Description

The present invention relates to chewing gum compositions and more particularly to chewing gum compositions having a decreased auto-oxidative potential resulting in chewing gum compositions having improved stability.

Chewing gums generally contain a water-insoluble gum base, a water insoluble flavoring liquid and water soluble sweeteners such as sucrose and corn, syrup or in sugarless gum, sorbitol, mannitol and artificial sweeteners. Also incorporated within the gum base may be plasticizers or softeners to improve consistency and texture of the gum. The gum base generally contains a natural rubber gum base, a synthetic rubber gum and or mixtures thereof. When synthetic gum bases are employed, a readily available and preferred elastomer component has been the styrene-butadiene copolymer (SBR).

Several deficiencies with conventional chewing gums using styrene-butadiene copolymer elastomers have existed which deficiencies have heretofore only been partially eliminated.

One such deficiency is the long term stability of chewing gums containing SBR, notably their lack of long term shelf stability. Various attempts have been made to improve this difficulty including use of antioxidants as well as natural gums such as chicle. Antioxidants have not been completely successful and natural gums are expensive to use. Polyvinyl acetate is an excellent stable material and has been used as a substitute for several natural gums used in chewing gums. When polyvinyl acetate is used with SBR elastomers in amounts above about 30%, incompatibility is evidenced by the formation of a non-homogenous gum base product. As such the use of polyvinyl acetate with SBR elastomers has been limited. The stability of SBR formulations is comparatively less than other synthetic elastomers primarily resulting from its oxidation on prolonged storage as is or when present in gum base formulations. In addition, SBR catalyzes the oxidation reaction of various flavoring liquids, such as peppermint oil and citrus flavors.

Similar to the stability deficiencies of SBR gum compositions such compositions normally require several days of curing prior to forming the compositions into discrete pieces for wrapping.

Various efforts have been made to replace the styrene-butadiene copolymer elastomer in chewing gum with alternate elastomers that do not exhibit the same dificiencies of SBR. One of the first formulations is described by Comollo in U.S. Patent 3,984,574.

The Comollo patent discloses a non-tack chewing gum which contains as the preferred elastomer a low molecular weight polyisobutylene (molecular weight of 6,000 to 12,000), and/or a higher molecular weight polyisobutylene (molecular weight of 40,000 to 120,000). It is also disclosed that other elastomers may be employed in place of or together with the polyisobutylene, namely, polyisoprene, a copolymer of isobutylene and isoprene, or the copolymer of butadiene and styrene. Comollo indicates in column 7 beginning at line 7 that it was discovered that combinations of natural gums, natural resins, rosin derivatives and resins of waxes of petroleum origin, natural gums, natural or synthetic rubbers, and resins, and natural gums, natural or synthetic rubbers and waxes, or combinations of rubbers, waxes and resins produce inherently tacky chewing gum bases and such combinations should be avoided. In addition to the references elastomers, the Comollo chewing gum contains hydrogenated vegetable oils or animal fats, mineral adjuvants, such as calcium carbonate, talc or tricalcium phosphate, polyvinyl acetate having a molecular weight of at least 2,000, and fatty acids, such as stearic and palmitic acid, and mono and diglycerides or fatty acids.

Another non-SBR composition is disclosed by Cherukuri et al in U.S. Patent 4,352,823. This patent discloses the use of polyisobutylene elastomers to make a bubble gum having film forming characteristics. The elastomer gum base used a combination of essential ingredients including glyceryl triacetate and acetylated monoglyceride as plasticizers, a polyterpene resin as an anti-tack agent, polyethylene wax and various other conventional chewing gum additives.

U.S. Patent No. 4,357,355 to Koch et al which corresponds to EP—A—0067604, is likewise directed to a non-stick bubble gum base composition that can contain non-SBR elastomers. In particular, this patented non-adhesive bubble gum base composition includes a high molecular weight vinyl polymer such as polyvinyl acetate or polyvinyl alcohol, together with an emulsifier, in combination with ingredients such as an elastomer, an oleaginous plasticizer, an elastomer solvent, mineral adjuvants, fatty acids, and others. The emulsifier is preferably present in an amount with respect to the non-toxic vinyl polymer in the range from 5 to 75% by weight. A preferred process for the production of the bubble gum base composition is also disclosed, which comprises preparing a homogeneous premixture of the non-toxic vinyl polymer and the emulsifier, and then combining the pre-mixture with the remainder of the ingredients of the base composition.

US—A—4224345 discloses a chewing gum base composition, the composition comprising vinyl acetate resin, ester gum, wax, emulsifer, calcium carbonate, talc, a fatty matter and about 30 to 40% rubber which may be a mxiture of low molecular weight polyisobutylene.

EP—A—0066864 discloses a homogeneous gum base composition which includes a properly plasticized elastomer component and a properly plasticized resin component, and optionally, a third component having fillers, emulsifiers, and/or softening agents, texturizing agents and waxes normally associated with production of chewing gum base.

US—A—422343 discloses a chewing gum base consisting of about 18 to 40% by weight of rubber and

about 82 to 60% by weight of basic materials of a chewing gum and a combination of this chewing gum base with ordinary chewing gum additives and fatty matter.

EP—A—0067665 discloses a non-adhesive chewing gum base composition which comprises in weight percent: elastomer, 8—30%; oleaginous plasticizer, 9—40%; mineral adjuvant(s), 10—15%; non-toxic vinyl polymer, 16—32%; emulsifier, 0.5—10%; elastomer solvent, 2.50—13%; wherein all of the ingredients of the gum base composition are mixed with each other in one step and under high shear mixing, with the elastomer being added first, except that the elastomer alone or the combination of elastomer and elastomer solvent may optionally initially be subjected to shearing action prior to the addition of the other ingredients.

A process for producing the chewing gum base composition is also disclosed, which comprises mixing the ingredients of the base composition in one step. Preferably, the elastomer is charged first, and subject to high shear, after which the remaining components are added and shearing is continued.

While the prior art compositions have been effective to make non-stick or tack free bubble-gums, none of these non-SBR formulations have been effective for preparing stable conventional chewing gums. It would thus be beneficial to prepare a non-SBR chewing gum having the combined benefits of easy processing, improved stability and extended flavour sensation.

In accordance with the present invention a chewing gum composition having extended stability of flavour taste and decreased auto-oxidation potential has been unexpectedly developed from a unique combination of elsatomers, elastomer solvent, polyvinyl acetate, waxes, and glyceryl monostearate.

