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(54) **PREPARATION CONGELABLE ET METHODE DE
FABRICATION CONNEXE**

(54) **FREEZABLE CONFECTION AND METHOD FOR MAKING
SAME**

(57) Préparations à congeler soi-même, ayant une consistance liquide à la température ambiante et une consistance de neige ou de glace lorsqu'elles sont congelées. Les préparations présentent une opacité stable mais un pH acide. Elles peuvent être fabriquées avec divers arômes, y compris des arômes de fruits et autres. La présente invention a également trait à la méthode de fabrication de ces préparations congelées.

(57) Freeze-it-yourself pops having a liquid consistency at room temperature and a slushy or icy consistency when frozen are disclosed. These pops have a stable opacity but an acidic pH. A variety of flavors can be produced, including both fruit flavors and non-fruit flavors. Methods for making these frozen confections are also disclosed.

ABSTRACT

Freeze-it-yourself pops having a liquid consistency at room temperature and a slushy or icy consistency when frozen are disclosed. These pops have a stable opacity but an acidic pH. A variety of flavors can be produced, including both fruit flavors and non-fruit flavors. Methods for making these frozen confections are also disclosed.

**FREEZABLE CONFECTION AND METHOD
FOR MAKING THE SAME**

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to freezable
5 confections and methods of making the same. More specifically,
the present invention relates to freezable confections that are
liquid at room temperature and slushy or icy when frozen, and
that maintain a stable opacity even when subjected to rigorous
manufacturing conditions.

Background Information

Liquid confections having different colors and
flavors and that are substantially transparent have been sold
for subsequent freezing to a slushy or icy consistency. These
15 liquid, freezable confections are generally packaged in plastic
packs, such as those made of polyethylene, cellophane or other
similar films and other resinous plastics. Such confections
generally comprise suitable flavoring and coloring agents,
sugars or other sweeteners, acids, stabilizers and
20 preservatives. Occasionally, transparent fruit juices, such as
apple juice are added as well; opaque juices are generally not
suitable for such use as pulpy particles settle or precipitate
out of the solution and form a sludge in the bottom of the
storage container. The acidity of these confections was
25 usually within a pH range of between about 2.7 and 3.5, which
was in line with the characteristic flavor being simulated,
namely, that of higher-acid fruits such as lemon, cherry, grape
and orange. The confection is conventionally sealed in the
plastic film and is ordinarily sold in liquid form at room
30 temperature. The confection can then be frozen by the consumer
prior to eating in the form of an ice pop without a stick.

U.S. Patent No. 3,345,185 is directed to a low-fat
frozen dessert containing milk solids, corn syrup solids,
sucrose, water and a stabilizer. This product has a much
35 higher milk content than the confection of the present

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invention, and has the body characteristics of ice cream or ice milk.

U.S. Patent No. 3,922,371 relates to frozen ice products containing full-strength fruit juice, sucrose, corn
5 syrup solids, citric acid, stabilizer and coloring.

U.S. Patent No. 4,046,925 relates to production of a milk and juice containing product having a smooth and creamy consistency. The product uses a stabilizer system of xanthan gum, locust bean gum and carboxymethyl cellulose.

10 U.S. Patent No. 4,140,807 is directed to a pudding-like frozen confection using a stabilizer system of carrageenan, carboxymethylcellulose and low methoxyl pectin.

U.S. Patent No. 4,163,807 is directed to a citrus fruit juice product containing a stabilizer system of xanthan
15 gum and sodium carboxymethyl cellulose.

U.S. Patent No. 4,264,637 is directed to room temperature storable confections having a pudding-like consistency at room temperature that freeze to a chewy and virtually non-icy product.

20 U.S. Patent Nos. 4,816,283 and 4,935,258 are both directed to a fruit juice mix that can be formed into a whipped and/or frozen confection and that utilizes xanthan gum as a stabilizer.

U.S. Patent No. 5,547,697 relates to a non-fat
25 whipped frozen dessert that uses a stabilizer comprised of fatty acid mono- and diglycerides.

