This invention relates to the use of a non-hygroscopic adhesive in packing and an improved method of packing edibles using non-hygroscopic adhesive which is applied on the entire length of both the margins of the packaging material till the end, wherein the breadth of the adhesive is usually around 1 cm. The edibles are wrapped by closely apposing the margins without any open surface. For additional safety, a paper packing of the edible can be made first before final packaging.
METHOD OF PACKING EDIBLES

FIELD OF THE INVENTION

The present invention relates to a method of packing edibles to prevent health concerns involved in the use of hygroscopic materials.

BACKGROUND OF THE INVENTION

It is observed that there are various problems with the current method of packing. Conventionally, edibles are packed using hygroscopic adhesive or glue. The disadvantage of using hygroscopic material is that it has a tendency to attract and hold water molecules from the surrounding environment. In addition, air tight packs of hygroscopic material containing edible food are also not moisture proof and the water gets absorbed and enters inside as damp spot. Some of the problems faced are that as water gets absorbed, the packaged contents get spoilt and becomes unsafe for consumption. Food spoilage can occur even when there are minor changes in relative humidity. Moisture condenses on the surface of the packaging material and water gets absorbed which results in many common food defects. The molding of grain, soggy cereals, and the lumping and caking of dry products like cake mixes and powders can result from excessive moisture. Other defects such as crystallization, motting and stickiness also occur. Moisture condensing on the surface of a food can also provide an environment for bacteria and molds to grow and multiply. Physical defects such as cracking, splitting and crumbling of solid foodstuffs occur when excessive moisture is lost from foods. Moreover, sometimes even the sealed margin of the packing partially opens on storage during rainy season. The packaged food also becomes less crispy during the rainy season.

Therefore, it is desirable to provide and develop an alternate and improved method of packing edibles, which is capable of addressing and overcoming the abovementioned disadvantages. Ideally, the packaging material should be durable enough and should also restrict the passage of water through it. Moreover, the packaging must also be resistant to leakage and corrosion. The proposed technique uses a non-hygroscopic material, which in addition to providing a suitable solution also improves the shelf life of the packaged product.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide an improved method of packing edibles, which improves shelf life of the product.

It is another object of the present invention to provide a method of packing edibles using non-hygroscopic material (e.g. epoxy and other synthetic adhesives) which is easily available.

In accordance with one aspect, the present invention, which achieves the objectives, relates to a method of packing edibles using a non-hygroscopic adhesive, which is applied on the entire length of the pack. Such a method of packing ensures safety of the package contents and prevents health concerns.

Yet another object of the invention is to address health issues concerning consumption of unsafe food due to use of hygroscopic adhesive in packaging material.
FIG. 5 illustrate the effect of water or moisture on a wall (501) painted with water soluble paint (0022.1). Initially, a damp spot (502) appears on the wall, which leads to development of cracks (503) on the wall. As cracks develop, flakes (504) of paint fall to the ground.

FIG. 6 illustrate the effect of moisture on the hygroscopic layer of adhesive, (601) shows how the water or moisture is absorbed through the margin of a pack of edible over weeks/months (0023.1) and causes the packing layers to open. The open flaps of packing layers (601A) and (601B) are caused due to the hygroscopic nature of the adhesive layer (601C) and a damp area (602) is formed on the adhesive layer which further leads to development of cracks (603) on adhesive layer (0023.2).

FIG. 7 illustrate a paper pack (701) containing trapped air. Such air tight packs containing edibles are also not moisture proof. This can be demonstrated by having a paper pack (701), as shown in FIG. 7, which are sealed on both ends, containing air inside. As shown in the figure, the water drop (702) gets absorbed and enters inside as damp spot (703). Any content inside will be affected by the moisture released from the damp spot, although the pack is air tight (0024.1).

From the above illustrations, it is clear that hygroscopic adhesive absorb moisture from the surrounding environment (0025.1). Water or moisture greatly affects the keeping qualities of food. Excessive moisture pickup can result in product spoilage and spoilage by microorganisms and chemical reactions (0025.2).

FIG. 8 illustrate a pack of edible with a non-hygroscopic adhesive (0026.1) in accordance with an exemplary embodiment (0026.2) of the present invention. The non-hygroscopic adhesive (801) and (802) is applied on the entire length of both the margins of the packaging material till the end, wherein the breadth (803) of the adhesive is usually around 1 cm. The edibles are wrapped by closely opposing the margins without any open surface (0026.3). For additional safety, a paper packing of the edible can be made first before final packaging as shown in the figure.

The use of non-hygroscopic adhesive therefore, improves the method of packaging and ensures safety of the contents inside. The non-hygroscopic adhesive does not absorb moisture (0027.1) and hence, is not affected by moisture content in the surrounding environment or by changes in humidity (0027.2).

The foregoing description is a specific embodiment of the present invention, it should be appreciated that this embodiment is described for purpose of illustration (0028.1) only and that numerous alterations and modifications may be practiced by those skilled in the art without departing from the spirit and scope of the invention (0028.2). It is intended that all such modifications and alterations be included insofar as they come within the scope of the invention as claimed or the equivalents thereof.

Considering the description cited in paragraph [001]-[0028] and FIGS. 1-8, present invention relates to the use of non-hygroscopic adhesive which is easily available (0005.1), to pack powdered (0002.5), solid (0002.8) edibles those are subject to extreme variations in temperature (0017.4), humidity (0002.3 and 0027.2) and are exposed to biological agents like bacteria (0002.6) and mold (0002.7) of the surrounding environment (0002.1 and 0020.1) in the process of handling, transport and storage (0017.2) over weeks/months (0023.1).  

1. An improved method of packaging moisture vulnerable powdered (0002.5), and solid (0002.8) edibles of longer shelf life (0023.1), subjected to environmental temperature (0017.4), and humidity (0002.3 and 0027.2) variations over weeks/months (0023.1) during handling, transport and storage (0017.2); using the available non-hygroscopic adhesives (0005.1), to counter the explained drawbacks of conventionally used hygroscopic adhesives (0017.1 and 0025.1) and FIGS. 1-8 at present, for packaging powdered and solid edibles, exposed to similar environmental conditions; wherein the possibility numerous alterations and modifications by those skilled in the art (0028), the non-hygroscopic adhesive is applied on the entire length of both the margins of the packaging material till the end, ensuring the breadth of the adhesive around 1 cm, the edibles are wrapped by closely opposing the margins without any open surface (0026.1-0026.3) and FIG. 8).

2. The method of claim 1, in which non-hygroscopic adhesive are used for packaging powdered and solid edibles, those are handled, transported and stored over weeks/months under normal environmental conditions.

3. The method of claim 1, which improves shelf life of the packaged edible, those are exposed to environmental temperature and humidity variations, owing to absence of moisture absorbing nature of non-hygroscopic adhesive.

4. The method of claim 1, which removes the risk of food spoilage due to microorganisms or chemical reactions that would occur, when hygroscopic adhesives are used.

5. The method of claim 1, which concerns health benefit to the consumer by ensuring safety of the packaged edible.

6. The method of claim 1, which is capable of addressing and overcoming the abovementioned disadvantages of hygroscopic adhesives.