According to one aspect of the present invention, there is provided a chewing gum composition having an extended flavour-taste stability and an increased resistance to auto-oxidation, which composition comprises:

(a) a flavouring agent; and

(b) a chewing gum base comprising an elastomer mixture in an amount of from 0.5% to 30% by weight of the chewing gum base; a wax; an elastomer solvent; a vinyl polymer; and glyceryl monostearate;

characterized in that the elastomer mixture is essentially free from styrene-butadiene copolymer elastomer and comprises from 2 to 12%, by weight of the chewing gum base, of an isobutylene-isoprene copolymer and from 2 to 20%, by weight of the chewing gum base, of a polyisobutylene, the total elastomer content employed not exceeding 30% by weight of the chewing gum composition; and in that the elastomer solvent is present in an amount no less than 23% by weight of the chewing gum base.

According to a second aspect of the present invention, there is provided a process for preparing a flavoured chewing gum composition, which process comprises admixing a chewing gum base at a temperature in the range from 70°C to 120°C with a flavouring agent, continuing the mixing until a uniform mixture of gum base and flavouring is obtained and, thereafter, forming the mixture into suitable chewing gum shapes, the flavouring agent comprising an artificial, natural or synthetic oil and the chewing gum base being prepared from an elastomer mixture which is present in an amount of from 0.5% to 30% by weight of the chewing gum base, an elastomer solvent, a vinyl polymer, glyceryl monostearate, and one or more waxes;

characterised in that the elastomer mixture is essentially free from styrene-butadiene copolymer elastomer and comprises from 2 to 12%, by weight of the chewing gum base, of an isobutylene-isoprene copolymer and from 2 to 20%, by weight of the chewing gum base, of a polyisobutylene, the total elastomer content employed not exceeding 30% by weight of the chewing gum composition; and in that the elastomer solvent is present in an amount no less than 23% by weight of the chewing gum base.

The chewing gum base is preferably present in an amount of from 5% to 45% by weight based on the weight of the composition.

The chewing gum compositions of this invention exhibit rapid processing resulting from a rapid setting base formulation and easy processing and handling resulting from the compositions soft and pliable chewing gum consistency. In addition, the resulting chewing gum compositions have a consistent chew, that is a uniform chew character throughout the chewing period coupled with a higher level or flavor stabilization. The chewing gums also have long storage stability without product deterioration. When the compositions are chewed, a soft chew characteristic is evidenced along with an even flavor/sweetness release.

The elastomers useful in the chewing gum formulation include a mixture of isobutylene isoprene copolymer and polyisobutylene. The isobutylene isoprene copolymer represents commercially available material available from a number of suppliers. This material is used in combination with polyisobutylene which has a preferred low molecular weight, normally from 37,000 to about 87,000 preferably from 37,000 to 80,000, determined by the Flory method. The low molecular weight polyisobutylene component may be used as a single polyisobutylene material of combination of different polyisobutylene compounds provided each has a molecular weight within the range defined. The use of a combination of elastomers has been found essential to achieve a chewing gum composition having the desired elasticity and texture.

The total elastomer content employed is in an amount of 0.5% to 30% by weight of the gum base and preferably from 5% to 20% by weight of the gum base. The elastomer mixture should contain from 2% to 12% by weight isobutylene isoprene copolymer and 2% to 20% by weight polyisobutylene. When the total amount of elastomer is below 0.5% the composition lacks elasticity, and cohesiveness whereas at amounts above 30% the formulation is hard and rubbery.

In addition to the essential presence of the elastomer mixture, the chewing gum composition may contain any natural water-insoluble gum base well known in the art. For example, those polymers which are suitable include, without limitation, substances of vegetable origin such as chicle, jelutong, gutta percha and crown gum. In general, amounts up to 10% by weight of the final chewing gum composition are acceptable with preferred amounts being from 0.5% to 2.5% by weight.

The gum base composition contains elastomer solvents to aid in softening the rubber component. Such elastomer solvents may comprise methyl, glycerol or pentaerythritol esters of rosins or modified rosins, such as hydrogenated, dimerized or polymerized rosins or mixtures thereof. Examples of elastomer solvents suitable for use herein include the pentaerythritol ester of partially hydrogenated wood rosin, pentaerythritol ester of wood rosin, glycerol ester of partially dimerized rosin, glycerol ester of polymerized rosin, glycerol ester of tall oil rosin, glycerol ester of wood rosin and partially hydrogenated wood rosin and partially hydrogenated methyl ester of rosin; terpene resins including polyterpene and polymers of α-pinene or β-pinene and mixtures thereof. The elastomer solvent may be employed in an amount ranging from 23% to 55% and preferably 23% to 38% by weight of the gum base. Amounts above 55% cause a soft product to be formed which destroys the chew characteristic.

Vinyl polymers, and in particular polyvinyl acetate (PVA) is an essential ingredient. The preferred PVA has a molecular weight of at least 2,000. Such materials are commercially available in various molecular weights which can be successfully used. The polyvinyl acetate is employed in amounts of 5% to about 45% by weight and preferably 7% to 35% by weight. These materials when used in such high amounts aid in extending the elastomer mixture while maintaining product integrity. Amounts below about 5% cause the base to be unstable and result in nonuniform flavor release. Amounts above 45% cause segregation of gum constituents to occur.

It is essential to employ glyceryl monostearate as an emulsifier. When absent the formulation has poor stability and lacks acceptance texture. It is believed that the glyceryl monostearate aids in bringing the normally immiscible constituents together in such a way that they form a single finely dispersed stable system. This emulsifier also simplifies the incorporating of flavors into the final base and aids in retaining finely divided solids to the gum base complex. The glyceryl monostearate is employed in amounts of 1% to 15% and preferably 3% to 9%. Additional emulsifiers may also be included, notably lecithin, fatty acid and monoglycerides, -diglycerides and, -triglycerides, propylene glycol monostearate and mixtures thereof. Such materials may be used in the amount of 1% to 25% by weight.

The gum base formulation must employ a wax material. The waxes have been found to soften the rubber elastomer mixture and improve elasticity of the chew character. The waxes employed are preferably microcrystalline wax, paraffin wax, and mixtures thereof. Useful amounts are from 2% to 25% by weight and preferably form 2.5% to 20% by weight of the gum base composition. Preferably these waxes are used in combination in amounts of 5% to 20% microcrystalline wax and 3% to 15% paraffin wax.

A variety of traditional ingredients such as plasticizers or softeners may optionally be added. Such materials are optional and not essential in the present formulation. Such materials include hydrogenated vegetable oils, lanolin, stearic acid, sodium stearate, potassium stearate, glyceryl triacetate and glycerine and mixtures thereof. Such materials when incoporated into the gum base obtain a variety of desirable textures and consistency properties. These individual materials are generally employed in amounts of 2% to 25% by weight and preferably in amounts of from 1.5% to 12% by weight of the gum base composition. Because of the low molecular weight of these compounds, they are able to penetrate the fundamental structure of the base making it plastic and less viscous.

