kalsec®

Products, Service and Science you can trust…naturally.™

Durabrite® Colors

Superior Color and Flavor Stability for your Food and Beverage Applications

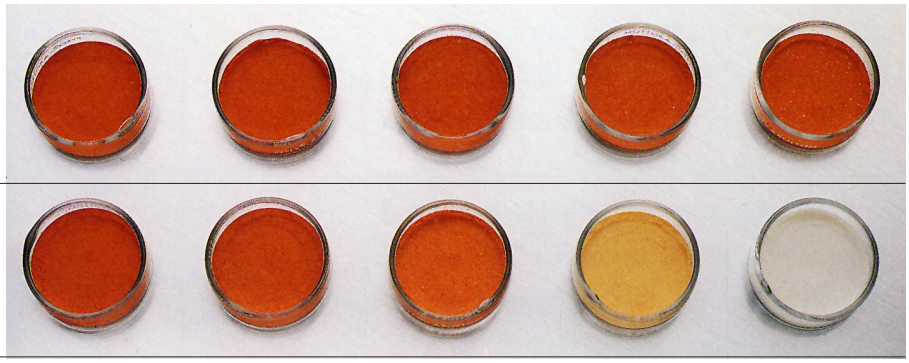
Carotenoid pigment oxidation is usually associated with a loss of color that is easily seen in a food product or ingredient. Usually less apparent, but no less damaging to product quality, is the production of rancid and "off" flavors and aromas that accompany carotenoid pigment oxidation. Our research shows that "off" flavor and aroma can actually precede significant color fade. As little as eight percent loss in color strength has been associated with undesirable flavor changes. Factors contributing to oxidation and degradation of carotenoid pigments include light, oxygen, heat, and trace metals.

Including functional ingredients such as Durabrite® Colors can effectively inhibit oxidation and degradation of carotenoid pigments while helping you maintain the color and flavor quality you intended.

Kalsec® produces Durabrite® Colors by carefully extracting selected raw materials and incorporating our patented stabilization system. The results are exceptional color and flavor stability. To select the Durabrite® Color that is the most appropriate for your food or ingredient formulation, please refer to the Durabrite® Color Product Guide, or contact a Kalsec® technical service representative.

Comparison

Durabrite® Paprika (80,000) and a commercially available Paprika (80,000) were dispersed at one percent on flour salt. The samples were placed in a light box at 210 foot-candles.



	Day 0	Day 7	Day 14	Day 21	Day 28
Durabrite®Paprika 1% on Salt Code: 02-080-20					
Control Paprika 1% on Salt Code: 02-080-02					
Durabrite® Paprika % Color Retained	100%	100%	95%	87%	81%
Control Paprika % Color Retained	100%	92%	77%	38%	10%

RESULTS

Durabrite® Paprika outperformed the standard oleoresin paprika in all evaluations. After 28 days exposed to light, the Durabrite® maintained 81% of its color value, while the standard oleoresin retained only 10%. Over that same time period, the standard paprika developed off odors. The hexanal area counts of 218,000 indicate that oxidation has occurred.

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Durabrite® Colors

Products

- Durabrite® Oleoresin Paprika
- Durabrite® Aquaresin Paprika
- Durabrite® Annatto
- Durabrite® Oleoresin Carrot
- Durabrite® Aquaresin Carrot

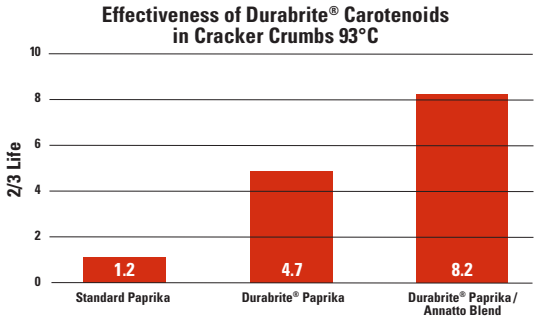
Applications

Carotenoids are nature's way of creating yellow, orange and red-orange colors in fruits and vegetables. Durabrite®'s are Kalsec®'s way of providing stable formulations of these pigments for commercial use as food colorants. Any prepared food or beverage using carotenoid food colors, can benefit from the use of Durabrite® formulations:

- Bakery Mixes
- Batters and Breadings
- Mustard
- Prepared meals
- Processed Cheese
- Processed Meat
- Sauces
- Snack Seasonings
- Soup
- Spray Dried Cheese

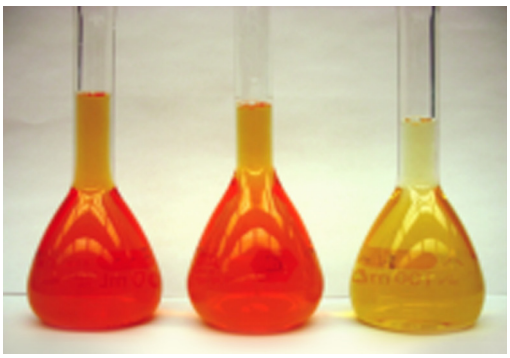
Bread Crumbs

In a study on bread crumbs at 93°C a 4-fold improvement in the stability of cracker crumbs is achieved with the use of the Durabrite® paprika.



Beverages

Coloring beverages packaged in clear bottles is a particularly challenging application. The recent development of Durabrite® soluble paprika allows for the use of natural colors to replace blends of Sunset Yellow (E110) and Ponceau 4R (E124). Stabilized Durabrite® and un-stabilized paprika formulations were used to color simulated beverages. The beverage solutions were placed in a light box and exposed to accelerated fluorescent light at 3.5 Klux. The Durabrite® paprika clearly shows superior stability under fluorescent light. In a typical grocery store setting at 1.6 Klux this beverage would be expected to maintain its color for 4-5 months.



Standard Paprika Time = 0 Hours | Durabrite® Paprika (3.5 Klux) | Standard Paprika (3.5 Klux)

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