

REPUBLIC OF SOUTH AFRICA  
PATENTS ACT, 1978

FORM P.8  
(to be lodged in duplicate)

A&A Ref: 143289

PUBLICATION PARTICULARS AND ABSTRACT  
(Section 32(3)(a) - Regulations 22(1)(g) and 31)

21	01	PATENT APPLICATION NO	22	LODGING DATE	43	ACCEPTANCE DATE
----	----	-----------------------	----	--------------	----	-----------------

2001/1918

7 March 2001

7.3.2002

51	INTERNATIONAL CLASSIFICATION	NOT FOR PUBLICATION
----	------------------------------	---------------------

A21D A23G

CLASSIFIED BY: ISA

71	FULL NAME(S) OF APPLICANT(S)
----	------------------------------

Société des Produits Nestlé S.A.

72	FULL NAME(S) OF INVENTOR(S)
----	-----------------------------

CONTI, Claudia

MOPPETT, Garry Dean

EARLIEST PRIORITY CLAIMED	COUNTRY		NUMBER		DATE	
	33	GB	31	9819564.7	32	8 September 1998

NOTE: The country must be indicated by its International Abbreviation - see schedule 4 of the Regulations

54	TITLE OF INVENTION
----	--------------------

Sugar wafers

57	ABSTRACT (NOT MORE THAN 150 WORDS)
----	------------------------------------

NUMBER OF SHEETS	31	41
------------------	----	----

The sheet(s) containing the abstract is/are attached.

If no classification is furnished, Form P.9 should accompany this form.

~~The figure of the drawing to which the abstract refers is attached.~~

**(57) Abstract**

A sugar wafer and a sugar wafer batter in which part of the wheat flour is replaced by cereal grits or all or part of the sucrose is replaced by a reducing sugar as well as confectionery products comprising them.

5 **WAFERS****FIELD OF THE INVENTION**

10 The present invention relates to wafers, more particularly to sugar wafers and processes of preparing them.

**BACKGROUND OF THE INVENTION**

15 Wafers are normally made from batter recipes using from about 20% to 60% by weight of flour, water and sucrose (which may be brown or white) together with smaller quantities of one or more ingredients typically used in a sugar wafer such as fat, milk, cream, milk powder, whole egg, egg powder, soya flour, salt, lecithin, colourant, cocoa powder, flavours, emulsifiers, vanilla crystals and a raising agent. The flour is usually wheat flour but it may be another flour such as 20 rice flour or a flour admixed with a starch. Wafers usually have a low fat content, normally from 1-2% but in some cases up to 10% and the main function of the fat is as an antisticking/releasing agent. Sugar wafers differ from standard wafers in containing a higher sugar content, e.g. from about 40% to 70% compared with less than 5% for standard wafers.

25 Wafers may be distinguished from biscuits/cookies in that wafers are the result of baking a batter whereas biscuits/cookies are baked out of a dough. Batter normally has a water content of more than 100 parts per 100 parts of flour and is a liquid suspension that will flow through a pipe whereas biscuit dough is rather stiff to 30 permit rolling and flattening and has a water content of less than 50 parts per 100 parts of flour.

35 A major problem with standard sugar wafers is that they tend to lose their crispiness with time by absorbing moisture which softens them and therefore lose their characteristic desirable textural properties. After baking the batter, there is only a limited amount of time, usually up to about 40 seconds, during which the wafers stay sufficiently flexible to allow further processing, such as modifying the shape or filling a tubular shaped wafer.

5 DATABASE WPI Section Ch, Week 199624 Derwent Publications Ltd., London  
GB; Class D11, AN 1996-232976 XP002122523 & HU 70 252 A  
(INTERKOLLOID ELELMISZERIPARI ADALEKANYAG), 28 September 1995  
(1995-09-28) discloses baked wafer biscuits containing no sugar and containing  
inter alia dextrose, powder or liquid starch syrup and corn flour.

10 DE 196 48 506 C discloses baked wafer biscuits containing inter alia wheat flour,  
sugar and invert sugar syrup.

15 B.MANUHARKUMAR ET AL.: "Mischimehle mit indischen Mais für die  
Herstellung von Mürbkeks und Flachwaffeln" GETREIDE MEHL UND BROT.,  
vol 32, no.5, 1978, pages 121-124, XP000853547 BOCHUM., DE ISSN:  
03674177 discloses flat wafers containing 25% and 50% added maize meal, the  
particle size being from 100-150 microns.

C.D.BARNETT: "Colombina - South American plant utilizes raw materials"  
CANDY AND SNACK INDUSTRY, vol 38, no.2, 1973, pages 30-32,  
XP000853527 discloses the use of corn syrup in sugar wafer sandwich.

## SUMMARY OF THE INVENTION

5 We have found that by replacing part of the wheat flour in a wafer batter by cereal grits and replacing all or part of the sucrose with a reducing sugar, we can obtain a sugar wafer that is sufficiently flexible over a longer period of time when compared with standard sugar wafers to allow further processing while retaining its characteristic desirable crispiness when cooled. In addition, we can obtain a sugar wafer which is harder, is more crunchy and has a more coarse and gritty texture  
10 than a conventional sugar wafer.