Optionally, bulking agents such as fillers may also be employed. Illustrative fillers may include calcium carbonate, talc, aluminum hydroxide, alumina, aluminum silicate, calcium phosphates (anhydrous and dihydrate) and combinations thereof. Preferably the amount of filler when used will vary up to 50% by weight of the chewing gum base.

The manner in which the base constituents are blended is not critical and is performed using standard techniques and equipment known to those skilled in the art. In a typical embodiment a premixture may be prepared by initially softening a previously mixed elastomer composition by agitating it with an elastomer solvent and/or plasticizers, and/or emulsifiers for a period of 30 minutes to 120 minutes, once initial mixing is complete the remaining base constituents may be added in bulk, incrementally or stepwise while the resulting mixture is blended for a further equivalent period of time. Once blending is complete, the remaining chewing gum composition additives may be added to the prepared base to form a final chewing gum composition by standard techniques.

The present chewing gum base may be formulated into a variety of chewing gum products utilizing standard procedures and equipment. A chewing gum composition may be prepared by combining conventional ingredients such as sweeteners, flavors, colorants and the like.

The sweetening agent may be selected from a wide range of materials including water-soluble agents, water-soluble artificial sweeteners, and dipeptide based sweeteners, including mixtures thereof. Without being limited to particular sweeteners, representative illustrations encompass:

A. Water-soluble sweetening agents such as monosaccharides, disaccharides and polysaccharides such as xylose, ribose, glucose, mannose, galactose, fructose, dextrose, sucrose, sugar, maltose, partially hydrolyzed starch, or corn syrup solids and sugar alcohols such as sortitol, xylitol, mannitol and mixtures thereof.

B. Water-soluble artificial sweeteners such as the soluble saccharin salts, i.e., sodium or calcium saccharin salts, cyclamate salts, acesulfam-K, and the free acid form of saccharin.

C. Dipeptide based sweeteners such as L-aspartyl-L-phenylalanine methyl ester and materials described in U.S. Patent No. 3,492,131.

In general, the amount of sweetener will vary with the desired amount of sweetners selected for a particular chewing gum. This amount will normally be 0.01% to 90% by weight when using an easily extractable sweetener. The water-soluble sweeteners described in category A above, are preferably used in amounts of 25% to 75% by weight, and most preferably from 50% to 65% by weight of the final chewing gum composition. In contrast, the artificial sweeteners described in categories B and C are used in amounts of 0.005% to 5.0% and most preferably 0.05% to 2.5% by weight of the final chewing gum composition. These amounts are ordinarily necessary to achieve a desired level of sweetness independent from the flavor level achieved from flavor oils.

The chewing gum composition of this invention may additionally include the conventional additives of coloring agents such as titanium dioxide; emulsifiers such as lecithin and glyceryl monostearate, and additional fillers such as aluminum hydroxide, alumina, aluminum silicates, calcium carbonate, and talc and combinations thereof. Preferably the amount of total fillers when used will vary up to 30% by weight of the final gum composition.

Flavoring agents well known in the chewing gum art may be added to the chewing gum compositions of the instant invention. These flavoring agents may be chosen from one or more of the following, a natural flavouring agent, preferably a natural oil; and a synthetic flavouring agent, preferably a synthetic oil. The flavouring agents may be derived from plants, leaves, flowers and fruits, and combinations thereof. Representative flavoring liquids include; spearmint oil, cinnamon oil, oil of wintergreen (methylsalicylate) and peppermint oils. Also useful are artificial, natural or synthetic fruit flavors such as citrus oil including lemon, orange, grape, lime and grapefruit and fruit essences including apple, strawberry, cherry and pineapple.

The amount of flavoring agent employed is normally a matter of preference subject to such factors as flavor type, base type and strength desired. In general, amounts of 0.05% to 3.0% by weight of the final chewing gum composition are usable with amounts of 0.3% to 1.5% being preferred and 0.7% to 1.2% being most preferred.

The finished chewing gum containing the flavoring agents unexpectedly exhibits enhanced flavor stability over prolonged periods. This effect is believed to occur from a reduced auto-oxidative potential present in the chewing gums of the invention resulting from the absence of SBR elastomers and the unique combination of ingredients used in the present invention. This reduced auto-oxidative potential is quite important when preparing chewing gum compositions using flavoring agents that undergo oxidative reactions within the formulation. Flavoring agents that primarily undergo such reactions include peppermint oil and citrus flavors, such as lemon, orange, grape, lime and grapefruit.

A disadvantage associated with the use of such oils in the past has been their degradation during storage resulting in change in odor and flavor properties. Several studies have undertaken to identify the aging characteristics of peppermint oil.

One study is described by R. H. Reitsema, et al., in *Oxidation of Peppermint Oil.* Industrial and Engineering Chemistry, Vol. 44, page 176, January 1952, wherein three reactions are described as contributing to the aging process. The first reaction is the isomerization of terpenes which is described as having only minor importance. The second reaction involves the polymerization of the oil constituents which is noted as increasing the oils molecular weight and the viscosity of the resulting product. And thirdly, the most important reaction is identified as the oxidation of the peppermint oil which affects aging of the oil from a flavor standpoint. Specific components involved in the oxidation aging process include the pinenes, limonene and menthoforan.

Various attempts have been made to inhibit the oxidation process to prevent the formation of oxidative by-products commonly referred to as "off-note" material. One conventional technique involves the use of antioxidants in the peppermint oil in an effort to inhibit the reaction from occurring. The use of such antioxidants, however, have not been successful since they are either not effective in suppressing the oxidation reaction over prolonged storage conditions or they have resulted in the formation of "off-note" peppermint oil detracting from the flavoring agent properties. These processes at best have merely attempted to mask the oxidation process by-products without removing the oxidative constituents from the oil themselves.

In contrast, in view of the reduced auto-oxidative potential attributable to the instant formulation, use of conventional antioxidants is possible without formulation of "off-note" material while maintaining prolonged storage conditions. Useable antioxidants and preservatives may include those materials conventionally utilized in chewing gum compositions such as butylated hydroxyanisole, butylated hydroxy toluene and propyl gallate.

