



Health & Beauty Solutions, Inc.

# MICROSPONGE® N 720TRE

## All-Natural Delivery System

Microsponge® N 720TRE (MSN 720TRE) is a retinol delivery system based on the novel Microsponge® N natural microparticle. The MSN technology provides sustained released retinol to your anti-aging formulations and provides efficacy with reduced irritation compared to conventional formulations. MSN 720TRE is a yellow, free flowing powder that can be readily dispersed in gels, emulsions and powders, minimizing the discoloration problems associated with many retinol products. MSN 720TRE also is a source of BHA-free retinol and is not subject to Listing under California Proposition 65.

### Typical Properties

Composition:	Cellulose, Retinol, Polysorbate 20, and Tocopherol
Appearance:	Yellow, free flowing powder
Retinol Concentration:	20.0%

### STABILIZE AND PROTECT

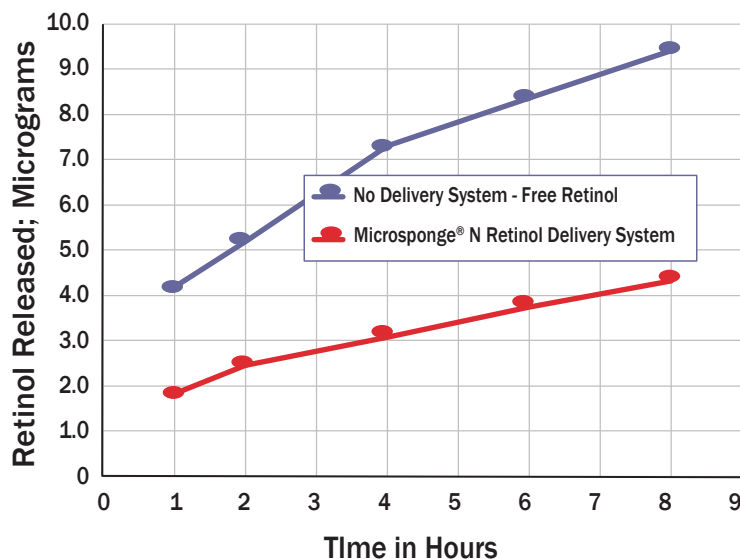
MSN 720TRE isolates retinol deep within the core of the Microsponge® N matrix, helping to minimize exposure to light and oxygen. It also incorporates an antioxidant system to help further protect the product from degradation, and to improve the ability to formulate with the material under normal processing conditions.

### CONTROLLED DELIVERY OF FUNCTIONAL INGREDIENTS

The matrix of the Microsponge® N delivery system provides a ready “reservoir” for retinol. The slow release of retinol occurs through a combination of friction and diffusion.

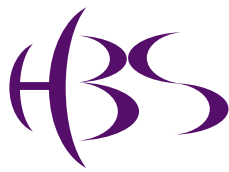
The Franz diffusion cell retinol release profile for an emulsion containing MSN Retinol is shown in Figure 1. The data shows that, compared to un-entrapped retinol, MSN Retinol delivers retinol slowly over time resulting in an effective treatment with lower irritation potential.

Figure 1



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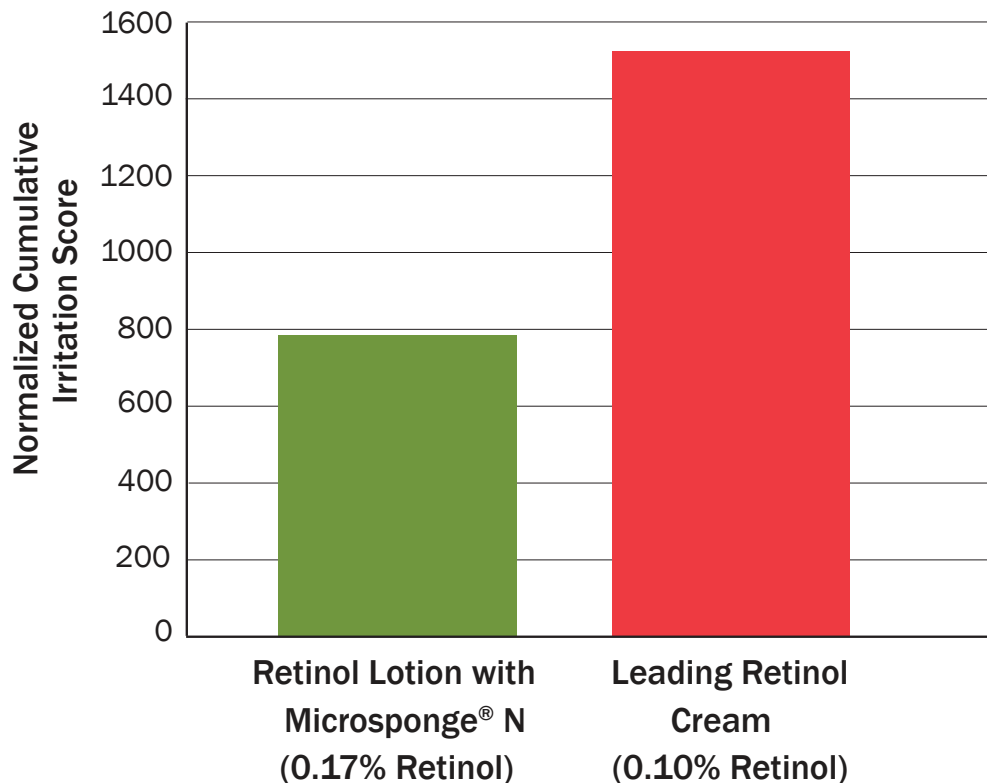
## REDUCTION IN IRRITATION

