

# SETHNESS PRODUCTS COMPANY

## SULFITE IN SETHNESS CARAMEL COLORS

Sethness Caramel Colors are 100% Caramel Color. Sethness Caramel Colors do not contain any post manufacturing "sulfiting agents" typically added to food products as oxygen scavengers. These sulfiting agents are used to enhance the stability of the final product. Sulfiting agents used for stabilization are readily determined by both digestive and non-digestive methods.

Sethness Caramel Colors do not contain any stabilizing sulfites. Sulfite found in Sethness Caramel Colors comes from one of two sources:

1. When Caramel Color is tested to contain above 50 ppm of sulfite or greater, then sulfite is used as a necessary & allowed process reactant (as defined by 21 CFR 73.85) to assist in the formation of the colored bodies generated in the process of manufacturing Caramel Colors. These are Class II (E150b) and Class IV (E150d) Caramel Colors. This sulfite is incorporated into the Caramel Color as a part of the polymer chains. When a Sethness Caramel Color is analyzed for free sulfite using a non-digestive method, the result is nil.
2. When Caramel Color is tested to contain less than 50 ppm of sulfite, then sulfite is from residual levels in the carbohydrate source. These are Class I (E150a) and Class III (E150c) Caramel Colors.

Of the four types of Caramel Colors (as defined by JECFA), two are manufactured using sulfite (sulfur dioxide, SO<sub>2</sub>) as a reactant. The Class II (E150b) Caramels, such as RT80, are Sulfite Process Caramel Colors. The Class IV (E150d) Caramels, such as DS400, are Sulfite Ammonia Process Caramel Colors. Class I (E150a) and III (E150c) Caramel Colors do not use sulfite as a reactant and only have trace levels of sulfite from the carbohydrate used in manufacturing.

As required by FDA, the sulfite content in Sethness Carmel Color is determined by the official FDA Modified/AOAC method (a digestive method) where the test material sample is boiled in hydrochloric acid for 105 minutes. The acid and heat used in this method break down (digest) the polymers releasing the sulfite. The sulfite content is listed on the bottom of Sethness Caramel Color nutritional sheets.

The FDA requires the labeling of sulfite on finished products ready for consumer use. The labeling requirement is only for finished products that contain 10 ppm of sulfite or more (as defined by 21 CFR 101.100 (a)(4)). Caramel Color is not a finished product. It is an intermediary ingredient. The usage level of Caramel Color must be taken in account to determine the possible final amount of sulfite in a finished product. The following example gives an indication of how to predict possible sulfite contribution from a Caramel Color in a final product.

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Example:

Producer A uses a Caramel Color that listed 450 – 650 ppm sulfite on the nutritional sheet. They use 0.25% of Caramel Color in their proposed formulary. Use the higher range of the sulfite content from the nutritional sheet to calculate the highest possible value of sulfite contributed from the Caramel Color to the final product.

$$0.0025 \times 650 = 1.63 \text{ ppm sulfite}$$

So Producer A for their product would have 1.63 ppm sulfite from the Caramel Color used. If this was the only source of sulfite, then Producer A would not have to list sulfite on the label as per FDA rules.