In addition, numerous frozen confection products use Avicel®, which is a microcrystalline cellulose gum available from the FMC Corporation, as well as other gums and starch, to
30 keep the preparation homogenous and to prevent syneresis or separation of the products. Some of these gums, or combinations thereof, are costly for use with a frozen confection product, however. Also, a product having a

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pudding-like consistency is often the result; such products are not generally preferred by consumers.

The use of pectins to stabilize milk and/or spray dried milk in acidic mediums is also discussed in the art; the procedure is usually quite cumbersome, requiring heating, cooling and homogenization, and still results in sediment after only a brief storage period.

None of the above patents, however, provides a freezable confection having a stable opacity and an acidic pH that can be sold in liquid form and frozen by the consumer such as the confection disclosed herein that further permits incorporation of particles such as cocoa, pigments and fruit purees and pulp that remain suspended in the liquid phase. Previous attempts at providing such a product have proven unsuccessful, as settling or creaming of the product occurred or the product was "gummy" or pudding-like and not preferred by consumers. For example, the use of a cloudifier or "clouding agent" typically does not work, as it tends to settle or "cream" during storage. Although this problem can be addressed through the use of clouding agents "weighted" with brominated vegetable oil, ester gum or other suitable weighting agents, federal regulations restrict the use of some of these weighting agents to a point where no meaningful opacity can be achieved. Also, the use of weighted clouding agents can contribute a bitter and unpleasant taste to the confection. Citrus oil based clouding agents undergo oxidation during storage, resulting in an unpleasant odor and taste. The use of vegetable oils to achieve opacity requires homogenization techniques which contribute substantially to production costs in terms of both time and equipment.

Accordingly, there remains a need for freezable confections having a stable opacity that can be sold in liquid form and frozen by the consumer prior to eating, and that can be manufactured in a cost effective manner.

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SUMMARY OF THE INVENTION

The present invention has met the above described needs by providing a freezable confection having a liquid consistency at room temperature (about 20°C) and a slushy or icy consistency when frozen. The confections are further characterized as having a stable opacity and an acidity within required federal guidelines for such products. Typically, products combining proteins, such as those found in milk, with acids have significant stability problems and experience coagulation of the milk, causing a separation of the product. The present invention overcomes these problems in the art.

Specified means to suspend and stabilize solid particles are combined in an opaque, flavored confection composition to provide a substantially homogenous stable edible product which, even when of a higher density, is stirrable at room temperature. The compositions contain natural and/or artificial sweeteners, flavor-imparting ingredient means, a stabilizer, an opacity-producing agent, sufficient water to provide a desired density and acid means to adjust the pH to within the desired range. The confection composition is ordinarily sealed in a plastic film pack in which it is sold. Chemical preservatives are optional. By placing the plastic film pack or sealed plastic package and enclosed flavored confection composition in a home freezer, a freeze-it-yourself "pop" is produced.

It is therefore an object of the present invention to provide a freezable confection having stable opacity with virtually no creaming or settling of the opacifying agent.

Another object of the present invention is to provide such a confection that has a smooth mouth-feel and dairy-like taste without the use of high amounts of milk products or other proteins that tend to settle out of the mixture.

Another object of the invention is to provide a freezable confection that is liquid at room temperature and

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does not experience any phase separation during storage and freezes to a slushy or icy consistency.

It is a further object of the invention to provide a freezable confection that maintains insoluble solids in suspension during storage at room temperature.

Another object of the invention is to provide freezable confections with enhanced nutritional value through the use of milk, milk products, soy products, fruit juices and fruit purees, which do not undergo settling or creaming during storage.

Another object of the invention is to provide a confection composition having a liquid consistency and the flavor of virtually any fruit, including "high-acid" fruit, such as lemon, cherry and orange.

Another object of the present invention is to provide a confection composition having a pH which is limited only by taste and government regulations.

