



## Poly-Pore<sup>®</sup> 350 DA Dihydroxyacetone (DHA) Delivery System Technical Data Sheet

**Description:** A multifunctional delivery system useful in a variety of cosmetic and personal care products and formulations. Supplied as a free flowing white powder, PP350DA contains no preservatives or surfactants.

### *Improve Formulation Simplicity and Elegance*

Poly-Pore 350DA contains a 50 wt. % entrapment of dihydroxyacetone, DHA, in Poly-Pore. Dihydroxyacetone is the cornerstone of almost all the self-tanning products on the market today. Although it is a very successfully employed material, there are still a number of challenges associated with formulating this active. This entrapment was designed to provide greater formulation flexibility when designing self-tanning products and to help improve the stability of DHA in contact with reactive compounds that may be present in a variety of formulation types.

### Typical Properties

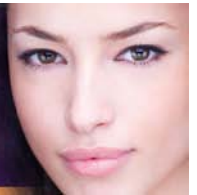
Composition:	Allyl methacrylates crosspolymer, Dihydroxyacetone
Appearance:	White, free flowing powder
Odor:	Slight
Salicylic Acid Level:	50 ± 5.0%
Loss on Drying:	less than 3.0%

### Benefits

- Enables, simple anhydrous gel formulations containing DHA. This process can be extended to loose and pressed powders.
- Provides sebum control reducing shine and extending wear in color cosmetics

### Typical Applications

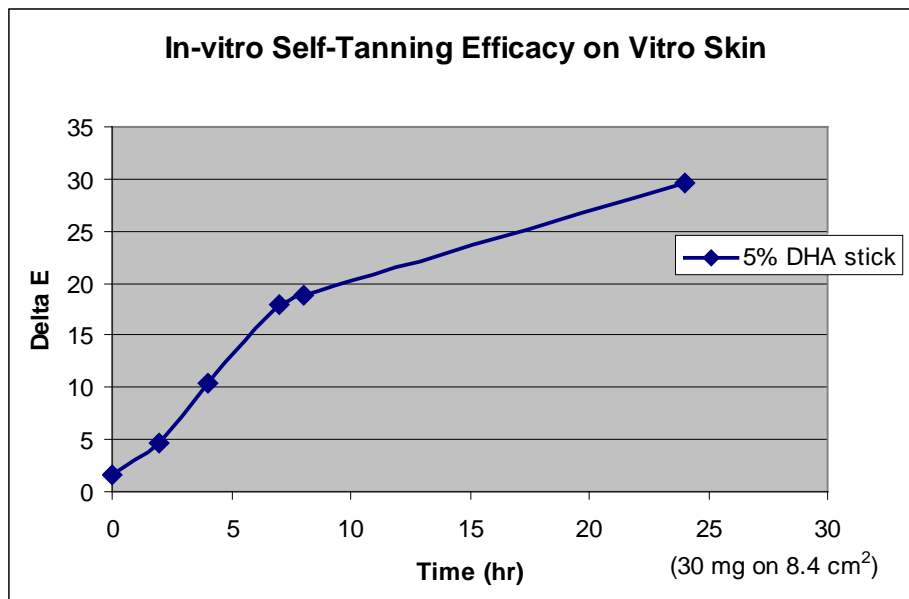
- ❖ Facial treatments and skin care products including gels, emulsions, and anhydrous products
- ❖ Make-ups and Foundations incorporating skin-care benefits
- ❖ Daily use moisturizers and lotions
- ❖ Exfoliating gels and treatments
- ❖ Loose and pressed powders



### Anhydrous Formulations:

One of the benefits of using Poly-Pore 350DA is that DHA can now be added to anhydrous formulations such as stick products. DHA is very water soluble so that without the aide of a delivery system, it would not be possible to add self-tanning functionality directly to an anhydrous base. As an example, Poly-Pore 350DA was added to dimethicone-based stick formulation. Up to 5 % DHA was easily incorporated into this anhydrous product.

One of the concerns is that without a lot of water around, the DHA would not be able to tan the skin. To determine if the DHA was still active, the efficacy of the self-tanning stick was evaluated using Vitro-Skin<sup>®</sup> as the model skin substrate and using the protocol developed by Jermann et al (*Int. J. Cosmetic Sci.* **2002**, 24). A weighed amount of the stick was rubbed into the substrate and then the development of color was monitored as a function of time by a color meter. The results from this study are shown graphically below.



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