

## Colorant

### Chemical names

Beta-carotene, provitamin A

**CAS No.** 7235-40-7

**EINECS No.** 230-636-6

### Colorant code numbers

EC: E 160 a  
Color Index: 40 800 food orange 5  
DFG: L-orange 3

### Dispersions

#### Class name

Colorant; vegetable oil

### Specification

Assay:	minimum declared quantity of beta-carotene determined from the absorbance of a solution in cyclohexane at 455 nm
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#### Absorbance ratios

455 nm/483 nm:	1.14-1.18
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455 nm/340 nm:	> 1.5
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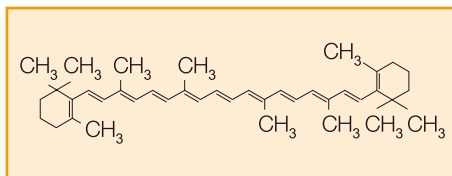
Cadmium:	≤ 1 mg/kg
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Mercury:	≤ 1 mg/kg
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Arsenic:	≤ 3 mg/kg
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Lead:	≤ 5 mg/kg
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Heavy metals (as Pb):	≤ 10 mg/kg
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**C<sub>40</sub>H<sub>56</sub>**

**Molar mass 536.9 g/mol**

### Description

Brick-red, oily dispersions with a neutral flavor containing beta-carotene in microcrystalline form in vegetable oils.

### Stabilization/Stability

The Lucarotin® dispersions do not contain a stabilizer. Stored in the unopened original packaging at room temperature (max. 25°C), the products are stable for at least 36 months. As beta-carotene may sink to the bottom of the container, the dispersions should always be stirred prior to use.

### Standard packaging

1.5 and 25 kg.

Please see appendix I for further information.

### Storage

The products are sensitive to atmospheric oxygen, light, heat and moisture. Lucarotin® dispersions should therefore be stored under nitrogen in the tightly sealed, lightproof packaging in a cool place. Once opened, it is recommended to use the remaining contents as quickly as possible.

### Heat

Beta-carotene starts to isomerize at 60°C, which may result in a slight loss of color.

## Food regulations

Beta-carotene is approved for use as a food colorant in most countries. However, the regulations in the respective countries should be observed.

## Product range

Product name	Product number	Oil component	Assay
Lucarotin® 30 M	10071276	corn oil	min. 30%
Lucarotin® 30 SUN	10245879	sunflower oil	min. 30%

The dispersions can be supplied on order basis in other concentrations. All products are kosher, and exhibit good flow properties at 0°C

## Applications

### Dietary supplements:

The Lucarotin® dispersions are used in soft capsules as provitamin A, as an active ingredient and as a colorant.

### Food products:

Used as both yellow-orange colorant and provitamin A. Even at low concentrations, beta-carotene dispersions have a high tinctorial strength. They are suitable for coloring as well as for standardizing the color of oils, fats, margarine, butter, processed cheese, cheese spreads, milk replacement products, ice cream, soups, sauces, fillings of baked goods and egg products. They are added to the oily phase.

### **Important: Beta-carotene dispersions should be stirred briefly prior to use.**

The Lucarotin® dispersions are usually processed as stock solution in a suitable quantity of oil, prepared by careful heating to 40°C. This stock solution is then added to the food product.

The table below provides approximate quantities of 100% beta-carotene, which are added to 1 kg of various food products. The quantity is dependent on the desired shade and should be determined in small scale tests.

Butter <sup>1</sup>	14 - 16 mg/kg
Cream fillings <sup>1</sup>	1 - 10 mg/kg
Egg products <sup>1</sup>	2 - 5 mg/kg
Fats, oils	7 - 10 mg/kg
Replacement products based on vegetables oils <sup>1</sup>	2 - 5 mg/kg
Cheese preparations <sup>1</sup>	1 - 2 mg/kg
Margarine	6 - 12 mg/kg
Salad dressings <sup>1</sup>	3 - 9 mg/kg
Processed cheese <sup>1</sup>	10 - 25 mg/kg
Sauces <sup>1</sup>	4 - 20 mg/kg
Ice cream <sup>1</sup>	2 - 6 mg/kg
Soups <sup>1</sup>	0,2 - 1 mg/kg

<sup>1</sup> The Lucarotin® dry powders can also be used to color these food products.

- butter:  
the stock solution is heated to 45°C and added to the cream
- pasta products containing egg:  
a stock solution containing about 0.5% beta-carotene in oil is evenly mixed with a defined quantity of flour; the colored premix is added to the flour prior to production
- imitation cheese:  
the beta-carotene stock solution in vegetable oil is heated to 50-60°C and added during production
- margarine:  
the beta-carotene dispersion is completely dissolved in the oily phase prior to emulsification

- salad dressings:  
the vegetable oil is heated to 45-50°C before adding the beta-carotene dispersion
- processed cheese:  
a beta-carotene stock solution is prepared in melted butter and added to the cheese mixture prior to the melting process
- ice cream:  
the required quantity of beta-carotene is stirred into fat or oil until it is completely dissolved; the temperature of the oil should be at least 20°C, preferably 37-50°C
- soups:  
the oil for the soup is heated and the beta-carotene dispersion dissolved in it

### Note

The Lucarotin® Dispersions must be handled in accordance with the Safety Data Sheet.

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.  
June 2006