These and other objects of the invention will be more fully understood from the following description of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention is generally directed to an edible, room-temperature storable, freezable confection composition having a stable opacity comprising an effective amount of an opacity producing component, an effective amount of a stabilizer, about 3.0 to about 40.0 weight % of a sweetener, from 0 to about 0.2 weight % of a preservative, sufficient acid to adjust the pH of the confection to between about 2.5 and 6.5, flavoring and coloring as desired, and the remainder water. The confection is characterized as being liquid at room temperature and slushy or icy when frozen, and it maintains a stable opacity through manufacturing and storage, even under rigorous manufacturing conditions, high

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heat and slow cooling. In addition, the confection can incorporate various insoluble solids in its formulation, including but not limited to cocoa, pigments and fruit purees and pulps, maintaining these solids in solution throughout storage even in the liquid phase.

The confection compositions, when in non-frozen or liquid form, are made homogenous and sufficiently viscous by combining the opacity producing agent with a solution containing a stabilizer. The resultant opacity and viscosity prevents or impedes any particles, such as those of fruit pulp, water dispersible artificial color such as insoluble titanium dioxide, or cocoa, from separating or settling out. Cocoa and/or chocolate liquor normally gives opaqueness to chocolate confections. Artificial color, coffee whiteners or creamers, titanium dioxide, soy derivatives, caseinates and/or milk or milk products can also be used in all of the freezable confections within the scope of this invention to produce an opaqueness in the product. When using creamer, milk, milk solids, milk products, soy derivatives or other protein-containing opacity-producing agent, the protein portion of this agent will combine with the stabilizer in such a way as to prevent the protein from precipitating out of solution or denaturing the emulsified fat portion of the agent, thereby imparting permanent opacity to the product.

An effective amount of opacity producing agent should be added. The term "effective amount" when used in reference to the opacity producing agent means that amount of the agent needed to impart the desired level of opacity to the confection. As will be appreciated by one skilled in the art, the effective amount of opacity producing agent to add will depend on the agent used. For example, titanium dioxide may only need to be added in a weight % of about 0.005, whole milk in a weight % of about 0.3 to about 20 and non-fat milk in a weight % of up to about 20 to impart the desired amount of

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opacity to the product. The opacity producing agent is preferably added in a weight % of between about 0.025 and 10.0, more preferably between about 0.1 and 5.0. Any suitable opacity producing component can be used, including but not limited to milk, milk solids, milk products, non-dairy creamers, soy derivatives, such as soy flour, soy milk, soy protein concentrate, soy isolates and the like, cereal grain flour and starch such as wheat flour and corn starch, maltodextrin, titanium dioxide, whey, whey protein and whey protein concentrate or combinations thereof.

Any type of milk can be used including skim, 1%, 2%, whole milk or combinations thereof. Milk products include, but are not limited to, non-fat milk solids (NFMS), dried whole milk, evaporated milk, cream, casein and derivatives, condensed sweetened milk, whey, whey protein and whey protein concentrate.

Non-dairy creamers, also known as creamer, whitener and coffee creamer, are generally composed of fat, typically partially hydrogenated vegetable fat, a carbohydrate source such as corn syrup solids, a protein such as sodium caseinate, and emulsifiers such as mono- and diglycerides. These creamers may also contain such things as dipotassium phosphate, titanium dioxide and flavorings. Creamers that do not contain sodium caseinate can also be used. Creamers can be used in liquid form, spray-dried form, or any other suitable form.

The stabilizer should be added in an effective amount. The term "effective amount" when used in reference to the stabilizer means the amount of stabilizer necessary for the confection to maintain protein and other insoluble solids in solution, and typically ranges between about 0.1 and 1.0 weight % of the product. As will be appreciated by one skilled in the art, more than 1.0 weight % of stabilizer can be used but typically will not be necessary to achieve the desired results. Suitable stabilizers for use in the present invention, either

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alone or in combination, include xanthan gum, mixtures of xanthan gum and carboxymethyl cellulose in a ratio of between about 33.3:66.7 to 50:50, alginates, pectins and carrageenan. The stabilizer used must be capable of interacting with the milk or other proteins, when protein containing products are used as the opacity producing agent. The stabilizer must also be used in an amount sufficient to enable any particles such as cocoa, fruit pulp, fruit puree, titanium dioxide or emulsified fat from the milk or creamer to be suspended throughout the confection. Thus, a frozen confection with suspended insoluble solids that is liquid at room temperature is provided.

