

Geogard™ ECT (patented)

Broad Spectrum Preservation System



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

SAP Code#: 139650

Key Product Attributes:

- A preservation system that meets the ECOCERT standards
- COSMOS accepted
- Broad spectrum activity on bacteria, yeast and molds
- Has a wide range of global regulatory acceptance
- Water-soluble
- Low odor and color
- Wide pH compatibility: (pH 3 – 8)
- All of the ingredients are approved for use in the US, Europe* and Japan† at the recommended use level

Recommended Use Level

0.6-1.0%

Applications

Skin Care & Decorative Cosmetics

- O/W, W/O and anhydrous systems
- Creams and lotions
- Body butters
- Sunscreens & sun care products
- Lipsticks, liquid and cream make-ups, eyeliners, pressed powders and mascara

Hair Care

- Styling gels
- Shampoos and conditioners

** In Europe, there are restrictions in using Salicylic Acid in products for children under the age of 3.*

† In Japan, Benzyl Alcohol is not an approved cosmetic preservative, however it can be used as a cosmetic ingredient.

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Formulation Recommendations

- Clear liquid that can be easily added directly to most any system
- Compatible with most ingredients used in the Personal Care Industry
 - Water soluble up to 1.2%
 - Soluble in most glycols and in glycerin
 - Soluble in canola oil and Lonza's PhytoTerra™ Organic Baobab Oil
- For emulsified systems, can be easily integrated post-emulsification, at temperatures below 45 °C

Efficacy

Microbiological Challenge Studies†

Protocol:

- 5 formulations using 1.0% concentration of Geogard™ ECT
- Formulation type varied as well as pH
- Samples inoculated at beginning of study
- Sampled at 24 hours and weekly for 4 weeks
- Four weeks after initial challenge, samples were challenged again and the same sampling regimen followed

Results:

In each test, Geogard™ ECT performed very well at every stage, including 28-day re-challenge.

Make-Up Remover (Lot# KKL-1445)

pH: 8.1

| 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 |

Test Results

Colony Forming Units per Gram (CFU/g)

| Test Organism | Unpreserved Control | | | Test-Geogard™ ECT (1%) | | |
|---|---------------------|---------------------|---------------------|------------------------|---------|-------------|
| | Initial Challenge | | Rechallenge | Initial Challenge | | Rechallenge |
| | 24hrs | 28 days | 28 days | 24hrs | 28 days | 28 days |
| <i>S. aureus</i> | 1.0x10 ² | <10 | <10 | <10 | <10 | <10 |
| <i>K. pneumoniae</i> + <i>E. gergoviae</i> | 5.1x10 ⁶ | 2.5x10 ⁶ | 8.0x10 ⁵ | <10 | <10 | <10 |
| <i>P. aeruginosa</i> + <i>B. cepacia</i> | 4.5x10 ⁶ | 1.5x10 ⁶ | 3.2x10 ⁶ | <10 | <10 | <10 |
| <i>C. albicans</i> | 4.0x10 ² | <10 | <10 | <10 | <10 | <10 |
| <i>C. albicans</i> | 1.1x10 ⁴ | 2.0x10 ⁴ | 1.0x10 ⁵ | <10 | <10 | <10 |

† Full technical report available on this challenge and other 4 formulation challenge tests.

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