Annex VI to Council Directive 76/768/EEC)
  - Max concentration of 1% Benzyl Alcohol, 0.5% Salicylic Acid and 0.6% Sorbic Acid
  - There are restrictions in using salicylic acid in products for children under the age of 3

### Japan

- Benzyl alcohol is not permitted for use as a preservative in final cosmetic products placed on the Japanese market, however it can be used as a cosmetic ingredient

### United States

- All ingredients allowed (CIR/PCPC)
- Refer to present practices of use and concentration

### China

- China compliant; listed on both the IECSC & IECIC inventories

### General

- Cannot be used in products for children under 3 except for shampoo



GEOGARD<sup>®</sup>ECT

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