

[54] Title: HERMETICALLY SEALED FULLY COOKED AND INSTANTLY  
READY TO EAT RICE, ITS VARIATIONS AND METHOD OF  
PREPARATION  
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[57] ABSTRACT (See attached sheet)

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The process for preparing sterilized, fully cooked and ready to eat rice in a hermetically sealed container which comprises pouring uncooked rice grains and water into a container, hermetically sealing such a container, cooking and sterilizing the container and contents in a retort vessel for at least 50 to 75 minutes at temperatures between 110 to 120 degrees celsius, cooling the container and thus cooked contents to a temperature of 40 degrees celcius and packing the product in cartons, said container is capable of being hermetically sealed and can withstand, without melting, temperatures up to 120 degrees celsius in a retort pressure vessel without loss of its aqueous and gaseous impermeability.

BAD ORIGINAL



HERMETICALLY SEALED FULLY COOKED AND INSTANTLY  
READY TO EAT RICE, ITS VARIATIONS AND METHOD OF  
PREPARATION

BUREAU OF PATENTS  
AND TECHNOLOGY

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This invention relates to an industrial product in  
the food processing industry. In particular, this  
invention relates to:

1. A product offering fully cooked and instantly ready  
to eat rice in a hermetically sealed container.  
Additionally, this invention also relates to several  
possible variations of this original concept, such as  
adding meats (i.e. beef, chicken, pork, etc.), and/or  
seafoods (i.e. squid, mussels, shrimp, tuna, etc)  
and/or mixed vegetables all prepared with different  
combinations of spices and seasonings.
2. The process for this invention's manufacture.

Such an invention can, therefore, provide FULL AND  
COMPLETE MEALS consisting of rice and viand (i.e. meat  
and/or seafood and/or vegetables) packed in hermetically  
sealed containers which allow storage for a minimum of TWO  
(2) YEARS WITHOUT SPOILAGE, at the same time, allowing  
the contents to remain INSTANTLY READY TO SERVE during  
such time. The enormous benefits that can be derived from  
such a product to a rice eating nation such as the  
Philippines will become apparent upon reading the  
specification and claims set forth hereunder.

This invention is hereby being pursued as an  
alternative to the practice of preparing and then storing  
full and complete meals consisting of rice or rice and

viand in metal, plastic, ceramic, or glass containers which serve as temporary storage media , with a maximum storage period of a few days, for consumption at a later time. In addition, this invention is also hereby being  
5 proposed as a useful and convenient substitute for the widely used practice of using "lunch boxes" or "baons".

This invention finds usefulness in that ready to eat rice can be stored for a minimum of two (2) years with no preservatives nor need for refrigeration. As described  
10 above, a variation of this invention can consist of cooked rice mixed with meat and/or vegetables and seasonings which will be able to provide ready to serve complete meals with minimal or no preparation at all. In light of the above, this invention will be able to supplant the  
15 time-consuming and troublesome exercise of meal preparation and subsequent storage for future consumption. The following advantages can be derived from the present invention:

1. Prolonged Storage Periods

20 Laboratory tests have indicated that the invention can be kept and stored for a minimum of TWO (2) YEARS, and precludes the use of any preservatives, and the need for refrigeration or freezing. On the other hand, the typical meal (i.e. rice and viand) when stored in plastic, metal,  
25 ceramic, or glass containers will not keep for more than a day (24 hours) under normal atmospheric conditions;

moreover, even if conventional preservation methods such as refrigeration or freezing are employed, spoilage still sets in within weeks. The present invention is the solution to this problem.

5           In addition, the extended keeping period does not compromise the taste, flavor, and aroma of the stored meal. The taste and flavor characteristics are retained as long as the meal is served within the prescribed keeping time.

10           2. Labor and Energy Saving

          The food product of the present invention will also garner the user several benefits in terms of time and energy savings. These will come in the form of reduced time and energy spent in marketing; picking and choosing  
15           ingredients for their quality, freshness, and other desired characteristics; preparations such as washing, peeling, slicing, marinating, flavoring and finally cooking and serving. Whereas a full meal consisting of rice and a viand will have to undergo all these steps for  
20           it to be suitable for consumption, the invention is instantly ready to serve by just opening the container.

          Energy savings on the other hand are derived in the form of lower fuel and power consumption because in contrast to meals prepared the traditional way, the  
25           invention will save the consumer the energy needed for refrigeration and cooking.