Xanthan gum is the preferred stabilizer. Xanthan gum is produced by pure-culture fermentation of the microorganism *Xanthomonas campestris* which yields a high molecular weight polysaccharide from glucose. Xanthan gum is a mixed potassium, sodium and calcium salt of the polysaccharide, which contains mannose, glucose and glucuronic acid. Xanthan gum is commercially available as a powder from the Kelco Company and the Rhone-Poulenc Company; Keltrol®, sold by Kelco, is especially preferred for use in the present invention.

Sodium carboxymethylcellulose (CMC) is an anionic water-soluble polymer derived from cellulose. Chemically, it is a cellulose ether, produced by reacting alkali cellulose with sodium monochloroacetate. The viscosity varies with differing degrees of polymerization. When used in conjunction with xanthan gum as a stabilizer in the present invention, the ratio of xanthan gum to CMC is preferably in the range of between about 33.3:66.7 and 50:50. While CMC when used alone does not always produce suitable results, in combination with xanthan gum it does produce sufficient pseudoplasticity to provide the desired results. For economic reasons, therefore, one could replace some of the xanthan gum with CMC and still achieve acceptable results. Medium viscosity CMC is preferred. CMC is commercially available from Hercules Company.

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Alginates are derivatives of alginic acid, which is an insoluble colloidal acid that is a constituent of the cell walls of brown algae. Alginic acid is a polymer of mannuronic acid and guluronic acid; the proportion between the two acids depends on the type of seaweed. Propylene glycol alginate is particularly preferred for use in the invention. Alginates are available from Kelco Company. Alginates, and particularly propylene glycol alginates, are effective in a range of pH from between about 2.5 to about 6.5. The alginate can be either high or low viscosity and is preferably highly esterified, and should be used in an amount sufficient to achieve the level of pseudoplasticity necessary to suspend fat emulsions, fruit particles and the like.

Pectin is a purified carbohydrate product obtained by aqueous extraction of appropriate edible plant material. Pectin consists mainly of galacturonic acid and galacturonic acid methyl ester units. High methyl ester pectin, known as HM-pectin, is the preferred pectin for use in the present invention. HM-pectin having a degree of esterification of between about 70 and 75% is especially preferred. HM-pectin is available from Grindsted Products, Inc. Typically, when mixing milk protein and pectin, the milk/pectin mixture must be homogenized and cooled down prior to acidification. Within the scope of the present invention, however, it has been found sufficient to dissolve the pectin with good agitation in water having a temperature of between about 65 and 70°C. This pectin solution is then added to the confection mixture and mixed for at least about 10 minutes; acidification can proceed once the temperature of the mixture is below about 32-38°C.

Carrageenan is a colloid extract obtained from the seaweed *Chondrus crispus*. This seaweed yields kappa, iota and lambda varieties of carrageenan. Many commercially available carrageenan products are a mixture of two or three of these varieties. Carrageenan is commercially available from FMC

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Corporation. Carrageenan is preferably only used in confections that are not fruit based, such as chocolate, vanilla and butterscotch, which have a pH between about 4.0 and 6.5. A pH of below about 4.0 is generally too acidic for maintaining a pseudoplastic solution when using carrageenan. In addition, when using carrageenan any heating steps should be of a short duration, and the cooling process should be rapid.

Any suitable sweetener, including natural or artificial sweeteners or combination thereof, can be used. It is most advantageous, however, to use a sweetener of natural origin, including but not limited to cane sugar, corn syrup, corn sugar, dextrose, fructose and/or high fructose corn syrup. Artificial sweeteners such as aspartame and saccharine can also be used, as can non-sweet carbohydrates such as maltodextrin. To obtain the desired degree of sweetness and consistency upon freezing, the preferred sweetener comprises approximately equal amounts of 42 D E corn syrup and cane sugar. The confections according to the present invention contain between about 3 to about 40 weight % of sweetener or non-sweet carbohydrate.