15 According to the present invention, there is provided a sugar wafer batter in which part of the wheat flour is replaced by cereal grits and all or part of the sucrose is replaced by a reducing sugar.

## DETAILED DESCRIPTION OF THE INVENTION

20 The cereal grits may be, for instance, corn grits, maize grits, wheat grits, oat grits or rice grits, etc. or any combination of two or more thereof.

25 The amount of water in the sugar wafer batter of the present invention is usually from 100 to 160 parts and more preferably from 120 to 140 parts by weight per 100 parts by weight of the flour or, where part of the wheat flour is replaced by cereal grits, per 100 parts of the total weight of the wheat flour and cereal grits.

30 The amount of sucrose or, where all or part of the sucrose is replaced by a reducing sugar, the total amount of sucrose and reducing sugar in the sugar wafer batter of the present invention is usually from 50 to 100 parts and more preferably from 60 to 85 parts by weight per 100 parts by weight of the flour or, where part of the wheat flour is replaced by cereal grits, per 100 parts of the total weight of the wheat flour and cereal grits.

35 In a first embodiment of this invention, up to 90% by weight of the wheat flour in a standard sugar wafer batter may be replaced by the cereal grits but preferably from 20% to 60% and more preferably from 25% to 45% by weight of the wheat flour may be replaced by the cereal grits.

## AMENDED SHEET

Corn grits are also known as corn meal which is a ground product obtained by dry milling the endosperm of corn. The particle sizes typically vary from about 100 microns to about 1mm, and more usually from 150 to 500 microns.

5

Alternatively, in a second embodiment of this invention, all or part of the sucrose in a standard sugar wafer batter may be replaced by a reducing sugar. For example, from 15 to 80% by weight of the sucrose may be replaced by the reducing sugar but preferably from 20% to 50% and more preferably from 25% to 10 40% by weight of the sucrose may be replaced by the reducing sugar. The reducing sugar may be, for example, fructose, glucose, glucose syrup, dextrose, corn syrup, invert sugar, fruit juices containing reducing sugars such as grape juice, or honey.

15

The sugar wafers may be prepared by baking a sugar wafer batter according to the invention as hereinbefore described. The sugar wafer batter may be baked by conventional methods, for example, using a baking oven, a baking machine, a moulding cone, baking plates, or on the surface of a sugar wafer drum well known to those skilled in the art to give the sugar wafer. The baking temperature may be 20 from 140°C to 180°C, preferably from 150°C to 170°C and more usually from 160°C to 165°C. The baking may be carried out over a period of from 0.5 to 2 minutes and preferably from 0.75 to 1.5 minutes.

20

25

Accordingly, the present invention also provides a sugar wafer in which part of the flour is replaced by cereal grits and all or part of the sucrose is replaced by a reducing sugar.

30

The amount of water in the sugar wafer according to the present invention is usually from 0.5% to 6% and preferably from 0.75 to 3% by weight based on the total weight of the sugar wafer.

The remaining ingredients of the sugar wafer according to the present invention, based on the weight of the wheat flour or, where part of the wheat flour is

35

replaced by cereal grits, per 100 parts of the total weight of the wheat flour and cereal grits, remain substantially the same.

5 The total amount of water, fat, wheat flour and sucrose together with their replacements in the sugar wafer usually accounts for at least 95%, e.g. from 96% to 98% by weight of the sugar wafer. The remaining ingredients include one or more ingredients typically used in a sugar wafer such as milk, cream, milk powder, whole egg, egg powder, soya flour, salt, lecithin, a colourant such as caramel colour, cocoa powder, flavours, emulsifiers, vanilla crystals and a raising agent.

10 The sugar wafers according to the present invention may have a variety of shapes and sizes, e.g. they may be flat sheets, cup or cone-shaped or they may be tubular. If desired, the sugar wafers may be further processed after baking, e.g. they may be crimped, pressed or shaped in a mould. They may be used in a variety of 15 confectionery products together with confectionery materials such as ice creams or chocolates or other fatty materials such as fat-based cream. The tubular wafers may be filled with confectionery materials preferably of low water activity so that a minimum of moisture migration occurs, e.g. savoury filling, ice cream or fat-based creams containing yoghurt. The sugar wafers of the present invention are sufficiently flexible under ambient conditions after baking for more than 40 20 seconds, usually for more than 50 seconds, e.g. up to 70 seconds or more to enable further processing.

25 The present invention further provides a confectionery product comprising a sugar wafer according to the present invention together with a confectionery material.

30 The sugar wafer may be used in direct contact with confectionery material or, if desired, a moisture barrier may be used between the surface of the sugar wafer and the other confectionery material, e.g. the moisture barrier may conveniently be coated on the surface of the sugar wafer adjacent the confectionery material. Any conventional food-acceptable moisture barrier may be used, but preferably a fat-based moisture barrier such as chocolate or chocolate substitute may be used.

When the confectionery product comprising the sugar wafer is used in direct contact with a confectionery material, the confectionery material preferably has a low water activity, e.g. a water activity below 0.5 and preferably below 0.3.