### 3. Health Benefits

The mode of storage of the invention is a hermetically sealed aqueous and gaseous impervious container such as this case, tin cans, plastic containers (blister packs), and retoratable pouches. This means that such a container is designed to be secured against the entry of microorganism and to maintain the commercial sterility of its contents. That is, the contents of such a container is completely insulated from ambient conditions, allowing such to be subjected to exposure to unsanitary elements such as mud or dirt, or even totally immersed in water, WITHOUT RISK OF CONTAMINATION. On the other hand, traditional storage mediums such as metal, plastic, glass, or ceramic containers used for lunch boxes cannot even provide protection from small insects much less microorganisms. Also, the above mentioned storage media are more resistant to breaking arising from incidental shocks (i.e. accidental dropping or hitting).

Moreover, the product of this invention is manufactured in strict adherence to internationally accepted good manufacturing practices which assures the quality of all the product's aspects ranging from the quality of the ingredients and raw materials to the adequacy of the thermal sterilization process thereby insuring eradication of all harmful microorganisms.. Furthermore, the invention is aimed at providing a balanced source of nutrition, with representative

ingredients from each basic food group, namely: carbohydrates (rice), proteins (meat or fish), vitamins and/or minerals (mixed vegetables).

#### 4. Convenience

5           It is apparent that the present invention provides much utility and is well suited to the fast paced lifestyles of this modern age. The recent decades have seen the advent of more and more dual income households wherein both husband and wife lead their own careers  
10           either due to force of financial circumstances or for the attainment of better standards of living. Such a society leaves little time available to attend to domestic chores, in particular, preparing meals for the children and other members of the family. Thus, the invention is  
15           ideal for everyday situations such as sit down meals, school or office lunches, afternoon and midnight snacks, outings and picnics, even during large gatherings such as meetings and conventions. Clearly, therefore, the invention proposes to provide a solution to the customary  
20           way of preparing complete meals which has become too time-consuming for the modern household. Also, during states of emergency and/or calamities such as wars, typhoons, earthquakes, this invention can serve as a store of nutrition and sustenance.

25           In summary, heretofore, there is no instantly ready to eat rice that is commercially produced and sold in the market that is stored in hermetically sealed containers

such as cans, retortable pouches, or plastic containers,  
which is pre-cooked and can be stored for prolonged  
periods without spoiling. Neither is there a commercial  
food product containing pre-cooked rice as the main  
5 ingredient mixed with meats (such as tuna, squid, shrimps,  
mussels, and other fishes and shell fishes) and/or  
vegetables and flavorings sufficient to supply a full and  
complete meal. It is therefore the main object of this  
invention to completely revolutionize the way meals are  
10 traditionally prepared and subsequently stored, in that  
the food product provides for a full and complete meal in  
and of itself at the same time, offering several salient  
advantages to the consumer namely: prolonged storage  
periods, labor and energy savings, health benefits, and  
15 convenience.

It is, therefore, apparent that tremendous utility  
can be derived from the present invention. The inventive  
merits, on the other hand, will become apparent upon  
reading the detailed description of the developmental  
20 process which led to such an invention to come about which  
is set forth hereunder.

Heretofore, attempts at preserving ready to serve full  
meals (i.e. rice and viand) for consumption at a later  
time has met with minimal success. This is mainly due to  
25 the difficulties met in preparing and then storing rice, a



5 food item that easily spoils, such that it retains all its edible qualities, at the same time suspend the onset of spoiling. Previous attempts by others have led to products such as microwable meals and dehydrated rice products. These products, although they have attained commercial viability, can not provide the consumer the same benefits and utility offered by the present invention.

		<u>PRODUCT DESCRIPTION</u>	<u>STORAGE REQUIREMENTS</u>	<u>PREPARATION REQUIREMENTS</u>
10	Microwable Meals	Frozen rice and viand	Freezing required	Microwave for 5 to 10 mins. Cook in oven for 10 - 15 mins.
15	Dehydrated Rice	Dehydrated rice and vegetables seasonings in separate pouch.	None/Ambient Conditions	Cook in boiling water for 10 - 15 mins.
	This Invention	Pre-cooked rice, meat, vegetables and seasonings.	None/Ambient conditions.	None/Ready to serve.