Any suitable food preservative can be used, if desired, including but not limited to sodium benzoate, potassium sorbate and sodium sorbate. An approximately equal ratio of sodium benzoate to potassium sorbate is preferred in an amount of about 0.04 weight %; this preservative is the most effective at the contemplated pH of the final product. Typically, no more than 0.1 weight % of preservative will be needed, and more preferably about 0.05 weight percent is used.

The acid used to achieve the desired pH can be any edible acid approved for use in food. Suitable acids for use in the present invention include citric acid, malic acid, phosphoric acid glucono delta lactone, lactic acid, tartaric acid, adipic acid and fumaric acid. Generally, citric acid is preferred for fruity flavors and phosphoric acid and glucono delta lactone are preferred for the non-fruity flavors. The

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actual amount of acid used is that which is sufficient to obtain the desired taste and to comply with federal regulations. Typically, between about 0.0 and 0.6 weight %, more typically about 0.5 weight % of acid is used to adjust pH to between about 2.5 and 6.5; a pH of between about 2.8 and 4.6 is preferred. A maximum pH of about 4.2 is most preferred for a non-acid type confection, and a pH of 2.8 to 3.5 is most preferred for low and high acid type confections. Acidity of 4.6 and below also restricts the growth of pathogenic microorganisms and is required by the FDA if the product is not aseptically processed. As used herein, "non-acid" flavored confections refer to such things as chocolate, butterscotch and caramel flavor, "low-acid" refers to fruit flavors such as mango, guava, banana or coconut, and "high acid" refers to fruit flavors such as lemon, cherry or orange; these terms are well known to one skilled in the art.

The amount of water present in the aqueous confection compositions is dependent upon the type and concentration of sweetener. The soluble solids must result in an aqueous composition having a density of between about 3° to 40° Brix; a confection composition of about 25° and 35° Brix is preferred, and 30° is most preferred.

Any of various flavorings can be used to impart the desired flavor to the confection. For example, the confection can be flavored like a "high acid" fruit, a "low acid" fruit, or have the flavor of a non-fruity, so-called "non-acid" confection.

Chocolate-flavored confections optionally containing non-fat milk solids can be made by using, for example, chocolate liquor and/or cocoa. The cocoa can be either natural-process or Dutched-process cocoa and can be used either alone or in combination with chocolate liquor. When used, between about 1.5 and 3% by weight of natural medium-fat cocoa is preferred.

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The addition of vanillin and/or related substances further enhances the unique, sweet, dairy-like taste of the confections. Vanillin-related materials include, but are not limited to, vanilla flavor and vanilla extract, both of which are made from the vanilla bean, ethyl vanillin, natural vanillin, vanillin ex clove and vanillin ex tumeric.

Fruit pulp in the form of, for example, banana, mango or coconut puree or fruit concentrate, such as apple, citrus or pineapple juice concentrate, is optionally included in these compositions. The use of these optional ingredients depends primarily on particular flavor requirements, and consumer demands. Any fruit particles present in the fruit pulp or fruit concentrate, irrespective of size within the normal range, will be suspended within the body of the confection; thus, such particles will become dispersed throughout the confection upon freezing.

The present invention is also directed to a method for making an edible, room-temperature storable freezable confection having stable opacity comprising the steps of placing a desired amount of water into a mixing vessel; mixing an effective amount of an opacity producing agent into the water; adding an effective amount of stabilizer to the water/opacity agent mixture, and dispersing with vigorous agitation and stirring after dispersion to complete the reaction for at least about 10 minutes; adding between about 3.0 and 40.0 weight % of sweetener to the mixture; and adding one or more of the following, as desired: natural and/or artificial flavoring, natural and/or artificial coloring, cocoa, chocolate liquor, fruit pulp, fruit puree and fruit concentrate. All of these ingredients should be added in amounts sufficient to impart the desired flavoring, coloring and other properties to the confection, which amounts can be readily determined by one skilled in the art. The volume of the mixture should then be adjusted as necessary to impart the

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desired Brix level to the product. In the final step, the pH of the mixture is then adjusted with a suitable acid to between about 2.5 and 6.5. If the pH of the confection is 4.2 or less and the preservative level is 0.1% or greater, the mixture can then be packaged while at room temperature; preferred packaging is made from transparent, resinous plastic film.

