
Hard Candy Formulations, Variations and Effects

Let's begin by defining hard candy. Hard candy is a liquid mixture of sugar and corn syrup which is kept in an amorphous or glassy condition by cooking to such a high temperature that most of the moisture is removed. In appearance it is a solid, supercooled, noncrystalline liquid which is so far below the melting or softening points that it has assumed solid properties without crystallizing.

These liquids with extremely high viscosities inhibit the process of

crystal formation considerably. This amorphous structure is referred to as the glass state. It is usually clear but can be made opaque by pulling and incorporating air or by using lake dispersions or titanium dioxide.

INGREDIENTS/FUNCTIONS

We will take a look at a variety of ingredients and why they are used in hard candies. They are used to perform one or more functions such as sweetness, bulking agent, solvent, lubricant, and flavor enhancer, just to name a few. They also give texture, creaminess, mouth feel, richness and other sensations. And they insure the necessary shelf life so that the consumer enjoys a fresh, pleasant tasting confection.

However, people consume food mainly for enjoyment. One of the most important characteristics is the textural properties. Other characteristics consumers look for are flavor, aroma and appealing appearance. We create these different properties depending upon the ingredients used and, to some extent, the processing technique

used in manufacturing the confection.

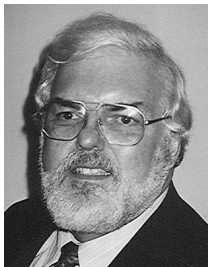
Water is an ingredient that is taken for granted and is often overlooked. It is so common, yet so misunderstood. The role water plays is very important and deserves as much attention, if not more, than any other single ingredient particularly if you have multiple manufacturing facilities.

No longer can water be overlooked and considered a cheap ingredient. It has become more expensive to purchase. It also has become more expensive to dispose of whether you pay a water reclamation district or more importantly, whether industry has to install, run and maintain its own treatment facilities. Each year regulations become more stringent as to the requirements which must be met for reclaimed water, and costs keep rising.

The quality of the water can have a significant effect on how it interacts with other ingredients. Water is assumed to be the same everywhere. Yet it contains small amounts of dissolved minerals, gasses, chemicals and salts which can cause discoloration and foaming, and affect the taste of products. Depending on the source of the water and what type of treatment it receives before it is used, the amounts of these constituents will vary and could have an impact on the product.

The hardness or softness of water is a measure of the mineral content of water. Hard water contains a high level of insoluble salts such as calcium and magnesium while soft water has sodium and potassium salts.

One of the major roles of water is as an inexpensive bulking agent. The best example of this is a soft



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