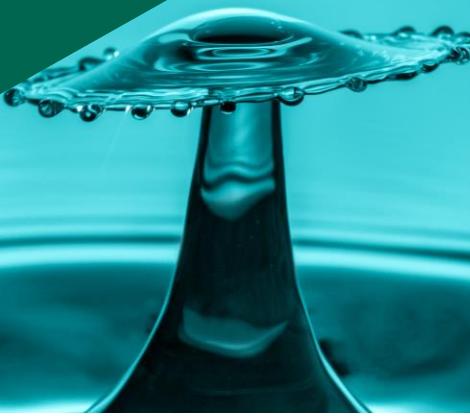


# Active Performance Bio-Shield

## Drench Your Skin With Moisture



### Active Performance Bio-Shield\*

INCI	Water (and) Dicaprylyl Ether (and) Squalane (and) Glycerin (and) Propanediol (and) Polyglyceryl-10 Oleate (and) Polyglyceryl-10 Oleate (and) Polyglyceryl-3 Oleate (and) Squalene (and) Phospholipids (and) Tocopheryl Acetate (and) Glycine Soja (Soybean) Sterols (and) Glyceryl Cocoate (and) Cetyl Alcohol (and) Behenyl Behenate (and) Sodium Hyaluronate
CAS#	732-18-5, 629-82-3, 111-01-3, 56-81-5, 504-63-2, N/A, 79665-93-3, 111-02-4, 123465-35-0, 7695-91-2, N/A, 61789-05-7, 36653-82-4, 17671-27-1, 9067-32-7
EC#	231-791-2, 211-112-6, 203-825-6, 200-289-5, 207-997-3, N/A, 279-230-0, 203-826-1, N/A, 231-710-0, N/A, 263-027-9, 253-149-0, 241-646-5, N/A

Contains Bio-Mimetic Lipids & Hyaluronic Acid

Luxurious, Fast Absorbing, Non-Greasy

Rejuvenating, Skin-Renewing, Anti-Aging

Soothing

Smoothness, Softness, Radiance

Easy to Use, Versatile, Sprayable

### Recommended applications

- Creams, Lotions & Cream-Gels
- Foundation, Primers, BB & CC Creams
- Moisturizers, Treatments & Serums
- Sun Care
- Cold Process
- Formulas, Sprays



\*Available in MB grade upon request

Vantage

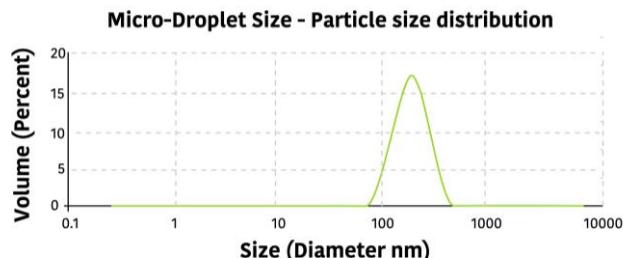
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Typical Properties of	Active Performance Bio-Shield
Appearance @25 °C	White to Off-White Liquid
Odor	Characteristic
Specific Gravity	0.85 – 1.10
Viscosity RVT, 4, 10 RPM, 1 min.	2500 – 7000 cps
Recommended Use Level	10-100%

## How do I use Active Performance Bio-Shield?

Ideal for normal, dry and sensitive skin types, Active Performance Bio-Shield is the perfect nourishing treatment to hydrate and plump, protect from daily stresses, and promote rejuvenation and radiance. It helps the skin look and feel more beautiful and healthy. This incredible all-in-one, versatile product can be used head to toe, alone as a serum or milk; as a booster to mix with other products before application; as an ideal, easy-to-use efficient ingredient for many types of formulas; or as a time-saving base formula. The milk also allows chemists to formulate with fewer ingredients, if desired. Active Performance Bio-Shield can be used in skin care and color cosmetic formulations. It can be easily added with medium propeller mixing after phase combination for emulsions near room temperature and after neutralization for gels. It can also be incorporated into cold process formulations. In addition, it is safe and gentle enough to use at 100%, minimizing the need for using numerous ingredients in your skin care products. It is compatible with low levels of ethanol (<5%). It may be incompatible with certain cationic ingredients. The ideal pH range for systems containing Active Performance Bio-Shield is between 4.0-8.0.



Active Performance Bio-Shield's micro-droplets are 90-700 nm in size.

## Skin-Renewing & Regenerating Properties

Results obtained via Wnt signaling pathway PCR array, a gene expression study that helps identify a product's mechanism of action (in-vitro). Active Performance Bio-Shield's phospholipids stimulate genes involved in skin cell renewal, skin cell turnover, skin regeneration, and other natural skin processes.

Gene Code	Fold Regulation vs Control**	Comments
FZD8	7.3	Frizzled 8 (FZD8) decreases with age in progenitor cells. Its upregulation may "rejuvenate" these cells, making them more capable of tissue regeneration (Brunt et al., 2012)
FRAT1	3.6	Activator of WNT canonical signaling through inhibition of GSK-3.
JUN	2.4	JUN is a target of WNT canonical pathway. JUN is an early differentiation marker (Blatti & Scott, 1992; Murray et al., 2013) and an effector of TGF- $\beta$ – a key effector in skin homeostasis.
SFRP1	2.2	SFRP1 Induces differentiation, inhibits proliferation of epithelial cells and negatively regulates WNT pathway.
WNT10A	2.1	Induced by TGF- $\beta$ . Activator of WNT/b -catenin signaling. WNT10A, in addition to the formation of teeth and hair follicles, is of importance for the formation of nails, regeneration of the epidermis, papillae of the tongue and sweat gland function. Loss of function results in dry skin, abnormal hair patterns and nail malformations (Nawaz et al., 2009).
FZD2	2.0	Increased in differentiated tissues (Choi et al., 2008). Accordingly, Frizzled 2 (FZD2) increases the intracellular Ca++ level, consistently with the role of this ion in keratinocyte differentiation (Niu et al., 2012).
WNT7B	2.0	WNT7B plays an important role in stem cell homeostasis and in the tissue repair and regeneration (Lin et al., 2010; Kandyba et al., 2013).
KREMEN1	-2.1	This encoded protein is a component of a membrane complex that modulates canonical WNT signaling.

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