A preservative, if used, can also be added to the mixture to extend shelf life and minimize microbial spoilage. A preservative, if used, is preferably added to the water prior to the addition of any other component; the preservative should be adequately dissolved before adding additional components.

As an alternative to using chemical preservatives and filling the plastic film at room temperature, after adjusting the pH to 4.2 or below the mixture can be heated to a temperature of between about 79 and 83°C; the heated mixture is then placed in packages at a temperature of between about 65 and 83°C, or higher, according to the pH and according to conventional and well-established procedures. The packages should be suitable for filling and sealing at elevated temperatures. Packages made from any suitable material, such as plastic, resinous plastic, and the like are filled and then sealed. The heating step helps to ensure long shelf-life and to avoid microbial spoilage.

When using carrageenan as the stabilizer, the heating step should be performed, unless the carrageenan used is designated cold soluble. When pectin is used, heating should be employed before the addition of the acid and then cooled down before acid introduction. When using any of the other above-described stabilizers, heating is preferred, but if heating is not done a suitable amount of chemical preservative should be used. In the preferred method, both heating and a minimal amount of preservative are used.

With the present stabilizer system, the confection compositions can be introduced to the plastic film, packaged

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and boxed while still hot and allowed to cool down gradually at an average rate of about 3° to 5°C per hour to ambient temperature (about 20°C) in the storage facility without any adverse effect on the physical characteristics of the composition. Thus, the packaged confections are storable at room temperature for many months and are suitable for freezing just prior to eating.

The opacity-producing agent should be added to the water and mixed until it is well dispersed. If the agent used is in powder form, it can be dissolved in water of a temperature between about 30 and 50°C. The stabilizer should then be dispersed with vigorous stirring and agitation maintained for about 10 to 15 minutes to ensure sufficient reaction time. Alternately, a stabilizer solution can be prepared by dissolving and dispersing an effective amount of stabilizer in water of ambient temperature. The stabilizer solution is then added to the water/opacity agent mixture. All other ingredients, such as sweeteners, salt, flavoring, coloring and fruit pulp, puree or concentrate can then be added with agitation. Additional water can then be added to adjust the composition to the desired Brix level. The final step in preparing the compositions is adjusting the pH, if necessary. For this purpose, an edible acid such as those described above, or another suitable, edible acid or combination thereof, is added until the composition has the desired taste and satisfies prevailing regulations for food products of this type. Typically, government regulations mandate a pH of below about 4.6 for food products; these regulations require special processing for low-acid foods having a pH of above about 4.6. In a preferred method, the acid is dissolved in a suitable amount of water to result in a solution having an acid strength of about 30 to 50%, unless phosphoric acid is used in which case an acid strength of about 5% is preferred; this solution

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should then be added slowly to the confection mixture with strong agitation.

The frozen confections created according to the above methods are opaque, the opacity brought about by the opacity-producing agent as described above. The flavor of the confection can be fruity, or non-fruity. The total soluble solids reflected by a range of from between about 3° to 40° Brix, which corresponds to a density of between about 1.0117 and about 1.1787.

Exemplary embodiments of the present invention are illustrated in Table 1. These embodiments are presented in the form of ingredients which are combined into compositions according to the above-described procedure and filled and sealed in plastic packages in the manner well-established in the art. The examples are presented solely for the purpose of illustration, and should not be construed as limiting the invention in any way.