The chewing gum formulations are prepared by conventional methods. An illustrative process involves first melting the gum base at a temperature from 70 to 120°C and mixing the gum base in a kettle with a liquid softener and/or a emulsifier for 2 to 8 minutes. To this mixture 2/3 to 3/4 of the sugar ingredients and colors are added and mixing is continued for 1 to 4 minutes. To this mixture the remaining sugar ingredients are added and while mixing is continued, the flavoring agent is slowly added. Mixing is

maintained for 1 to 4 minutes. To this mixture a humectant can be added and mixing is continued for 1 to 4 minutes. The gum is discharged from the kettle and formed into its desired shape such as strips, slabs, chunks, ball, ropes and/or center filled.

A preferred process for preparing a flavored chewing gum composition comprises admixing the chewing gum base at a temperature from between 70°C to 120°C with the flavoring agent, continuing the mixing until a uniform mixture of gum base and flavoring is obtained and thereafter forming the mixture into suitable chewing gum shapes, said flavoring agent comprises natural or synthetic oils and said chewing gum base prepared from an elastomer mixture of isobutylene isoprene copolymer and polyisobutylene, elastomer solvent, polyvinyl acetate, glyceryl monostearate, and waxes.

The following examples are given to illustrate the invention, but are not deemed to be limiting thereof. All percentages given throughout the specification are based upon weight unless otherwise indicated, percentages of base components are by weight of the base, whereas chewing gum composition components are by weight of the final chewing gum formulation.

Examples

These examples demonstrate the difference of SBR gum base to non-SBR gum base. These gum bases are used to make identifiable gums which are used to demonstrate the invention.

Comparative A

The following demonstrates how to prepare an SBR base as in Table 1.

To a kettle is added a premix which is composed of Butadiene-Styrene Copolymer, Hydrogenated Vegetable Oil, Glycerol Ester of Polymerized resin and Emulsifier. Mix 15 minutes in which time the melted mass reaches approximately 88°C (190°F). To this mixture is added in sequential manner, filler, polyvinyl acetate, wax, antioxidant and emulsifier while mixing is continued. The final temperature should range from 82°C (180°F) to 99°C (210°F). The molten mass is discharged from the kettle into coated pans. The base is allowed to cool and harden before depanning.

Comparative B

The following demonstrates how to prepare an SBR base as in Table 1.

Add to a kettle a premix which is composed of Butadiene-Styrene Copolymer, Hydrogenated Vegetable Oil, Glycerol Ester of Polymerized Resin and Emulsifier. Mix 15 minutes, in which time the melted mass reaches approximately 88°C. To this mixture is added in sequence the Glycerol Ester of Polymerized Resin and Glyceryl Ester of partially Hydrogenated Wood Rosin, Pentaerythritol Ester of partially Hydrogenated Wood Resin, Polyvinyl Acetate, Hydrogenated Vegetable Oil, antioxidant, Emulsifier and wax while mixing is continued. Final temperature should range from 82°C (180°F) to 99°C (210°F). The molten mass is discharged from the kettle into coated pans. The base is allowed to cool and harden before depanning.

TABLE 1

Ingredient	Comparative A	B
Butadiene-Styrene Copolymer	10.00	10.49
Filler	14.88	—
Pentaerythritol Ester of Partially Hydrogenated Wood Resin	—	20.94
Glyceryl Ester of Partially Hydrogenated Wood Rosin	11.88	5.47
Glycerol Ester of Polymerized Resin	9.08	10.85
Polyvinyl Acetate	21.82	22.88
Waxes	13.47	10.94
Emulsifier	8.94	7.46
Hydrogenated Vegetable Oil	10.00	10.96
Antioxidant	1000 ppm	1000 ppm

Inventive Example 1
Inventive Runs A to F

The following example demonstrates how to prepare a Non-SBR base as in Table 2—Examples 'A' through 'F':

Add to the kettle a premix which is composed of Isobutylene-Isoprene Copolymer, Glycerol Ester of Polymerized resin and paraffin wax. Mix 15 minutes in which time the melted mass reaches approximately 88°C (190°F). To this mixture is added in sequence Glycerol Ester of Polymerized Resin; Glyceryl Ester of partially Hydrogenated Wood Rosin; Polyvinyl acetate; Polyisobutylene; wax; Hydrogenated vegetable oil; Glycerol Monostearate, waxes, filler, and the antioxidant while mixing as continued. Final temperature should range from 82°C (180°F) to 99°C (210°F). The molten mass is discharged from the kettle into coated pans. The base is allowed to cool and harden before depanning.

Inventive Example 2
Inventive Run G

The following example demonstrates how to prepare a Non-SBR base as in Table 2—Example 'G':

Add to the kettle a premix which is composed of Isobutylene-Isoprene Copolymer, Terpene Hydrocarbon resin and paraffin wax. Mix 15 minutes in which time the melted mass reaches approximately 88°C (190°C). To this mixture is added in sequence the Terpene Hydrocarbon Resin and Filler; Glyceryl Ester of partially Hydrogenated Wood Resin; Polyvinyl acetate; Polyisobutylene; wax; Hydrogenated vegetable oil; Glyceryl; Monostearate, filler and antioxidant while mixing is continued. Final temperature should range from 82°C (180°F) to 99°C (210°F). The molten mass is discharged from the kettle into coated pans. The base is allowed to cool and harden before depanning.

Inventive Examples
TABLE 2

Ingredient	A	B	C	D	E	F	G
Isobutylene-Isoprene Copolymer	5.0	5.0	7.0	5.0	5.5	5.0	5.0
Polyisobutylene	7.0	7.0	7.0	7.0	3.5	9.0	9.0
Polyvinyl Acetate	20.0	22.0	22.0	20.0	18.0	24.0	24.0
Glyceryl Ester of Partially Hydrogenated Wood Rosin	26.0	16.0	13.0	26.0	22.0	27.0	15.0
Glycerol Ester of Polymerized Resin	7.0	7.0	10.0	7.0	5.5	7.0	—
Hydrogenated Vegetable Oil	5.0	5.0	5.0	5.0	8.0	5.0	4.0
Polyterpene Resin	—	—	—	—	—	—	10.0
Microcrystalline Wax	12.0	11.0	10.0	9.0	6.5	12.0	7.0
Paraffin Wax	7.0	6.0	—	—	12.0	7.0	5.0
Glyceryl Mono Stearate	4.0	3.6	4.0	3.6	5.0	4.0	3.33
Filler	7.0	17.4	18.0	17.4	14.0	—	17.67
Antioxidant	1000 ppm	1000 ppm	1000 ppm	1000 ppm	1000 ppm	1000 ppm	1000 ppm

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Inventive Example 3 and Comparative Examples

The following Examples demonstrate how to make conventional chewing gums from the gum bases recited in Table 1 and Table 2.