20

The above clearly indicates that the invention offers distinct advantages over other "processed rice" products. Moreover, it is only this invention which is able to provide a "full meal" (i.e. rice and viand), by the very definition of the term, which is ready to eat. The other

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"processed rice" products vary with the present invention on one fundamental aspect - the method of preservation - herein lies the secret of the invention. To prepare dehydrated rice, the liquid portion of cooked rice is first extracted by means of drying, the resulting product is then treated with antioxidants to arrest the spoiling process. For microwable rice, cooked rice is simply blast frozen and subsequently maintained at low temperatures. In marked contrast to the other rice products, to produce the invention model, UNCOOKED rice grains are placed into the container, water and other ingredients are added, as required, then hermetically sealed. The sealed container is then sterilized in a retort vessel at high pressures and temperatures. In this case, THE CONTAINER, THEREFORE, ACTS AS A MINIATURE PRESSURE COOKER OR RICE COOKER - STERILIZING AND COOKING THE RICE AFTER THE CONTAINER HAS BEEN VACUUM SEALED. Herein, therefore, lies the inventive merit of the present invention. The norms of food processing dictate that before food is vacuum sealed in a container, this food item must first be pre-cooked. The process in accordance with this invention is, thus, original and deviates from these conventions.

The container however must be of a character that it is capable of being hermetically sealed and can withstand without melting or altering its character, of being rigid after subjecting to heat of up to 120°C temperature and

without loss of its gaseous and aqueous impermeability.

5       The above manufacturing process is, thus, new in concept in the sense that it allows instantly ready to eat rice to be stored in hermetically sealed containers for extended periods (at least 2 years) at the same time achieving other ends such as convenience, quality and economy.

10       Other factor which are peculiar to this product include measuring the proportions of rice and water vis a vis the other ingredients. Applying the wrong proportions, will result in undesired rice grain texture (i.e. rice may be too hard and dry, or too wet and soggy). Also, each ingredient added to the rice and water mixture has a pronounced effect on the resulting cooked rice grain texture. Therefore, to achieve the desired texture, the correct rice to water proportions have to be employed. Furthermore, to achieve the extended shelf life of the invention model, the thermal cooking and sterilization process must be adequate to ensure eradication of spoilage-inducing microorganisms, this, again is a function of the chemical characteristics of the ingredients used. All these factors, which were extensively researched and analyzed, combine to make the present invention, technically, commercially, and economically feasible.

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The procedures are amply described in the detailed descriptions hereunder taken in conjunction with the lone appended drawing wherein:

FIGURE 1 is a block diagram step by step process of  
5 preparing fully cooked rice in a heremetically sealed  
container.

In order to manufacture hermetically sealed, pre-cooked, ready to eat rice, the following examples are set forth:

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EXAMPLE I

Method for Preparing pre-cooked Rice in 307 x 113  
(200 gram net weight) tin can.

(ingrdient amounts vary proportionally to can size)

With reference to Fig. 1, uncooked rice grains amounting to between 40 to 70 grams are poured (1) into a 307 x 113 sized tin can. About 40 to 30 to 60 grams of water are then poured into the tin can containing the rice grains and the stirred and thereafter hermetically sealed (2) and placed inside a retort vessel where it is cooked and sterilized (3) for 60 to 75 minutes at a temperature of 110 to 120 degrees celsius. The can is then cooled (4) until it attains a temperature of 40 degrees celsius, after which it is labelled and packed in cartons (5).

## EXAMPLE II

25 Method for Preparing Pre-cooked Rice in Retortable

## Pouches

(200 grams net weight)

Uncooked rice grains amounting to between 40 to 70 grams are poured into 200 gram net weight retort pouch. Water of about 30 to 60 grams is then filled into the pouch, after which the pouch is slightly pressed to expel excess air. Thereafter, the pouch is placed inside a retort vessel where it is cooked and sterilized for 50 to 75 minutes at temperatures of 110 to 120 degrees celsius. The pouch and contents are thereafter cooled to about 40 degrees celsius. Finally, the pouch is packed in cartons.

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### EXAMPLE III

#### Method for Preparing Pre-cooked Rice in Plastic Containers

(such as Polypropylene) with Saran or Nylon oxygen

#### Barriers

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(200 grams net weight)

Uncooked rice grains of about 40 to 70 grams are poured into the plastic container. The container is then filled with 30 to 60 grams of water after which, the container is vacuum sealed with Nylon or Saran sheets which serve as oxygen barriers. The container is then placed in a retort vessel where the contents are cooked and sterilized for 50 to 75 minutes at temperatures of 110 to 120 degrees celsius. The container and contents are thereafter cooled to 40 degrees celcius. Finally, the container is packed in cartons.