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Table 1

CONFECTION COMPOSITIONS

Ingredients (% by weight)	Example 1 Chocolate	Example 2 Chocolate	Example 3 Orange	Example 4 Vanilla	Example 5 Mango	Example 6 Butterscotch	Example 7 Caramel	Example 8 Vanilla
Water	64.15	67.46	63.96	67.49	77.87	64.18	56.05	58.35
Potassium Sorbate	0.03	0.04	0.04	0.04	0.05	0.05	0.03	0.04
Sodium Benzoate	0.03	---	0.02	---	---	---	0.03	---
Sodium Citrate	0.20	---	0.10	---	0.15	---	---	---
NFMS	1.00	---	---	---	---	---	---	---
Coffee Whitener	---	1.50	---	2.00	---	---	---	---
Milk (whole)	---	---	4.0	---	---	5.0	---	10.00
Milk (skim)	---	---	---	---	---	---	20.00	---
Xanthan Gum	---	0.15	0.35	0.30	0.20	0.20	0.28	0.28
Propylene glycol alginate	---	0.60	---	---	---	---	---	---
High methoxyl pectin	0.70	---	---	---	---	---	---	---
CMC	---	---	---	---	0.20	0.15	---	---
Cocoa (10 to 11% fat)	1.50	0.50	---	---	---	---	---	---
Chocolate Liquor	---	0.50	---	---	---	---	---	---
Maltodextrin	3.00	---	---	10.00	---	---	---	---
Orange Flavor, natural	---	---	0.02	---	---	---	---	---
Mango Flavor, artificial	---	---	---	---	0.04	---	---	---
Butterscotch Flavor, artificial	---	---	---	---	---	0.04	---	---

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Table 1 continued

Ingredients (% by weight)	Example 1 Chocolate	Example 2 Chocolate	Example 3 Orange	Example 4 Vanilla	Example 5 Mango	Example 6 Butterscotch	Example 7 Caramel	Example 8 Vanilla
Chocolate Flavor, artificial	0.02	0.04	---	---	---	---	---	---
Caramel Flavor, artificial	---	---	---	---	---	---	0.20	---
Vanillin	0.02	0.01	0.03	0.02	0.05	0.05	---	0.02
Ethyl Vanillin	0.008	---	---	0.005	---	---	---	---
Corn Syrup 42 DE	9.00	15.00	10.00	10.00	5.00	15.00	---	16.00
Sucrose	20.00	14.00	20.00	10.00	15.00	15.00	23.00	15.00
Citric Acid	---	---	0.40	---	0.35	---	---	---
Phosphoric Acid (75%)	0.08	0.10	---	0.10	---	0.11	0.15	0.10
Salt	0.26	0.10	0.08	0.03	0.04	0.20	0.20	0.20
FD&C Yellow #6	---	---	---	---	0.03	---	0.01	---
Orange Concentrate (58° Brix)	---	---	1.00	---	1.00	---	---	---
Caramel Color	---	---	---	0.005	---	0.02	0.05	0.005
Titanium Dioxide	---	---	---	0.01	0.02	---	---	---

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Xanthan gum was obtained from Kelco Co. as Keltrol.
 CMC was obtained from Hercules Co. as CMC 9M31F.
 Propylene glycol alginate was obtained from Kelco Co. as Kelcoloid-S.
 High methoxyl pectin was obtained from Grindsted Products, Inc. as Mexpectin RS450.
 Maltodextrin was obtained from Grain Processing Corp. as Maltrin M040.

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Whereas particular embodiments of this invention have been described above for purposes of illustration, it will be appreciated by those skilled in the art that numerous variations of the details of the present invention may be made without departing from the invention as defined in the appended claims.

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WHAT IS CLAIMED IS:

1. An edible, room-temperature storable, freezable confection composition having a stable opacity comprising:
 - a) an effective amount of opacity producing agent;
 - b) an effective amount of stabilizer;
 - c) from about 3.0 to 40.0 weight % sweetener;
 - d) sufficient flavoring to impart the desired flavor to the confection;
 - e) from about 0 to 0.2 weight % preservative;
 - f) sufficient acid to adjust the pH of the confection to between about 2.5 and 6.5; and
 - g) the remainder water.
2. The composition of Claim 1, further characterized by the property of having a liquid consistency at room temperature and a slushy or icy consistency when frozen.
3. The composition of Claim 2, further comprising at least one member selected from the group consisting of cocoa, chocolate liquor, fruit pulp, fruit puree and fruit concentrate.
4. The composition of Claim 2, further comprising sufficient natural or artificial coloring or combinations thereof to impart the desired color to the confection.
5. The composition of Claim 2, wherein said opacity producing agent is at least one member selected from the group consisting of milk, milk solids, milk products, cream, non-dairy creamers, titanium dioxide, soy derivatives, cereal grain flour, cereal grain starch, maltodextrin, whey, whey protein and whey protein concentrate.
6. The composition of Claim 5, wherein said opacity producing agent is whole milk and said effective amount of opacity producing agent is between about 0.3 and 20 weight %.

