

## BIOPOLYSAN<sup>®</sup> 220B

### Multifunctional Preservative for Cosmetic Products

#### Benefits:

- Formulated with plant based Biopolysan<sup>®</sup> 220 (lauric esters) for use in natural and organic cosmetics
- A **broad spectrum** antimicrobial - natural coconut or palm kernel oil derived C12 lauric esters plus benzyl alcohol
- A skin conditioning emollient and humectant with **luxurious skin feel, no after tackiness and very low odor**
- Excellent solvent or carrier for fragrances or active ingredients - other botanicals, essential oils, other actives
- Clear, **water-soluble** liquid - cold process capable

Biopolysan<sup>®</sup> 220B is a 50/50 mixture of plant derived Biopolysan<sup>®</sup> 220 and benzyl alcohol. It was developed to exploit certain active botanical constituents that, in nature, are used by plants to provide protection from microbes. These otherwise insoluble ingredients, when combined, rearranged and concentrated using our patented liquid delivery system<sup>1</sup>, are very effective in both preserving formulations while providing an appealing texture and skin feel, and promoting healthy, attractive skin.

Biopolysan<sup>®</sup> 220B was designed to be very easy-to-use when formulating cosmetic and personal care products.

**INCI Name:** Benzyl Alcohol (and) Diglycerin (and) Polyglyceryl-2 Laurate.

**Directions for Use:** Recommended use levels and concentration depend upon the application and type of product. Biopolysan<sup>®</sup> 220B may be added to the oil and/or water phase.

For use as a preservative: 0.5% - 3.0% wt/wt%

Other personal care applications, including emollient/humectant: up to 10% wt/wt%

For hair care products: up to 20% wt/wt%

To ensure adequate preservation, preservative challenge testing is required. Contact Copperhead Chemical about study sponsorship opportunities.

**About Copperhead Chemical Company<sup>®</sup>:** Copperhead is a leading manufacturer of active pharmaceutical ingredients and specialty chemicals located in Tamaqua, PA USA. Copperhead is dedicated to quality and operates in accordance with Good Manufacturing Practice regulations enforced by the U.S. FDA. Contact information is as follows:

#### Sales and Technical Support:

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<sup>1</sup> Methods and compositions for novel liquid crystal delivery systems. U.S. Patent Number: 8,546,593.