Fact Sheet

USP, Pheophorbide and Natural Astaxanthin

Why USP Matters

For the benefit of finished goods product makers and consumer end-users, Solix Algredients ensures that Solasta® natural astaxanthin conforms to the stringent USP astaxanthin standard, including testing for pheophorbide.

Why is that important to sourcing professionals in the ingredients industry?

Confidence and reliability.

What is USP?

"The U.S. Pharmacopeial Convention (USP) is a scientific nonprofit organization that sets reference standards for the identity, strength, quality, and purity of medicines, food ingredients, and dietary supplements manufactured, distributed and consumed worldwide. These standards are used in more than 140 countries."

USP ingredient standards are detailed in documents called monographs. "An ingredient monograph contains the name of the ingredient and the specification. The specification consists of a series of tests, procedures for the tests, and acceptance criteria."

Monographs are "published in the Food Chemicals Codex (FCC), which is a compendium of internationally recognized standards for determining the purity and quality of food ingredients."

"Ingredients [such as Solasta® natural astaxanthin] will have the stipulated strength, quality, and purity if they conform to the requirements of the monograph."

> Source: The U.S. Pharmacopeial Convention
>
> For More Information, refer to the monograph titled: Astaxanthin Esters from *Haematococcus pluvialis.*

A Note About Pheophorbide

Pheophorbide (pronunciation: fē-ə-ˈfȯr-ˌbīd) is an organic compound that originates from chlorophyll found in the chloroplasts of plants and in other photosynthetic organisms. It is a natural breakdown product of chlorophyll.

In 1977, an outbreak of photosensitivity dermatitis occurred in consumers of a particular brand of chlorella tablets. The causal agent was eventually determined to be the pheophorbide present in tablets.

As a breakdown product of chlorophyll, the level of pheophorbide is affected by a number of things, including the quality of the biomass, and/or processing conditions used during astaxanthin extraction. The USP sets a limit for pheophorbide in astaxanthin at NMT 0.02% (NMT = Not More Than).

Solasta® natural astaxanthin meets the applicable United States Pharmacopeia (USP) specifications for astaxanthin, including pheophorbide.

USP Requirements for Astaxanthin (Summary*)

Item	Acceptance Criteria
Identification - EPA Content	NMT 1.0%
Assay – Astaxanthin Total	5.0 – 15.0%
Inorganic Impurities Arsenic Cadmium Lead Mercury	 NMT 2.0 mg/kg NMT 1.0 mg/kg NMT 1.0 mg/kg NMT 1.0 mg/kg
Organic Impurities Pheophorbide Content	 NMT 0.02%
Specific Tests Water	NMT 1.0%
Other Requirements Labeling	Label to indicate the name of any added antioxidant

* For complete information, refer to the monograph titled: Astaxanthin Esters from *Haematococcus pluvialis.*