5 The confectionery product comprising the sugar wafer may, if desired, be enrobed with another suitable confectionery material, for example, with plain, white or milk chocolate or with chocolate substitute.

10 The confectionery product comprising the sugar wafer may be refrigerated or frozen.

#### EXAMPLES

15 The following Examples further illustrate the present invention

##### Example 1

A sugar wafer batter is prepared having the following ingredients:

20	Water	41.8%
	Wheat flour	19.4%
	Corn grits	12.9%
	Brown sugar	15.3%
	Honey	7.9%
25	*Other ingredients	2.7%

\*includes milk powder, egg powder, soya flour, salt, lecithin and vanilla crystals.

30 The above batter is fed as a suspension onto the surface of a drum of a wafer baking machine and baked at 162°C for 1 minute to form a wafer sheet having a water content of below 5% by weight. The wafer sheet is then passed to a spindle and rolled to form a tube. The tube is filled with a fat-based cream containing yoghurt, closed at each end and shaped mechanically as desired. The wafer is sufficiently flexible over a period of 60 seconds after baking which allows this further processing. The tube is finally enrobed with a layer of plain chocolate.

#### AMENDED SHEET

The product is then refrigerated.

On eating, a panel of seven expert tasters found that the wafer was harder, more crunchy and had a more coarse and gritty texture than a conventional sugar wafer.

5 These findings were supported by mechanical and sensory analysis.

Immediately after baking, the sugar wafer was found to remain flexible for over 100 seconds which is significantly longer than a standard wafer. In addition the cooling rate was reduced compared with a standard wafer, and the temperature at 10 which the wafer became brittle was also reduced to 77°C compared with 93°C for a standard wafer.

## CLAIMS

1. A sugar wafer batter in which part of the wheat flour is replaced by cereal grits and all or part of the sucrose is replaced by a reducing sugar.  
5
2. A sugar wafer batter according to claim 1 wherein cereal grits are corn grits, maize grits, wheat grits, oat grits or rice grits, or any combination of two or more thereof.  
10
3. A sugar wafer batter according to claim 1 in which the amount of water in the sugar wafer batter of the present invention is from 100 to 160 parts by weight per 100 parts by weight of the flour or, where part of the wheat flour is replaced by cereal, per 100 parts of the total weight of the wheat flour and cereal grits.  
15
4. A sugar wafer batter according to claim 1 in which the amount of sucrose or, where part of the sucrose is replaced by a reducing sugar, the total amount of sucrose and reducing sugar in the sugar wafer batter is from 50 to 100 parts by weight per 100 parts by weight of the flour or, where part of the wheat flour is replaced by cereal grits, per 100 parts of the total weight of the wheat flour and cereal grits.  
20
5. A sugar wafer batter according to claim 1 in which up to 90% by weight of the wheat flour in a standard sugar wafer batter is replaced by the cereal grits.  
25
6. A sugar wafer batter according to claim 1 in which from 15% to 80% by weight of the sucrose is replaced by the reducing sugar.  
30
7. A sugar wafer batter according to claim 1 in which the reducing sugar is fructose, glucose, glucose syrup, dextrose, corn syrup, invert sugar, fruit juices containing reducing sugars such as grape juice, or honey.  
35
8. A process for preparing a sugar wafer which comprises baking a sugar wafer batter according to claim 1.

9. A sugar wafer in which part of the wheat flour is replaced by cereal grits and all or part of the sucrose is replaced by a reducing sugar.
10. A sugar wafer according to claim 9 in which the amount of water in the sugar wafer is from about 0.5% to 6% by weight based on the total weight of the sugar wafer.
11. A sugar wafer according to claim 9 in which the total amount of water, fat, wheat flour and sucrose together with their replacements accounts for at least 95% by weight of the sugar wafer and the remaining ingredients include one or more of milk, cream, milk powder, whole egg, egg powder, soya flour, salt, lecithin, vanilla crystals and a raising agent.
12. A confectionery product comprising a sugar wafer according to claim 9 together with a confectionery material.
13. A confectionery product according to claim 12 wherein the sugar wafer is used in direct contact with confectionery material.
- 20 14. A confectionery product according to claim 12 wherein a moisture barrier is used between the surface of the sugar wafer and the other confectionery material.
- 25 15. A confectionery product according to claim 14 wherein the moisture barrier is coated on the surface of the sugar wafer adjacent the confectionery material.
16. A confectionery product according to claim 13 wherein when the sugar wafer is used in direct contact with a confectionery material, the confectionery material has a water activity below 0.5.
- 30 17. A confectionery product according to claim 12 wherein the confectionery product comprising the sugar wafer is enrobed with plain, white or milk chocolate or with chocolate substitute.
- 35 18. A batter as claimed in claim 1, substantially as herein described and

illustrated.

19. A process as claimed in claim 8, substantially as herein described and  
illustrated.

5

20. A wafer as claimed in claim 9, substantially as herein described and  
illustrated.

10  
21. A product as claimed in claim 12, substantially as herein described and  
illustrated.

22. A new batter, a new process for preparing a wafer, a new wafer, or a new  
product, substantially as herein described.