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#### EXAMPLE IV

Method for Preparing Pre-cooked Rice with Tuna and  
Mixed Vegetables prepared in Adobo Flavor Packed in  
a 307 x 113 size Tin Can

Uncooked rice grains amounting to between 40 to 70 grams  
are mixed with 25 to 35 grams of pre-cooked tuna loins,  
5 which have already been cleaned and then flaked, inside a  
standard size tin can. In a separate process, a spice  
composition approximating adobo taste and flavor is  
premixed. This consists of about 1.5 to 2.5 grams of  
salt, 1.0 to 1.5 grams of vegetable saps, 3 to 4 grams of  
10 sugar, 2.5 to 3.5 grams of vinegar, 3.5 to 5.0 grams of  
soy sauce, and one piece of bay leaf, all of which are  
mixed in with 45 to 60 grams of water and then stirred  
into a consistent sauce which is then poured in with the  
rice and tuna, thereby almost filling the can.  
15 The can containing the resulting food composition is then  
hermetically sealed and placed inside a retort vessel  
where, the food mixture is further cooked and sterilized  
at a temperature of 110 to 120 degrees celsius to 60 to 75  
minutes. The can is then cooled to a temperature of 40  
20 degrees celsius and subsequently packaged.

#### EXAMPLE V

Method for Preparing Pre-cooked Rice with Chicken  
and mixed Vegetables Prepared in Chicken flavor  
Packed in a 307 x 113 size Tin Can

25 Uncooked rice grains amounting to between 40 to 70 grams

are mixed with 25 to 35 grams of chicken, which have been cleaned, precooked, and chopped into bite size pieces, inside a standard size tin can. A pre-mixture of sliced vegetables is then added. This consists of 2 to 10 grams of carrots, 2 to 10 grams of potato, and 2 to 10 grams of green peas. in a separate process, a spice composition approximating chicken taste and flavor is premixed. This consists of about 0.5 to 7.5 grams of salt, 0.5 to 5 grams of MSG, 0.5 to 8 grams of hydrolyze vegetable protteins, and 2 to 15 grams of chicken flavored powder, all of which are then stirred into a consistent sauce, which is then poured in with the rice, chicken, and vegetable, thereby almost filling the can.

The can containing the resulting food composition is then hermetically sealed and placed inside a retort vessel where, the food mixture is further cooked and sterilized at temperature of 110 to 120 degress celsius for 60 to 75 minutes. The can is then cooled to a temperature of 40 degrees celsius and subsequently packaged.

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#### EXAMPLE VI

Method for Preparing Pre-cooked Rice with Beef  
and Mixed Vegetables Prepared in Beef Flavor Packed in  
a 307 x 113 size Tin Can

Uncooked rice grains amounting to between 40 to 70 grams are mixed with 25 to 35 grams of beef, which have been cleaned, pre-cooked, and choppsed into bite size pieces,

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inside a standard size tin can. A pre-mixture of sliced vegetables is then added. This consists of 2 to 10 grams of carrots, 2 to 10 grams of potato, and 2 to 10 grams of green peas. In a separate process, a spice composition approximating beef taste and flavor is premixed. This consists of about 0.5 to 7.5 grams of salt, 0.5 to 5 grams of MSG, 0.5 to 8 grams of hydrolyze vegetable proteins, and 20 to 15 grams of beef flavored powder, all of which are then stirred into a consistent sauce, which is the poured in with the rice, beef, and vegetable, thereby almost filling the can.

The can containing the resulting food composition is then hermetically sealed and placed inside a retort vessel where, the food mixture is further cooked and sterilized at temperature of 110 to 120 degrees celsius for 60 to 75 minutes. The can is then cooled to a temperature of 40 degrees celsius and subsequently packaged.