Chewing gum formulations are prepared with the ingredients cited in Table 3. The formulations were prepared by first melting the gum base at a temperature from 82 to 94°C and mixing the gum base in a kettle with the corn syrup and lecithin. Mixing is continued for approximately 6 minutes to obtain a homogeneous mixture. To this mixture is then added 2/3 sugar, dextrose and color. Mixing is continued for approximately 3 minutes. The remaining 1/3 sugar is added and while mixing is continued, the flavor is slowly added. Mixing is maintained for approximately 4 minutes, at which time the Glycerin is added and mixing is continued for an additional 3 minutes. The gum is then discharged from the kettle and formed into strips having a thickness of 0.18 centimeters and cooled to room temperature.

The formulations were subjected to test panel studies with multiple panelists. The results demonstrated a controlled release of flavor and sweetness from the gums made with non-SBR bases as recited in Table 2 vs. the flavor and sweetness release found from the gums made with SBR gum bases as recited in Table 1.

The formulations were subjected to stability analysis. This is accomplished by placing the gums in a controlled incubator at 37°C for an extended period of time, such as 1 week through 8 week time stations. Once removed from the incubator, the gums were subjected to test panel studies with multiple panelists. The results demonstrated an increased peppermint stability found in the gums made with gum base (non SBR) as cited in Table 2 vs. the stability of the gums made with gum bases (SBR) as cited in Table 1.

TABLE 3

Ingredient	Percentage usage
Gum Base	21.0
Corn Syrup (44°Be)	16.0
Sugar (powdered)	55.4
Dextrose	6.0
Glycerin	0.45
Lecithin	0.2
Color	0.1
Flavor (peppermint oil)	0.85

Inventive Example 4 and Comparative Example

Chewing gum formulations are prepared with the ingredients cited in Table 4. The formulations were prepared by first melting the gum base at a temperature from 82 to 94°C and mixing the gum base in a kettle with the corn syrup and lecithin. Mixing is continued for approximately 6 minutes to obtain a homogeneous mixture. To this mixture is then added 2/3 sugar, dextrose and color. Mixing is continued for approximately 3 minutes. The remaining 1/3 sugar is added and while mixing is continued, the flavor is slowly added. Mixing is maintained for approximately 4 minutes, at which time the Glycerin is added and mixing is continued for an additional 3 minutes. The gum is then discharged from the kettle and formed into strips having a thickness of 0.18 centimeters and cooled to room temperature.

The formulations were subjected to test panel studies with multiple panelists. The results demonstrated a controlled release of flavor and sweetness from the gums made with non-SBR bases as recited in Table 2 vs. the flavor and sweetness release found from the gums made with SBR gum bases as recited in Table 1.

The formulations were also subjected to stability analysis. This is accomplished by placing the gums in a controlled incubator at 37°C for an extended period of time, such as 1 week through 8 week time stations. Once removed from the incubator, the gums were subjected to test panel studies with multiple panelists. The results demonstrated an increased flavor stability found in the gums made with gum base (non SBR) as cited in Table 2 vs. the stability of the gums made with gum bases (SBR) as cited in Table 1.

TABLE 4

Ingredient	A	B	C	D	E	F	G
Gum Base	21.0	21.0	21.0	21.0	20.5	20.0	22.0
Sugar	54.42	54.25	54.45	54.4	54.95	55.25	53.25
Corn Syrup	17.0	17.0	17.0	17.0	17.0	17.0	17.0
Dextrose	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Color	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Flavor	0.83	1.0	0.8	0.85	0.8	1.0	1.0
Glycerin	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Lecithin	0.2	0.2	0.2	0.2	0.2	0.2	0.2
**Type	Fruit Natural and Artificial	Cinnamon	Methyl Salicilate	Spearmint	Fruit Natural	Strawberry	Artificial Fruit

Claims

1. A chewing gum composition having an extended flavour-taste stability and an increased resistance to auto-oxidation, which composition comprises:—

(a) a flavouring agent; and

(b) a chewing gum base comprising an elastomer mixture in an amount of from 0.5% to 30% by weight of the chewing gum base; a wax; an elastomer solvent; a vinyl polymer; and glyceryl monostearate;

characterised in that the elastomer mixture is essentially free from styrene-butadiene copolymer elastomer and comprises from 2 to 12%, by weight of the chewing gum base, of an isobutylene-isoprene copolymer and from 2 to 20%, by weight of the chewing gum base, of a polyisobutylene, the total elastomer content employed not exceeding 30% by weight of the chewing gum composition; and in that the elastomer solvent is present in an amount not less than 23% by weight of the chewing gum base.

2. A chewing gum composition according to Claim 1, wherein the flavouring agent is present in an amount of from 0.05% to 3.0%, preferably 0.3% to 1.5% and more preferably 0.7% to 1.2%, by weight based on the weight of the composition.

3. A chewing gum composition according to Claim 1 or 2, wherein the chewing gum base is present in an amount of from 5% to 45% by weight based on the weight of the composition.

4. A chewing gum composition according to Claim 1, 2 or 3, wherein the elastomer mixture is present to an extent of from 5% to 20%, by weight of the chewing gum base.

5. A chewing gum composition according to Claim 1, 2, 3 or 4, wherein the polyisobutylene has a molecular weight in the range of from 37000 to 87000.

6. A chewing gum composition according to any preceding claim, wherein the elastomer solvent is present in an amount no greater than 55% by weight based on the weight of the gum base and is preferably chosen from one or more of the following:

pentaerythritol ester of partially hydrogenated wood rosin, pentaerythritol ester of wood rosin, glycerol ester of partially dimerized rosin, glycerol ester of polymerized rosin, glycerol ester of tall oil rosin, glycerol ester of wood rosin, glycerol ester of partially hydrogenated wood rosin and partially hydrogenated methyl ester of rosin; and terpene resins, for example polyterpene and polymers of α-pinene or β-pinene.

7. A chewing gum composition according to any preceding claim, wherein the vinyl polymer is polyvinyl acetate which is present to an extent of from 5% to 45%, preferably 7% to 35%, by weight of the gum base.

8. A chewing gum composition according to any preceding claim, wherein the glyceryl monostearate is present to an extent of from 1% to 15%, preferably 3% to 9%, by weight of the gum base.

9. A chewing gum composition according to any preceding claim, wherein the wax is present to an extent of from 2% to 25%, preferably 2.5% to 20%, by weight of the gum base.

10. A chewing gum composition according to any preceding claim, wherein the wax is chosen from: microcrystalline wax, paraffin wax and mixtures thereof.

11. A chewing gum composition according to Claim 10, wherein the microcrystalline wax is present in an extent of from 5% to 20% and the paraffin wax is present to an extent of from 3% to 15%, both by weight based on the weight of the gum base.

