

(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets

(11)

Publication number:

**0 374 301  
A1**

(12)

## EUROPEAN PATENT APPLICATION

(21)

Application number: **88121563.6**

(51)

Int. Cl.<sup>5</sup>: **B65D 81/26, H05B 6/64**

(22)

Date of filing: **23.12.88**

(43)

Date of publication of application:  
**27.06.90 Bulletin 90/26**

(64)

Designated Contracting States:  
**AT BE CH DE ES FR GB GR IT LI LU NL SE**

(71)

Applicant: **FRISCO-FINDUS AG**  
**Industriestrasse**  
**CH-9400 Rorschach(CH)**

(72)

Inventor: **Olofsson, Mats**  
**Langgatan 10**  
**S-265 00 Astorp(SE)**  
Inventor: **Vadehra, Dharam Vir**  
**72, Old Farms Lane**  
**New Milford, Conn. 06776(US)**  
Inventor: **Rohner, Erich**  
**Boketoftavagen 6**  
**S-260 50 Billesholm(SE)**

(54)

**Packaged product.**

(57)

A packaged food composition which comprises a package containing a foodstuff and a desiccant.

**EP 0 374 301 A1**

### Packaged product

The present invention relates to a packaged composition comprising a foodstuff and a desiccant.

A major problem with chilled or frozen food products where a part or the whole product should be crispy after heating for consumption, such as coated meat or fish products is the migration of water from a part of the product with a high water content to a part with a low water content during storage e.g. from the fish or meat to the coating in frozen or chilled coated fish or meat portions. When such products are heated for consumption in an oven they become undesirably mushy and this problem is particularly noticeable when the heating is carried out in a microwave oven. As a microwave oven cannot crisp and brown a product, the parts of the product which should be crispy and crunchy become soft and soggy. While it is possible to use special susceptors or browning dishes in microwave ovens to make the product crispy or brown, this may not only be inconvenient and expensive for the consumer, it can cause problems and can be dangerous.

We have found that if a desiccant is packed together with such a foodstuff so that the excess water is absorbed by the desiccant rather than the parts of the foodstuff which should retain a low water content, when the foodstuff is subsequently reheated for consumption, a very desirable crispy texture can be obtained.

Accordingly, the present invention provides a packaged food composition which comprises a package containing a foodstuff and a desiccant.

The foodstuff may be any processed food product suitable for deep-freezing or chilling where a part or the whole of the food product should be crispy after heating for consumption especially in a microwave oven. Examples of suitable foodstuffs are coated products such as battered and breaded products (e.g. fish, poultry, meat), pancakes, gratins, pies and filled bakery products. In addition to batter and breadcrumbs, suitable coating materials may be, for instance, pasta, rice and cheese (e.g. gratins).

The desiccant, which may be edible, may be any food-acceptable desiccant, for example, silica gel, calcium chloride glucomannan, sodium acrylate, silicon dioxide, bentonite, preferably in finely divided particulate form, or it may be another foodstuff which acts itself as a desiccant such as a specially designed sauce premix which becomes a real sauce by absorbing water during storage. The amount of desiccant may vary widely depending on numerous factors such as the type of desiccant, type of products, storage temperature, desired

shelf life. Generally the amount of desiccant is from 5 to 80% by weight and more usually from 10 to 60% by weight based on the weight of the food product.

The desiccant may be in direct contact with the foodstuff in the package or it may be encapsulated in a microporous plastics sheet material the pore size of which renders it permeable to water vapour but impermeable to desiccant particles. Such microporous plastics materials are well known to those skilled in the art and may be made of a variety of plastics materials, for example, polyolefins, vinyl polymers, polyamides, polyurethanes or polyesters.

If desired, the foodstuff may be separated from the desiccant in the package by wrapping the foodstuff in a protective envelope such as sandwich paper.

The food product together with the desiccant may be packed in any conventional package suitable for storage under chilled or deep-frozen conditions and, if necessary, suitable for subsequent reheating in a microwave oven. The package should be water vapour-tight and may be a bag made of materials such as polyurethanes, polyolefins, polyesters or polyamides.

The packaged food composition after sealing, is preferably chilled or deep-frozen where the storage temperature is below +10°C and more usually from +8°C to -30°C.

The following Examples further illustrate the present invention.

#### Example 1

A breaded cod portion weighing 100 g and 30 g of finely divided silica gel (average particle size from 0.5 to 4 mm) in a microporous polyolefin pouch were deep-frozen and packaged in a pack suitable for deep freezing.

The pack was heat-sealed and stored for 3 months in a freezer and then the coated cod piece was thawed and heated for consumption in microwave oven. The heated product had a desirable crispy texture.

#### Example 2

A number of deep-frozen nugget-shaped breaded chicken portions weighing 190 g together with 60 g of silica gel in a microporous polyolefin pouch which is permeable only to water vapour were packed in a plastic bag made of polyester.

The pack was heat-sealed and stored in a freezer for 10 weeks after which the coated chicken pieces were thawed and reheated in a microwave oven. The heated product had a crispy coating while the chicken meat was juicy and has a nice texture. 5

## Claims

1. A packaged food composition which comprises a package containing a foodstuff and a desiccant. 10
2. A packaged food composition according to claim 1 wherein the foodstuff is suitable for chilling or deep-freezing and where a part or the whole of the food product should be crispy after heating for consumption. 15
3. A packaged food composition according to claim 1 wherein the foodstuffs are a battered or breaded meat, fish or poultry products, pancakes, gratins, pies or filled bakery products. 20
4. A packaged food composition according to claim 1 wherein the desiccant is silica gel.
5. A packaged food composition according to claim 1 wherein the amount of desiccant is from 5 to 80% by weight based on the weight of the foodstuff. 25
6. A packaged food composition according to claim 1 wherein the desiccant is in finely divided particulate form. 30
7. A packaged food composition according to claim 1 wherein the desiccant is encapsulated in a microporous plastics sheet material which is permeable to water vapour but impermeable to desiccant particles. 35
8. A packaged food composition according to claim 1 wherein the package is made of a water vapour-tight material.
9. A packaged food composition according to claim 1 wherein the package is suitable for subsequent reheating in a microwave oven. 40
- 10 A packaged food composition according to claim 1 which is chilled or deep-frozen. 45

50

55



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-2 994 404 (SCHIFFERLY) * Column 1, lines 7-21,42-49; figures 1-8 *	1,4	B 65 D 81/26 H 05 B 6/64
Y	---	2,3,7,9,10	
X	US-A-3 084 984 (ADLER) * Column 3, lines 9-36; figure 1 *	1,6	
X	US-A-2 789 369 (WALKER) * Column 1, lines 20-32; column 2, lines 18-60; figures 1,2 *	1,4	
Y	EP-A-0 294 983 (GENERAL MILLS INC.) * Page 2, lines 5-10; page 4, lines 30-50; page 5, lines 45-47; figures 4-7 *	2,3,9,10	
Y	GB-A-2 101 870 (MITSUBISHI GAS CHEMICAL CO.) * Page 2, lines 70-79; figures 1-3 *	7	
A	EP-A-0 271 268 (CONAGRA) * Page 2, line 55 - page 3, line 5; page 4, line 20 - page 5, line 3 *	1	TECHNICAL FIELDS SEARCHED (Int. Cl.5)  B 65 D H 05 B
A	EP-A-0 294 165 (MITSUI TOATSU CHEMICALS)		
A	EP-A-0 240 071 (UNILVER NV)		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 09-08-1989	Examiner BERRINGTON N.M.
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document  T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document			