

A COMPOSITION FOR A POWDERED SWEETENED CONDENSED MILK

FIELD OF THE INVENTION

The present invention relates to the field of powdered sweetened
5 condensed milk, particularly a composition of sweetened condensed milk powder
having a longer shelf-life.

BACKGROUND OF THE INVENTION

Sweetened condensed milk, which is available in a semi-liquid form, is
10 made up of concentrated recombined milk powders, milk, and/or vegetable fat,
to which sugar is added to keep it fresh after pasteurization. The higher sugar
content is intended to provide a sufficiently high osmotic pressure to prevent the
growth of microorganisms that would cause product spoilage in the water content
and water activity range of the product.

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CN104904856A discloses a formulation of a flavoured condensed milk
powder. The flavoured condensed milk powder comprises fresh milk, sweetened
condensed milk, whey protein powder, and essences with a weight ratio of 80: 6
to 8: 1 to 3: 0.02 to 0.04. The flavoured condensed milk powder is manufactured
20 by the fresh milk cryoconcentration process. The method comprising blending of
white granulated sugar, spray drying fresh milk, and condensed milk, which
enables the product to produce a unique caramel flavor.

WO2006103210A1 discloses a reduced-calorie sweetened condensed
25 milk containing polyols and/or polydextrose and having shelf life stability equal to
standard sweetened condensed milk. The invention also relates to a method for
manufacturing a said product.

None of the above-mentioned prior arts discloses a more reliable
30 sweetened condensed milk and promoting handling convenience in powder
format for time-conscious people.

Accordingly, there is a need to provide sweetened condensed milk in powder form with maintained longer shelf-life stability and a method for manufacturing it.

5 SUMMARY OF THE INVENTION

It is an objective of the present invention to provide a powdered sweetened condensed milk which has a longer shelf life.

10 It is also an objective of the present invention to provide a method of producing the powdered sweetened condensed milk.

Accordingly, this objective may be achieved by following the teachings of the present invention.

15 The present invention discloses a composition for a powdered sweetened condensed milk characterized by sugar, milk solids, cream or creamer, flavourings, and anti-caking powder. A method of preparing a powdered sweetened condensed milk comprising the step of adding sugar, milk solids, cream or creamer, flavourings, and anti-caking powder in sequences, and dry
20 mixing the added ingredients for 20 to 600 seconds at the speed of 5 to 100 rpm.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

The manner in which the above recited features of the present invention can be understood in detail, a more particular description of the invention, briefly
25 summarized above, may have been referred by embodiments, some of which are illustrated in the appended drawings. It is to be noted, however, that the appended drawing illustrates only typical embodiments of this invention and are therefore not to be considered limiting of its scope, for the invention may admit to other equally effective embodiments.

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The features, benefits, and advantages of the present invention will become apparent by reference to the following text figure, with like reference numbers referring to like structures across the views, wherein:

Figure 1 is a flow chart of a method of preparing a powdered sweetened condensed milk in accordance to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

5 It should be understood that the detailed description thereto are not intended to limit the invention to the particular form disclosed, but on the contrary, the invention is to cover all modifications, equivalents, and alternatives falling within the scope of the present invention as defined by the appended claim. As used throughout this description, the words "a" or "an" mean "at least one".
10 Language such as "including," "comprising," "having," "containing," or "involving," and variations thereof, is intended to be broad and encompass the subject matter listed thereafter, equivalents, and additional subject matter not recited, and is not intended to exclude other additives, components, integers or steps. Likewise, the term "comprising" is considered synonymous with the terms
15 "including" or "containing" for applicable legal purposes. Any discussion of documents, acts, materials, articles and the like is included in the specification solely for the purpose of providing a context for the present invention. It is not suggested or represented that any or all of these matters form part of the prior art base or were common general knowledge in the field relevant to the present
20 invention.

 In this disclosure, whenever a composition or an element or a group of elements is preceded with the transitional phrase "comprising", it is understood that we also contemplate the same composition, element or group of elements
25 with transitional phrases "consisting of", "consisting", "selected from the group of consisting of, "including", or "is" preceding the recitation of the composition, element or group of elements and vice versa.

 In the following detailed description, the embodiment is provided so that
30 this disclosure will be thorough and complete and will fully convey the scope of the invention to those skilled in the art. Furthermore, numeric values and ranges are provided for various aspects of the implementations described. These values and ranges are to be treated as examples only, and are not intended to limit the scope of the claims. In addition, a number of materials are identified as suitable

for various facets of the implementations and are not intended to limit the scope of the invention.

The present invention is described hereinafter by various embodiments
5 with reference to the accompanying drawing, wherein reference numerals used in the accompanying drawing correspond to the like elements throughout the description. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiment set forth herein. Rather, the embodiment is provided so that this disclosure will be thorough and
10 complete and will fully convey the scope of the invention to those skilled in the art. In the following detailed description, numeric values and ranges are provided for various aspects of the implementations described. These values and ranges are to be treated as examples only, and are not intended to limit the scope of the claims. In addition, a number of materials are identified as suitable for various
15 facets of the implementations. These materials are to be treated as exemplary, and are not intended to limit the scope of the invention.

Referring to the drawing, the invention will now be described in more detail.

20 The present invention discloses a composition for a powdered sweetened condensed milk characterized by sugar, milk solids, cream or creamer, flavourings, and anti-caking powder.