A major benefit of the Microsponge® N technology is the ability to reduce the irritation of powerful actives in anti-aging formulations while maintaining efficacy. This is proven in the following placebo-controlled, double-blinded clinical study on three products tested on human volunteers (N=27). The following products were evaluated:

- 1) Anti-aging lotion formulated with MSN Retinol at a concentration of 0.17% retinol with all of the retinol entrapped
- 2) The same formulation base was used as described above except that no MSN Retinol was added to the product (placebo)
- 3) A leading National Brand retinol cream which contained 0.1% retinol, with all of the retinol in the free state

Figure 2 shows that the product containing MSN Retinol resulted in a statistically ( $p < 0.05$ ) significant reduction in irritation compared to the national-brand even with a 70% greater retinol concentration in the Microsponge® N product. MSN Retinol delivers lower irritation at higher retinol concentrations leading to better customer compliance and improved product efficacy.

Figure 2





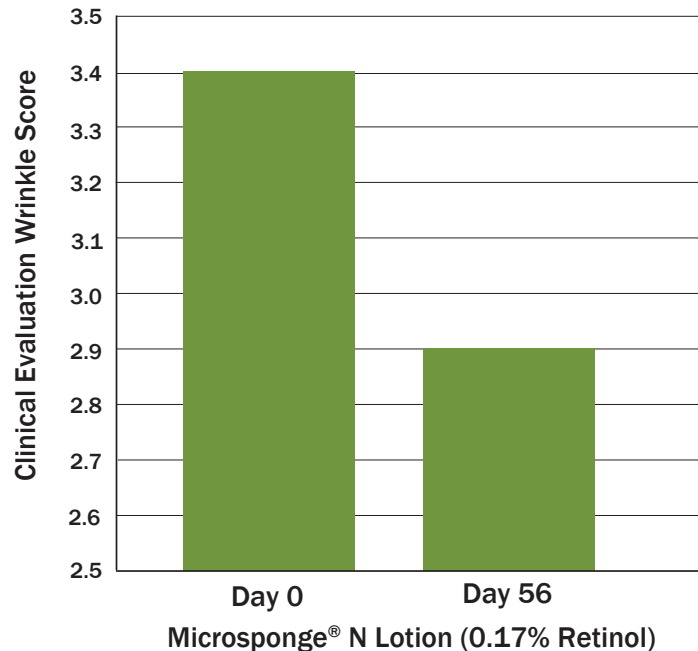
## CLINICAL EFFICACY

Microsponge® N technology provides sustained release of actives resulting in reduced irritation while maintaining the efficacy of the active as demonstrated in the following clinical study.

The study (N=23) evaluated retinol a cream containing the Microsponge® N technology. The study was double blinded and placebo controlled. All of the panelists used an SPF 55 sunscreen during the study.

The results (Figure 3) indicate that the Microsponge® N technology delivers effective, clinically significant wrinkle reduction versus the baseline.

Figure 3



## BENEFITS

- Significantly improves the stability of retinol, resulting in more effective formulations
- Extended release results in reduced irritation and long-lasting availability at the site of action
- Natural microparticle delivery technology
- Source of BHA-free retinol – not subject to listing under California Proposition 65

## TYPICAL APPLICATIONS

- Anti-aging and skin rejuvenation products
- Cellulite treatments
- Make-ups and foundations incorporating skin-care benefits
- Daily use moisturizers and lotions
- Facial and body masks
- Loose and pressed powders
- Hand and body lotions

**STORAGE RECOMMENDATIONS:** Retinol must be kept in original container under refrigerated storage until use. For best results, use the complete package after opening.

