

## Frozen Dessert Applications

Whether you are an entrepreneur preparing to enter the ice cream or frozen dessert business, a frozen dessert chain with hundreds of stores, or make packaged frozen desserts for sale in retail outlets, Green Mountain Flavors can provide you the products and technical support to help you reach and exceed your goals. Our “clean label” flavors, extracts, colors and stabilizer blends find extensive use in a wide variety of frozen dessert applications, including:

<b>Custard</b>	<b>Hard Ice Cream</b>	<b>Sherbet</b>
<b>Frozen Yogurt</b>	<b>Italian Ice</b>	<b>Soft Serve</b>
<b>Gelato</b>	<b>Non-Dairy</b>	<b>Sorbet</b>

Our experience and technical expertise in working with our products in frozen dessert applications can help you fast-track your projects, whether you are developing new frozen dessert recipes, or modifying existing ones to improve flavor profiles or remove artificial ingredients. We can provide you starting-point usage level recommendations, as well as hundreds of frozen dessert starting-point recipes, including:

- *Hard Ice Cream* – 135+ starting-point recipes. These recipes were developed using unflavored 14% fat hard ice cream mix. We can recommend flavor usage-level adjustments to optimize flavor delivery if your mix has a different fat level or already contains vanilla flavoring. These recipes are easily adapted for use in gelato.
- *Soft Serve* – 65+ starting-point recipes. These recipes were developed using vanilla-flavored 5% fat soft serve mix. We can recommend flavor usage-level adjustments to optimize flavor delivery if your mix has a different fat level.
- *Italian Ice* – 75+ starting-point recipes. For many fruit flavors, we offer three different recipe options: no fruit included; fruit puree added prior to freezing; and, fruit pieces added post-draw.
- *Sorbet* – 35+ starting-point recipes.
- *Sherbet* – 10 starting-point recipes.

- Non-dairy
  - Mami’s Gelato Froconut® vegan dry mix - 30+ starting-point recipes, including 21 recipes using their “Original” mix, and 10 using their “Chocolate” mix.
  - Mami’s Gelato Oatrageous® vegan dry mix - 15+ starting-point recipes.
  - Meadowvale Dairy Coconut Cream non-dairy liquid mix - 20+ starting-point recipes.
  - Honey Hill Farms Sugar Creek Cultured Coconut soft serve liquid mix - 10+ starting-point recipes.
- *Store-Made Fruit Variegates* – 8 starting-point recipes. These simple recipes typically contain five natural ingredients, and can be made quickly in-store without the need to cook or boil down the fruit.
- *Store-Made Icing Variegates* – 4 starting-point recipes. These simple recipes contain six natural ingredients and can be made quickly in-store without heating; they can be used as a variegate in recipes such as Birthday Cake Ice Cream.
- *Flavored Whipped Cream* – 10+ starting-point recipes.

### **Replacing “Flavor Bases”**

For many years, much of the frozen dessert industry has relied on “flavor bases” to help flavor, color, and in some cases, provide fruit and other inclusions to hard ice creams, gelatos, Italian ices, sherbets and sorbets. While these “flavor bases” provide convenience, they are rarely “clean label”, as they often include artificial or natural/artificial flavors, artificial FD&C colors, artificial preservatives (such as sodium benzoate and potassium sorbate), polysorbate 80, high fructose corn syrup, etc.

The attached article, [Demystifying Flavor Bases](#), discusses the advantages and disadvantages of “flavor bases”, as well approaches to replacing them. We have helped many customers migrate away from “flavor bases” to “clean label”, and often, less expensive alternatives.

### **Increasing Sugar Levels in Fruit Inclusions**

Fruit pieces added “as-is” to hard-pack frozen desserts typically end up being hard and icy because of the high water content in the fruit. The most common method to avoid hard/icy fruit is to infuse it with sugar, thereby replacing some of the water in the fruit with sugar solids.

One way to achieve this result is to purchase fruit that has been processed and is “packed” in sugar. Many frozen dessert shops opt instead to work with either fresh fruit or IQF (individually quick frozen) fruit, and add the sugar themselves. When adding sugar to fruit, to guarantee consistent results, a preferred method is to “standardize” the sugar level in the fruit, that is, to ensure that the sugar content in the fruit/sugar blend is always at a consistent/constant level.

It is quick and simple to “standardize” sugar levels in fruit using two tools, a refractometer to measure the sugar content in the fruit, and a Pearson Square calculation to determine the optimum amount of sugar to be added to the fruit. Below is an example of a simple refractometer that can be used for this purpose.



This type of Brix refractometer with automatic temperature control can be purchased on-line for about \$20.00. For “standardizing” fruit, we recommend you choose a refractometer with a range of 0-32. To operate the refractometer, you merely need to put a few drops of juice from the fruit onto the blue glass, then lower the glass plate onto it, and then look through the eye piece toward a light source. You will see two colors appear, and where they meet indicates the Brix, or sugar content in the fruit.

Once you have determined the sugar content in your fruit, you need only to enter three pieces of data into a Pearson Square calculator, the fruit Brix/sugar level, the desired finished fruit Brix/sugar level, and the weight of your fruit. The calculator then tells you how much sugar should be mixed with the fruit.

After you have blended the sugar with your cut fruit pieces, we recommend that you cover the mixture and let it sit overnight in a refrigerator/cooler. The next day you can drain off the liquid that has come out of the mixture, and the fruit is ready to either use then, or to freeze for future use. You can discard the liquid, or save it for later use in sorbets or Italian ices.

## **Sanitizing Raw Fruits and Vegetables**

If you use fresh/raw fruits and vegetables in your frozen desserts, we strongly recommend that you sanitize them prior to their use. The attached article, *Guidelines for the Use of Chlorine Bleach as a Sanitizer in Food Processing Operations*, published by Oklahoma State University, details a simple method to sanitize fresh/raw fruits and vegetables using chlorine bleach solutions.

## **Stabilizers in Frozen Desserts**

Commercially-available frozen dessert mixes, whether in liquid or dry/powdered form, or whether dairy-based or non-dairy, virtually always contain stabilizers. We are often asked whether stabilizers are required or beneficial in sorbets and Italian ices. We believe that stabilizers impart multiple benefits to sorbets and Italian ices, including:

- A smoother, creamier texture.
- Increased overrun.
- Improved scoopability and scoop cohesiveness.
- Decreased or eliminated “pooling” in the tub.
- Slower melting.

Our IceBracer® 100 stabilizer blend has proven to be an effective stabilizer from both a performance and cost standpoint in sorbets and Italian ices.