

Technical Tips

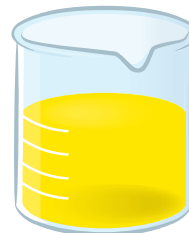
Natural Beta-carotene



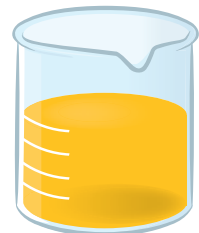
D.D. Williamson offers a naturally derived alternative to synthetic beta-carotene in the U.S. to color beverages, yogurt, ice cream, pudding, confectionery, bakery products, and condiments.

Concentration affects the hue of beta-carotene

In recent years, beverage companies have launched hundreds of new drinks containing synthetic (nature identical) beta-carotene as a coloring. The nature-identical form is chemically synthesized to mimic the natural equivalent. Beverage processors can add DDW's natural alternative either before (in the aqueous phase) or after homogenization. DDW's natural beta-carotene is water dispersible and Kosher certified. At low concentrations, the hue is similar to Yellow 5 and turmeric (curcumin). It exhibits better light stability than turmeric.



0.025% w/v
Power (1%) 43000



0.1% w/v
Power (1%) 43000



DDW beta-carotene offers substantial advantages over the synthetic alternative

<p>Disperses readily in water</p>	<ul style="list-style-type: none"> • Stable emulsion • Less cloudy in solution • Less ringing • Less sedimentation • Reduced cap/bottle staining • Potential for fewer processing steps
<p>Qualifies for a naturally-derived ingredient label (assuming other ingredients also qualify)</p>	<ul style="list-style-type: none"> • May declare "colored with [beta]-Carotene (from natural sources)" or similar text on the ingredient statement • Marketing advantage on principle display panel (PDP) for novel beverages, organic and natural foods



For samples or technical questions, please e-mail us at info@ddwmonson.com

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DDW natural beta-carotene products, properties and applications

Description	pH stability	Hue	Usage %	Applications
1% powder 1% liquid 2% liquid	3 to 7	Yellow to orange	0.01 to 0.1 or 0.005 to 0.05	Beverages, yogurt, ice cream, pudding, confectionery, bakery products, and condiments

Energy beverage* colored with natural beta-carotene

Ingredients	% (w/v)
Water, purified (v/v)	83.93
Cane sugar	15.00
Citric acid	0.50
Sodium citrate	0.20
Natural flavors	0.15
Guarana (for flavor)	0.03
Vitamin blend	0.10
DDW natural beta-carotene (1%, powder)	0.03
Sodium benzoate	0.03
Potassium sorbate	0.03

Preparation

1. Add the cane sugar to water and stir to dissolve.
2. Continue stirring and add citric acid, sodium citrate, flavors, guarana, vitamin blend and beta-carotene coloring.
3. Once the dry ingredients are dissolved, add the sodium benzoate and potassium sorbate, mixing until dissolved.

**This formulation is for example purposes only.*



Frozen novelties



Lemon candy



Tropical drink



Flan or pudding



For samples or technical questions, please e-mail us at info@ddwmson.com