In accordance with an embodiment of the present invention, the milk solids
25 comprising but not limited to skim milk powder, whole milk powder, butter milk powder, whey powder, fat filled milk powder, other dairy powders singly or in a combination thereof.

In accordance with an embodiment of the present invention, the
30 flavourings comprising but not limited to alcohols, esters, ketones, pyrazines, phenolics, terpenoids or in a combination thereof. Further, the composition with added flavouring matches the taste profile of sweetened condensed milk in liquid format after being reconstituted. The taste chemical profile of sweetened condensed milk in a liquid format identified and allows retaining the same flavour

in the powdered sweetened condensed milk. The flavouring is added because, without the flavouring, the taste would not be achieving the same taste as the liquid form of sweetened condensed milk due to the different production methods that possibly affect the taste matching with the liquid form of the sweetened condensed milk.

In accordance with an embodiment of the present invention, the anti-caking powder is selected from tricalcium phosphate, silicon dioxide, magnesium carbonate or in a combination thereof. The anti-caking powder is an additive to prevent formation of lumps and ensure the composition in dry and free-flowing. Other anti-caking powder that is available for food product may be used to substitute the tricalcium phosphate, silicon dioxide and magnesium carbonate.

In accordance with an embodiment of the present invention, the powdered sweetened condensed milk comprises water content of 2% to 15%.

In accordance with an embodiment of the present invention, the powdered sweetened condensed milk comprises water activity of 0.1 to 0.8.

In accordance with an embodiment of the present invention, the powdered sweetened condensed milk has a shelf-life of 12 to 24 months.

In accordance with an embodiment of the present invention, the composition comprising 35 to 70% of said sugar.

In accordance with an embodiment of the present invention, the composition comprising 10 to 50% of milk solids.

In accordance with an embodiment of the present invention, the composition comprising 10 to 20% of the cream or creamer.

In accordance with an embodiment of the present invention, the composition comprising 0.02 to 4% of the flavourings.

In accordance with an embodiment of the present invention, the composition comprising 0.05 to 0.2% of the anti-caking powder.

The present invention discloses a composition for a powdered sweetened condensed milk characterized by sugar, milk solids, cream or creamer, flavourings, and anti-caking powder. A method of preparing a powdered sweetened condensed milk comprising the step of adding sugar, milk solids, cream or creamer, flavourings, and anti-caking powder in sequences (101), and dry mixing the added ingredients for 20 to 600 seconds at the speed of 5 to 100 rpm (102). The process flow is shown in figure 1.

In accordance with an embodiment of the present invention, the dry mixing (102) parameters ensure homogeneity delivering a balanced and rounded taste profile of sweetened condensed milk.

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Hereinafter, example of the present invention will be provided for more detailed explanation. The advantages of the present invention may be more readily understood and put into practical effect from these examples. However, it is also to be understood that the following examples are not to limit the scope of the present invention in any way.

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Table 1 shows the preparation of a powdered sweetened condensed milk.

Product	Milk solids (%)	Cream or Creamer (%)	Sugar (%)	Anti-caking powder (%)	Flavourings (%)
A	15	20	55	0.05	4
B	20	15	56	0.1	3
C	32	15	46	0.15	1
D	50	15	29	0.2	0.02

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Product A, B, C and D with different compositions are dry mixed for 20 to 600 seconds at the speed of 5 to 100 rpm. Further, table 1 showing the present invention composition in the different ratio in % which to achieve the taste profile comparable with the liquid sweetened condensed milk.

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Various modifications to these embodiments are apparent to those skilled in the art from the description and the accompanying drawings. The principles associated with the various embodiments described herein may be applied to other embodiments. Therefore, the description is not intended to be limited to the
10 embodiments shown along with the accompanying drawings but is to be providing broadest scope of consistent with the principles and the novel and inventive features disclosed or suggested herein. Accordingly, the invention is anticipated to hold on to all other such alternatives, modifications, and variations that fall within the scope of the present invention and appended claims.

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CLAIMS

1. A composition for a powdered sweetened condensed milk characterized by sugar, milk solids, cream or creamer, flavourings, and anti-caking powder.
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2. The composition as claimed in claim 1, wherein said anti-caking powder is selected from tricalcium phosphate, silicon dioxide, magnesium carbonate or in a combination thereof.
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3. The composition as claimed in claim 1, wherein said powdered sweetened condensed milk comprises water content of 2% to 15%.
4. The composition as claimed in claim 1, wherein said powdered sweetened condensed milk comprises water activity of 0.1 to 0.8.
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5. The composition as claimed in claim 1, wherein the powdered sweetened condensed milk has a shelf-life of 12 to 24 months.
6. The composition as claimed in claim 1, wherein said composition comprising 35 to 70% of said sugar.
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7. The composition as claimed in claim 1, wherein said composition comprising 10 to 50% of milk solids.
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8. The composition as claimed in claim 1, wherein said composition comprising 10 to 20% of the cream or creamer.
9. The composition as claimed in claim 1, wherein said composition comprising 0.02 to 4% of the flavouring.
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10. The composition as claimed in claim 1, wherein said composition comprising 0.05 to 0.2% of the anti-caking powder.

11. A method (100) of preparing a powdered sweetened condensed milk of claim 1, the method (100) comprising the steps of:
adding sugar, milk solids, cream or creamer, flavourings and anti-caking powder in sequences (101); and
5 dry mixing the added ingredients for 20 to 600 seconds at the speed of 5 to 100 rpm (102).