



FLORAFIL LUTEIN ESTERS

SPECIFICATIONS SHEET

CODE: HE-ID-16

Rev: 00

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Description:

Florafil Lutein Esters is a deep orange colored free flowing powder consisting mainly of lutein esters. These esters are obtained from marigold flowers (*Tagetes erecta*) using its hexane extract as starting material and Vepinsa's proprietary technology for purification. No chemicals or additives are used for processing except ethyl alcohol as a dehydrating agent.

Chemical Assay:

Florafil Lutein Esters may contain a minimum of 60, 70 or 80 % xanthophyll esters. Total carotenoids are calculated by AOAC method after hydrolysis and spectrophotometric analysis where the result is multiplied by the factor 1.83 to obtain the total percentage of xanthophyll esters in the products.

Antioxidants:

Natural Vitamin E is added at 3000 ppm level. Other antioxidants may be added if specified by the customer.

Residual solvents:

- Less than 100 ppm ethanol
- Less than 1% water
- Less than 10 ppm hexane

Partition by HPLC:

<u>Carotenoid</u>	<u>Relative %</u>
Translutein	95 to 98
Transzeaxanthin	3 to 5
β-Cryptoxanthin	0.0 to 1.0
Other carotenoids	0.1 to 1.0

Physical Characteristics:

- Appearance: Deep orange free flowing powder
- Density: 0.3 to 0.4 gr/cc
- Particle size: Passes through 20 mesh (U.S. Standard)

Microbiology:

Standard plate count	Less than 1000 CFU/gr
Yeasts and molds	Less than 100 CFU/gr
<i>E. coli</i>	Negative in 10 gr
Salmonella	Negative in 25 gr

Purity:

Heavy metals	Less than 5 ppm
Arsenic	Less than 3 ppm
Lead	Less than 1 ppm
Mercury	Less than 1 ppm
Cadmium	Less than 1 ppm
Insolubles in hexane	Less than 0.5%

Uses:

Recommended for further processing in the food, nutraceutical or cosmeceutical industries. Very appropriate for oily foods, cheese, butter, margarines and other dairy products.

Packaging:

May be packed in plastic bags with moisture and oxygen barriers sealed under inert gas or vacuum inside a high density polyethylene container with 18 kg net weight or inside a wide mouth metal drum with 90 kg net weight. Other packaging presentations may be considered following customer's demand