TABLE 4

Ingredient	A	B	C	D	E	F	G
Gum Base	21.0	21.0	21.0	21.0	20.5	20.0	22.0
Sugar	54.42	54.25	54.45	54.4	54.95	55.25	53.25
Corn Syrup	17.0	17.0	17.0	17.0	17.0	17.0	17.0
Dextrose	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Color	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Flavor	0.83	1.0	0.8	0.85	0.8	1.0	1.0
Glycerin	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Lecithin	0.2	0.2	0.2	0.2	0.2	0.2	0.2
**Type	Fruit Natural and Artificial	Cinnamon	Methyl Salicilate	Spearmint	Fruit Natural	Strawberry	Artificial Fruit

Claims

1. A chewing gum composition having an extended flavour-taste stability and an increased resistance to auto-oxidation, which composition comprises:—

(a) a flavouring agent; and

(b) a chewing gum base comprising an elastomer mixture in an amount of from 0.5% to 30% by weight of the chewing gum base; a wax; an elastomer solvent; a vinyl polymer; and glyceryl monostearate;

characterised in that the elastomer mixture is essentially free from styrene-butadiene copolymer elastomer and comprises from 2 to 12%, by weight of the chewing gum base, of an isobutylene-isoprene copolymer and from 2 to 20%, by weight of the chewing gum base, of a polyisobutylene, the total elastomer content employed not exceeding 30% by weight of the chewing gum composition; and in that the elastomer solvent is present in an amount not less than 23% by weight of the chewing gum base.

2. A chewing gum composition according to Claim 1, wherein the flavouring agent is present in an amount of from 0.05% to 3.0%, preferably 0.3% to 1.5% and more preferably 0.7% to 1.2%, by weight based on the weight of the composition.

3. A chewing gum composition according to Claim 1 or 2, wherein the chewing gum base is present in an amount of from 5% to 45% by weight based on the weight of the composition.

4. A chewing gum composition according to Claim 1, 2 or 3, wherein the elastomer mixture is present to an extent of from 5% to 20%, by weight of the chewing gum base.

5. A chewing gum composition according to Claim 1, 2, 3 or 4, wherein the polyisobutylene has a molecular weight in the range of from 37000 to 87000.

6. A chewing gum composition according to any preceding claim, wherein the elastomer solvent is present in an amount no greater than 55% by weight based on the weight of the gum base and is preferably chosen from one or more of the following:

pentaerythritol ester of partially hydrogenated wood rosin, pentaerythritol ester of wood rosin, glycerol ester of partially dimerized rosin, glycerol ester of polymerized rosin, glycerol ester of tall oil rosin, glycerol ester of wood rosin, glycerol ester of partially hydrogenated wood rosin and partially hydrogenated methyl ester of rosin; and terpene resins, for example polyterpene and polymers of α-pinene or β-pinene.

7. A chewing gum composition according to any preceding claim, wherein the vinyl, polymer is polyvinyl acetate which is present to an extent of from 5% to 45%, preferably 7% to 35%, by weight of the gum base.

8. A chewing gum composition according to any preceding claim, wherein the glyceryl monostearate is present to an extent of from 1% to 15%, preferably 3% to 9%, by weight of the gum base.

9. A chewing gum composition according to any preceding claim, wherein the wax is present to an extent of from 2% to 25%, preferably 2.5% to 20%, by weight of the gum base.

10. A chewing gum composition according to any preceding claim, wherein the wax is chosen from: microcrystalline wax, paraffin wax and mixtures thereof.

11. A chewing gum composition according to Claim 10, wherein the microcrystalline wax is present in an extent of from 5% to 20% and the paraffin wax is present to an extent of from 3% to 15%, both by weight based on the weight of the gum base.

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12. A chewing gum composition according to any preceding claim, wherein the flavouring agent is chosen from one or more of the following: a natural flavouring agent, preferably a natural oil; and a synthetic flavouring agent, preferably a synthetic oil.

13. A chewing gum composition according to Claim 11, wherein the flavouring agent is chosen from one or more of the following: peppermint oil, spearmint oil, cinnamon oil, oil of wintergreen, bubble flavour and fruit flavours.

14. A chewing gum composition according to any preceding claim, further comprising one or more of the following: natural or synthetic gums, sweeteners, fillers and colouring agents.

15. A chewing gum composition according to Claim 14, wherein the sweetener is chosen from one or more of the following: water-soluble sweeteners, water-soluble artificial sweeteners and dipeptide based sweeteners.

16. A process for preparing a flavoured chewing gum composition, which process comprises admixing a chewing gum base at a temperature in the range from 70°C to 120°C with a flavouring agent, continuing the mixing until a uniform mixture of gum base and flavouring is obtained and, thereafter, forming the mixture into suitable chewing gum shapes, the flavouring agent comprising an artificial, natural or synthetic oil and the chewing gum base being prepared from an elastomer mixture which is present in an amount of from 0.5% to 30% by weight of the chewing gum base; an elastomer solvent, a vinyl polymer, glyceryl monostearate, and one or more waxes;

characterised in that the elastomer mixture is essentially free from styrene-butadiene copolymer elastomer and comprises from 2 to 12%, by weight of the chewing gum base, of an isobutylene-isoprene copolymer and from 2 to 20%, by weight of the chewing gum base, of a polyisobutylene, the total elastomer content employed not exceeding 30% by weight of the chewing gum composition; and in that the elastomer solvent is present is an amount no less than 23% by weight of the chewing gum base.

17. A process according to Claim 16, wherein the chewing gum base contains:

in the range from 0.5% to 30% by weight non-SBR elastomer comprising a mixture of isobutylene isoprene copolymer and polyisobutylene having a molecular weight of from 37,000 to 87,000 preferably to 80,000;

in the range from 23% to 55% by weight of an elastomer solvent;

in the range from 5% to 45% by weight polyvinylacetate;

in the range from 1% to 15% by weight glyceryl monostearate emulsifier; and

in the range from 2% to 25% by weight waxes: all the weight being based on the weight of the gum base.

Patentansprüche

1. Kaugummi-Zusammensetzung mit erweiterter Aroma-Geschmacks-Stabilität und verbesserter Resistenz gegen Auto-Oxydation, welche

a. einen Aromastoff; und

b. eine Kaugummi-Grundmasse, bestehend aus einer Elastomer-Mischung in der Grössenordnung von 0.5% bis 30% bezogen auf das Gewicht der Kaugummimasse; ein Wachs; ein Elastomer-Lösungsmittel; ein Vinyl-Polymer; und ein Glyceryl-Monostearate;

enthält, dadurch gekennzeichnet, dass die Elastomer-Mischung im wesentlichen frei von Styrol-Butadien-Mischpolymer ist und bezogen auf das Gewicht der Kaugummi-Grundmasse, 2% bis 12% eines Isobutylen-Isopren-Mischpolymers und 2% bis 20% Polyisobutylen enthält, wobei der gesamte Elastomer-Gehalt nicht grösser als 30 Gewichtsprozent der Kaugummimasse ist; und dass, bezogen auf das Gewicht der Kaugummi-Grundmasse, nicht mehr als 23% Elastomer-Lösungsmittel vorhanden ist.

