

SETHNESS PRODUCTS COMPANY

SHELF LIFE

The shelf life of Caramel Colors are determined by three factors in their ability to function as a color additive.

A. Chemical Changes

- a. Liquid Caramel Colors are manufactured by heating carbohydrates with or without process reactants under controlled conditions. The reactions that occur do not completely stop when the product is cooled, standardized and put in containers. Although nearly stopped, the reactions continue at a very slow rate. Liquid Caramel Colors will continue to increase (grow) in color, the pH may drop slowly and the viscosity will increase (with a few exceptions) over time. These changes are very temperature dependent and the higher the storage temperatures, the faster the changes will occur.
- b. Powdered Caramel Colors are made by drying Liquid Caramel Colors. The chemical reactions that generate Caramel Color are essentially stopped by the drying process of the Powdered Caramel Color.

B. Microbiological Changes

- a. Liquid Caramel Colors are very inhospitable to microorganisms due to their low pH and high solids content.
- b. Powdered Caramel Colors have even higher solids content and lower water activity than Liquid Caramel Colors and when product integrity is maintained, with proper storage and handling, it results in a microbiologically stable product.

C. Physical Changes

- a. Liquid Caramel Colors will increase in viscosity over time. The viscosity and rate at which a product thickens is product specific and related to storage conditions.
- b. Powdered Caramel Colors are very hygroscopic. Powdered Caramel Color also has a tendency to soften at higher temperatures causing the particles to stick together. This softening is affected dramatically by the moisture in the product, the temperature to which it is exposed, and the pressure (or compaction) associated with the size and type of packaging used. SPC limits the size of the powdered packaging in order to limit compression factors. In the most extreme circumstances (high moisture, temperature and pressure) this softening will lead to hard lump formation. The product may be chemically and microbiologically acceptable, but due to handling problems with lumps it is then no longer acceptable for use.

Shelf Life of Caramel Colors are largely dependent on storage conditions and handling. As long as the products are stored in their unopened containers at ambient temperatures with low humidity, they should have no problem reaching and even exceeding the stated shelf life. For Powdered Caramel Colors, ideally the bag would be opened once and used in its entirety. If smaller portions are required, we suggest repacking into sealable bags for the appropriate weight required and stored in the original box.

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