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7. The composition of Claim 5, wherein said opacity producing agent is skim milk and said effective amount of opacity producing agent is between about 5 and 20 weight %.

8. The composition of Claim 2, wherein said stabilizer is selected from the group consisting of xanthan gum, xanthan gum with carboxymethyl cellulose in a 33.3:66.7 to 50:50 ratio, alginates, pectin and carrageenan.

9. The composition of Claim 2, wherein said sweetener is at least one member selected from the group consisting of sugar, corn syrup, corn sugar, sucrose, high fructose corn syrup, dextrose, fructose, aspartame, saccharine, other artificial sweeteners and non-sweet carbohydrates.

10. The composition of Claim 2, wherein said preservative is selected from the group consisting of sodium benzoate, potassium sorbate and sodium sorbate.

11. The composition of Claim 2, wherein said acid is selected from the group consisting of citric acid, phosphoric acid, malic acid, glucono delta lactone, lactic acid, tartaric acid, adipic acid and fumaric acid.

12. The composition of Claim 2, further characterized as having a density ranging between about 3° to 40° Brix.

13. The composition of Claim 2, wherein said pH is adjusted to between about 2.5 and 4.6.

14. The composition of Claim 2, further comprising a vanillin flavoring.

15. The composition of Claim 14, wherein said vanillin flavoring is selected from the group consisting of vanilla flavoring, vanilla extract, ethyl vanillin, natural vanillin, vanillin ex clove and vanillin ex tumeric.

16. The composition of Claim 2, wherein said flavoring is selected from the group consisting of natural flavoring, artificial flavoring, and combinations thereof.

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17. The composition of Claim 2, which is completely surrounded by and sealed in a resinous plastic film package.

18. A method for making an edible, room-temperature freezable storable confection having stable opacity comprising:

- a) placing a desired amount of water into a mixing vessel;
- b) mixing an effective amount of opacity producing agent into said water;
- c) adding an effective amount of stabilizer to the mixture of step b) and mixing with vigorous agitation for at least about 10 minutes;
- d) adding between about 3.0 and 40.0 weight % of sweetener to the mixture of step c);
- e) adding one or more ingredients selected from the group consisting of natural flavoring, artificial flavoring, natural coloring, artificial coloring, cocoa, chocolate liquor, fruit pulp, fruit puree and fruit concentrate to the mixture of step d);
- f) adjusting the volume of the mixture of step c) with water, if necessary; and
- g) adjusting the pH of the mixture of step f) to between about 2.5 and 6.5.

19. The method of Claim 18, further including the step of heating the mixture of step g) to a temperature of between about 79 and 83°C.

20. The method of Claim 18, further including the step of adding a preservative to the water of step a), prior to step b).

21. The method of Claim 18, wherein step g) is effected by the addition of a solution comprising one or more acids selected from the group consisting of citric acid, phosphoric acid, malic acid, glucono delta lactone, lactic acid, tartaric acid, adipic acid and fumaric acid.

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22. The method of Claim 19, further including the step of introducing said heated mixture into containers and sealing said containers.

23. The method of Claim 22, including employing as said container a resinous plastic film package.

24. The method of Claim 23, wherein said resinous plastic is transparent.

25. The composition of Claim 2, wherein said stabilizer is added in an effective amount ranging between about 0.1 to 1.0 weight %.

26. The composition of Claim 5, wherein said opacity producing agent is non-dairy creamer and said effective amount of opacity producing agent is between about 0.05 and 5 weight %.

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