2. Kaugummi-Mischung nach Anspruch 1, die, bezogen auf das Gewicht der Mischung, 0,05% bis 3.0%, vorzugsweise 0.3% bis 1.5% oder noch besser 0.7% bis 1.2% Aroma-Mittel enthält.

3. Kaugummi-Mischung nach Anspruch 1 oder 2, die, bezogen auf das Gewicht der Mischung, 5% bis 45% Kaugummi-Grundmasse, aufweist.

4. Kaugummi-Mischung nach Anspruch 1, 2, oder 3, die, bezogen auf das Gewicht der Kaugummi-Grundmasse, 5% bis 20% Elastomer-Mischung aufweist.

5. Kaugummi-Mischung nach einem der vorangenden Ansprüche, bei der das Polyisobutylen ein Molekulargewicht im Bereich von 37000 bis 87000 hat.

6. Kaugummi-Mischung nach einem der vorangehenden Ansprüche, die bezogen auf das Gewicht der Kaugummi-Grundmasse, nicht mehr als 55% Elastomer-Lösungsmittel aufweist und vorzugsweise aus einer oder mehreren der folgenden Substanzen besteht:

Pentaerythrit-Ester von teilweise hydriertem Baumharz, Pentaerythriol-Ester von Baumharz, Glyzerin-Ester von teilweise dimerisiertem Harz, Glyzerin-Ester von Tallol-Harz, Glyzerin-Ester von Baumharz, Glyzerin-Ester von teilweise hydriertem Baumharz und teilweise hydrierter Methyl-Ester von Harz; und Terpen-Harzen wie z.B. Polyterpen und Polymere von alpha-Pinen oder beta-Pinen.

7. Kaugummi-Zusammensetzung nach einem der vorangehenden Ansprüche, die als Vinyl-Polymer, bezogen auf dem Gewicht der Gummi-Grundmasse, 5% bis 45%, vorzugsweise 7% bis 35% Polyvinyl-Acetat aufweist.

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8. Kaugummi-Zusammensetzung nach einem der vorangehenden Ansprüche, die, bezogen auf des Gewicht der Gummi-Grundmasse, 1% bis 15%, vorzugsweise 3% bis 9% Glyzeryl-Monostearat aufweist.

9. Kaugummi-Zusammensetzung nach einem der vorangehenden Ansprüche, die, bezogen auf das Gewicht der Gummi-Grundmasse, 2% bis 25%, vorzugsweise 2.5% bis 20% Wachs aufweist.

10. Kaugummi-Zusammensetzung nach einem der vorangehenden Ansprüche, bei der das Wachs mikrokristalliners Wachs, Paraffinwachs oder eine Mischungen davon ist.

11. Kaugummi-Zusammensetzung nach Anspruch 10, die, je bezogen auf das Gewicht der Kaugummi-Grundmasse, 5% bis 20% mikrokristallines Wachs und 3% bis 15% Paraffinwachs aufweist.

12. Kaugummi-Zusammensetzung nach einem der vorangehenden Ansprüche, die ein oder mehreres der folgenden Aroma-Mittel aufweist: ein natürliches Aroma-Mittel, vorzugsweise ein Naturöl; und ein synthetisches Aromamittel, vorzugsweise ein synthetisches Oel.

13. Kaugummi-Zusammensetzung nach Anspruch 11, die eines oder mehrere der folgenden Aroma-Mittel aufweist, Pfefferminzöl, Grüne-Minzeöl, Zimtöl, Gaultheriaöl, Brause-Aroma und Frucht-Aromen.

14. Kaugummi-Zusammensetzung nach einem der vorangehenden Ansprüche, die weiter eines oder mehrere der folgenden aufweist: natürlicher oder synthetischer Gummi, Süssmacher, Füller und Farbstoff.

15. Kaugummi-Zusammensetzung nach Anspruch 11, die einen oder mehrere der folgenden Süssmacher aufweist: Wasserlösliche Süssmacher, wasserlösliche künstliche Süssmacher und Süssmacher auf der Basis von Dipeptiden.

16. Verfahren zum Herstellen einer aromatisierten Kaugummi-Zusammensetzung, welche umfasst: Mischen einer Kaugummi-Grundmasse mit einem Aroma-Mittel, bei einer Temperatur von 70°C bis 120°C, fortsetzen des Mischens bis die Mischung von Grundmasse und Aroma-Mittel gleichmässig ist, und dann formen der Mischung in geeignete Kaugummi-Stücke, wobei das Aroma-Mittel ein künstliches, natürliches oder synthetisches Oel und die Kaugummi-Grundmasse aus einem Elastomer-Gemisch von, auf das Gewicht der Kaugummi-Masse bezogen, 0,5% bis 30% besteht, und ein Elastomer-Lösungsmittel, eine Vinyl-Polymer Glyzeril-Monostearat und eine oder mehrere Wachse enthält,

dadurch gekennzeichnet, dass die Elastomer-Mischung weitgehend frei von Styrol-Butadien-Mischpolymer-Elastomer ist und bezogen auf das Gewicht der Kaugummi-Grundmasse je 2% bis 12% eines Isobutylen-Isopren-Mischpolymer und 2% bis 20% eines Polyisobutylen aufweist und der gesamte Elastomer-Gehalt, bezogen auf das Gewicht der Kaugummi-Zusammensetzung, nicht mehr als 30% beträgt, und dass, bezogen auf das Gewicht der Kaugummi-Grundmasse das Elastomer-Lösungsmittel nicht weniger als 30% ausmacht.

17. Verfahren nach Anspruch 16, bei dem die Kaugummi-Grundmasse enthält:

0.5% bis 30% Nicht-SBR-Elastomer, das eine Mischung von Isobutylen-Isopren-Mischpolymer und Polyisbutylen mit einem Molekulargewicht von 37000 bis 87000, vorzugsweise 80000;

23% bis 55% eines Elastomer-Lösungsmittels;

5% bis 45% Polyvinyl-Acetat;

1% bis 15% Glyzeryl-Monostearat-Emulsionsmittel; und

2% bis 25% Wachse; wobei alle Gewichte auf das Gewicht der Kaugummi-Grundmasse bezogen sind.

