

HydroSal™ Antiseptic

PID# 7016

Clinical strength with natural ingredients
for long lasting protection

HydroSal™ Antiseptic is an encapsulated blend of natural oils, with antiseptic and anti fungal properties to protect the skin throughout the day, and is used as a preservative for cosmetic products.

The obstacles facing the incorporation of essential botanical oils with antibacterial properties into cosmetic applications are two-fold. First, essential oils have an intense unpleasant odor, and second, loss of effectiveness over time due to their solubility either into the skin oils or into the emulsion bases that dilute the concentration (Minimum Inhibition Concentration, MIC) resulting in reduced efficacy.

The Technology:

HydroSal™ Antiseptic is an encapsulated blend of natural functional ingredients infused into a highly porous submicron sphere, then coated with a thin polymeric film, creating a shell (Phase: A). This shell forms a tight film “in-situ” within 5-10 min upon application while the product dries out. (Phase: B)

HydroSal™ is applied onto the skin from a water-based spray or lotion. The mechanism of release is based on natural diffusion and moisture activated erosion of the “Shell” (Phase: C). This encapsulation process reduces the odor while increasing the deposition and sustain the release of the active ingredients onto the skin.

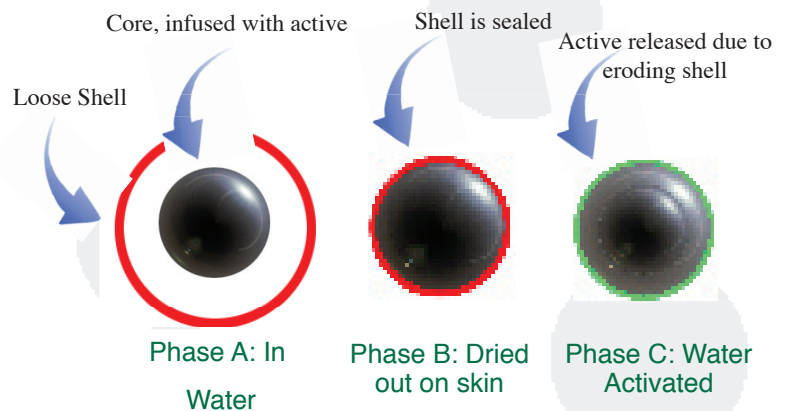


Figure 1: HydroSal™ Technology?

- HydroSal™** in a water suspension
- HydroSal™** on the skin, in a dry form after the shell has formed around the core encapsulating the actives
- Following moisture activation, the shell erodes and releases the encapsulated functional ingredients

Essential oil actives with clinically documented efficacy as antibacterial and anti fungal properties include: Tea Tree Oil, Lemongrass Oil, Origanum Vulgare Leaf Extract, Thyme Extract, Cinnamomum Zeylanicum Bark Extract, Rosemary Leaf Extract, Lavender Flower Extract, Lemon Peel Extract, Peppermint Leaf Extract, Golden Seal and Olive Extract.



¹US Patent Application No. 20030053

HydroSal™ Antiseptic In-Vivo Studies

HydroSal™ Antiseptic In-Vivo Studies from lotion

Using an alcohol “skin extraction method” where both lotions were applied to the skin, then extracted for quantitative analysis by GC- MS. Preliminary data shows that the **HydroSal™ Antiseptic**, generate a 3-fold higher peak area compared to the free Antiseptics over 8 hours.

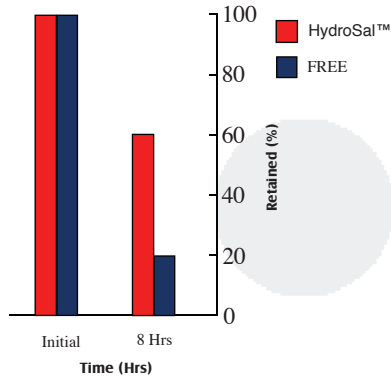


Figure 2: The graph shows the results of an In-Vitro study to determine the amount of the active deposited onto the skin from a lotion comparing HydroSal™ Antiseptic versus Free antiseptic.

HydroSal™ Antiseptic In-Vivo Studies from a spray

Two sprays were applied to the skin, then analyzed by GC- MS using skin extraction method. Preliminary clinical data shows the amount of active retained from **HydroSal™ Antiseptic** spray is 10 times more than the free.

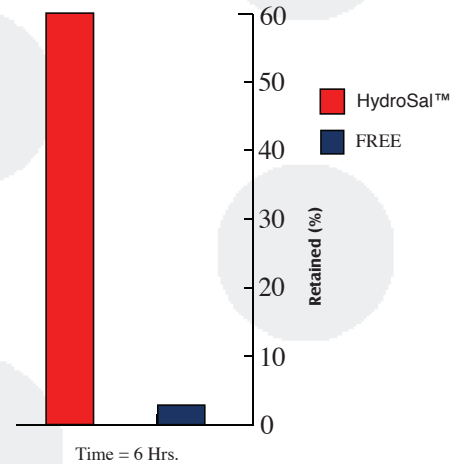


Figure 3: The graph shows that 6 hours after a spray application, the amount of the active retained is 10 times higher than that of the Free active retained on the skin.

INCI NAMES:

Polyvinol Alcohol (and) Acrylate Polymer/C12-22 Alkyl Methacrylate Copolymer (and) Water (and) Melaleuca Alternifolia (Tea Tree) Leaf (and) Cymbopogon Citratus (Lemongrass) (and) Origanum Vulgare Leaf Extract (and) Thymus Vulgaris (Thyme) Extract (and)Cinnamomum Zeylanicum Bark Extract (and) Rosmarinus Officinalis (Rosemary) Leaf Extract (and) Lavandula Angustifolia (Lavender) Flowe Extract (and) Citrus Medica Limonum (Lemon) Peel Extract (and) Mentha Piperita (Peppermint) Leaf Extract (and) Hydrastis Canadensis (Golden Seal) Root Extract (and) Olea Europaea (Olive) Leaf Extract (and) Zea Mays (Corn) Starch (and) Hydrolyzed Corn Starch (and) Hydrolyzed Corn Starch Octenylsuccinate

Product Specifications: PID# 7016

Appearance:	Liquid, to paste white dispersion
Average Particle Size:	0.01 +/- 0.05 microns
Odor:	Typical odor
Payload:	>20% by wt
Shelf life:	12 months
Solubility / Compatibility:	Freely dispersible in most water and alcohol based formulations
Storage Conditions:	Closed container, room temperature
Usage Level:	10% to reach MIC