#### EXAMPLE VII

Method for Preparing pre-cooked Rice with Mixed Vegetable and Seafoods (specifically Shrimp, Squid, and Mussels) in Valenciana Flavor Packed in 307 x 113 size Tin Can

Uncooked rice grains amounting to between 40 to 70 grams are mixed with 10 to 15 grams of potato, 12 to 17 grams of carrots, 3 to 7 grams of green peas, and 3 to 7 grams of bell pepper. Seafoods consisting of 3 to 15 grams of mussels, 8 to 15 grams of squid, and 8 to 15 grams of shrimp which already been cleaned, pre-cooked, and chopped



in to bite size pieces are then mixed in with the other ingredients then poured into a tin can. In a separate process, a spice composition approximating valenciana flavor is premixed. This consists of about 1.5 to 2.5 grams of salt, 2 to 3 grams of sugar, 1 to 1.5 grams of vegetable saps, and 6.5 to 8.0 grams of tomato paste, all of which are mixed in with 45 to 60 grams of water and then stirred into a consistent sauce which is then poured in with rice, seafoods, and vegetables, thereby almost filling the can.

The can containing the resulting food composition is then hermetically sealed and placed inside a retort vessel where, the food mixture is further cooked and sterilized at temperature of 110 to 120 degrees celsius for 60 to 75 minutes. The can is then cooled to a temperature of 40 degrees celsius and subsequently packaged.

#### EXAMPLE VIII

Method for Preparing Pre-cooked Rice with Mixed Vegetable and Chicken Prepared in Chicken Flavorings Packed in a Retortable Pouch (200 grams net weight)

Uncooked rice grains amounting to between 40 to 70 grams are mixed with 25 to 35 grams of chicken, which have been cleaned, pre-cooked, and chopped into bite size pieces, inside a standard size pouch. A pre-mixture of sliced vegetables is then added. This consists of 2 to 10 grams of carrots, 2 to 10 grams of potato, and 2 to 10 grams of green peas. In a separate process, a spice composition

approximating chicken taste and flavor is premixed. This consists of about 0.5 to 7.5 grams of salt, 0.5 to 5 grams of MSG, 0.5 to 8 grams of hydrolyze vegetable proteins, and 2 to 15 grams of chicken flavored powder, all of which  
5 are then stirred into a consistent sauce, which is then poured in with the rice, chicken, and vegetable, thereby almost filling the pouch.

The pouch is then pressed to expel excess air inside, and subsequently sealed. Thereafter, it is placed in a retort  
10 vessel for 50 to 75 minutes subject to temperatures of 110 to 120 degrees celsius. The food product thus produced is cooled to a temperature of 40 degrees celsius. Finally, the pouch is packed in cartons.

It is important to note that in the described methods  
15 for preparing precooked rice mixed with meat, vegetables and spices, careful observation must be made in the mixture of uncooked rice grains to the correct proportions as each ingredient possesses characteristics which can materially alter the quality of the end product. Results  
20 of experiments show that best results are obtained when the proportions indicated in the examples are employed.

It is understood that the nature and scope of the protection which the herein inventor seeks to obtain is not limited to the description set forth above or to the  
25 claims below, as there are many other obvious variations which this inventor believes should be included as well.

CLAIMS:

1. The process for preparing sterilized, fully cooked, and ready to eat rice in a hermetically sealed container which comprises:
  - 5 a. Pouring uncooked rice grains and water into a container, said container being capable of being hermetically sealed and subjected to heat without melting under temperature of 120 degrees celsius and without loss of its aqueous and gaseous impermeability,
  - 10 b. Hermetically sealing such a container;
  - c. Cooking and sterilizing the container and contents in a retort vessel for at least 50 to 75 minutes; at temperatures between 110 to 120 degrees celsius;
  - 15 d. Cooling the container and thus cooked contents to a temperature of 40 degrees celsius;
  - e. And finally packing the resulting product in cartons.
2. The process as in claim 1 wherein the container is  
20 a tin can.
3. The process as in claim 1 wherein the container is a retortable pouch.
4. The process as in claim 1 wherein the container is a plastic container.

5. A food product comprising a container and contents consisting there within a hermetically sealed cooked, ready to eat rice.
6. A food product as claimed in claim 5 wherein  
5 the cooked rice is mixed with tuna, vegetables, and spices.
7. A food product as claimed in claim 5 wherein the cooked rice is mixed with chicken, vegetables and spices.
- 10 8. A food product as claimed in claim 5 wherein the cooked rice is mixed with pork, vegetables and spices.
9. A food product as claimed in claim 5 wherein the cooked rice is mixed with beef, vegetables and  
15 spices.
10. A food product as claimed in claim 5 wherein the cooked rice is mixed with seafoods such as mussels, squid, and shrimp vegetables and spices.

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