Revendications

1. Composition pour chewing-gum dont le goût et l'arôme ont une stabilité améliorée et qui présente une résistance accrue à l'auto-oxydation, cette composition comprenant:

(a) un agent aromatisant; et

(b) une base de chewing-gum comprenant un mélange d'élastomères dans une proportion pondérale de 0,5% à 30% de la base de chewing-gum; une cire; un solvant d'élastomères; un polymère vinylique; et du monostéarate de glycéryle;

caractérisée en ce que le mélange d'élastomères est essentiellement exempt d'élastomère copolymère styrènebutadiène et que la base de chewing-gum comprend de 2 à 12% en poids d'un copolymère isobutylène-isoprène et de 2 à 20% en poids d'un polyisobutylène, la proportion pondérale totale des élastomères utilisés n'excédant pas 30% de la composition de chewing-gum; et en ce que le solvant d'élastomères est présent en une proportion pondérale qui n'est pas inférieure à 23% de la base de chewing-gum.

2. Composition de chewing-gum selon la revendication 1, où l'agent aromatisant est présent en une proportion pondérale de 0,05% à 3,0% et, de préférence, de 0,3% à 1,5% ou, encore mieux, de 0,7% à 1,2% de la composition.

3. Composition de chewing-gum selon la revendication 1 ou 2, où la base de chewing-gum est présente en une proportion pondérale de 5% à 45% de la composition.

4. Composition de chewing-gum selon la revendication 1, 2 ou 3, où le mélange d'élastomères est présent en une proportion pondérale de 5% à 20% de la base de chewing-gum.

5. Composition de chewing-gum selon la revendication 1, 2, 3 ou 4, où le polyisobutylène a un poids moléculaire compris entre 37000 et 87000.

6. Composition de chewing-gum selon l'une quelconque des revendications qui précèdent, où le

solvant d'élastomères est présent en une proportion pondérale n'excédant pas 55% de la base de gomme et où cet élastomère est de préférence constitué d'un ou de plusieurs des composés suivants:

ester pentaérythritique de résine de bois de pin partiellement hydrogénée, ester pentaérythritique de résine de bois de pin, ester glycérique de colophane partiellement dimérisée, ester glycérique de colophane polymérisée, ester glycérique de "tall oil rosin", ester glycérique de résine de bois de pin, ester glycérique de résine de bois de pin partiellement hydrogénée, ester méthylique de colophane partiellement hydrogénée; et résines terpéniques comme par exemple le polyterpène et les polymères de 1α-pinène ou du β-pinène.

7. Composition de chewing-gum selon l'une quelconque des revendications qui précèdent, où le polymère vinylique est un polyvinylacétate qui est présent en une proportion pondérale de 5% à 45% et, de préférence, de 7% à 35% de la base de gomme.

8. Composition de chewing-gum selon l'une quelconque des revendications qui précèdent, où le monostéarate de glycéryle est présent en une proportion pondérale allant de 1% à 15% et, de préférence, de 4 à 9% de la base de gomme.

9. Composition de chewing-gum selon l'une quelconque des revendications qui précèdant, où la cire est présente en une proportion pondérale de 2% à 25% et, de préférence, de 2,5% à 20% de la base de gomme.

10. Composition de chewing-gum selon l'une quelconque des revendications qui précèdent, où la cire est choisie parmi les cires microcristallines, les cires de paraffine et leurs mélanges.

11. Composition de chewing-gum selon la revendication 10, où la cire microcristalline est présente en une proportion allant de 5% à 20% et la cire de paraffine est présente en une proportion allant de 3% à 15%, les pourcentages étant exprimés dans les deux cas en poids par rapport à la base de gomme.

12. Composition de chewing-gum selon l'une quelconque des revendications qui précèdent, où l'agent aromatisant est constitué d'un ou de plusieurs composés appartenant aux agents aromatisants naturels, de préférence aux huiles essentielles; et aux agents aromatisants synthétiques, de préférence aux huiles synthétiques.

13. Composition de chewing-gum selon la revendication 11, où l'agent aromatisant est constitué par un ou plusieurs des composés suivants: essence de menthe poivrée, essence de menthe verte, wintergreen, essence de cannelle, arôme pour bubble-gum et arômes de fruits.

14. Composition de chewing-gum selon l'une quelconque des revendications qui précèdent, comprenant en outre un ou plusieurs composés appartenant aux gommes naturelles ou synthétiques, aux édulcorants, aux charges et aux agents colorants.

15. Composition de chewing-gum selon la revendication 14, où l'édulcorant est constitué d'un ou de plusieurs composés appartenant aux édulcorants hydrosolubles, aux édulcorants hydro-solubles artificiels et aux édulcorants à base de dipeptides.

16. Procédé pour préparer une composition de chewing-gum aromatisée qui comprend de mélanger une base de chewing-gum à une température située entre 70°C et 120°C avec un agent aromatisant, de continuer à mélanger jusqu'à avoir un mélange homogène de base de gomme et d'agent aromatisant et ensuite, de donner au mélange de chewing-gum la forme voulue, l'agent aromatisant comprenant une essence artificielle, naturelle ou synthétique et la base de chewing-gum étant préparée à partir d'un mélange d'élastomères en une proportion pondérale de 0,5% à 30% de la base de chewing-gum, d'un solvant d'élastomères, d'un polymère vinylique, de monostéarate de glycéryle et d'une ou de plusieurs cires;

caractérisé en ce que le mélange d'élastomères est essentiellement exempt de l'élastomère copolymère styrène-butadiène et que la base de chewing-gum comprend de 2% à 12% en poids de copolymère isobutylène-isoprène et de 2 à 20% en poids de polyisobutylène, la proportion pondérale totale des élastomères n'excédant pas 30% de la composition de chewing-gum; et en ce que le solvant délastomère est présent en une proportion pondérale qui n'est pas inférieure à 23% de la base de chewing-gum.

17. Procédé selon la revendication 16, caractérisé en ce que la base de chewing-gum contient:

de 0,5% à 30% en poids d'élastomères sans SBR qui comprennant un mélange de copolymères isobutylèneisoprène et de polyisobutylène avec un poids moléculaire compris entre 37000 et 87000 ou, de préférence, 8000;

de 23% à 55% en poids d'un solvant d'elastomère;

de 5% à 45% en poids de polyvinylacétate;

de 1% à 15% en poids de l'émulsifiant monostéarate de glycéryle; et

de 2 à 25% en poids de cires; tous les pourcentages étant exprimés en poids par rapport au poids de base de gomme.