[0014] As used herein, "edible material" includes any material that is generally regarded as safe by FDA and does not have to be removed from the food component before it is eaten (i.e., a material that can be safely chewed and ingested by the consumer).

[0015] As used herein, "a foldable egg patty" refers to a liquid whole egg product that is more readily foldable than liquid whole egg. To determine foldability of the egg patty according to the invention, that foldability is compared to a patty of scrambled liquid whole egg. In making the comparison, an egg blend as described herein (as well as a comparative patty of liquid whole egg) are cooked on a surface at a temperature as described. Before cooking, the size of the egg blend deposited on the surface is about 3 inches wide by about 8⅛ inches long. After cooking the egg patty made from the blend of the invention and liquid whole egg are be folded to provide an egg patty with a length of about 2¼ inches to about 3 inches, preferably a length about 2.61 inches, a width of about 2.63 inches to about 2.89 inches, preferably a width of about 2.75 inches, and a height of about 0.37 to about 0.54 inches, preferably about 0.45 inches. The egg composition of the invention more readily folds than an egg patty made from just liquid whole egg.

[0016] To provide a egg patty with characteristics similar to fresh eggs, the egg patty is made from a composition which is an egg blend which includes liquid whole egg, an edible oil, an amount of freeze-thaw stabilizer effective for providing freeze-thaw stability, gum, flavor, phosphates and an amount of pH controller effective for providing a pH of 7.2 or less. The egg patty blend includes at least 90 weight percent, preferably from 95 to 98.5 weight percent, and more preferably 97 to 98 weight percent liquid whole egg based on the weight of the blend before cooking.

[0017] The freeze-thaw stabilizer blended with the liquid whole egg is effective for providing an egg patty with characteristic similar to fresh eggs after the blend is cooked, frozen, thawed and reheated. Generally this amount is from 0.5 to 3 weight percent freeze-thaw stabilizer based on the weight of the egg blend before cooking. Previously, xanthan gum was used as a freeze-thaw stabilizer. An important aspect of the present invention is using modified food starch as the freeze-thaw stabilizer which is effective for stabilizing the egg patty through at least one cooking, freezing, one thaw and reheating such that the reheated egg patty will have the characteristics of fresh scrambled or fresh eggs.

[0018] A modified food starch has better freeze/thaw stability properties than xanthan gum. Modified food starches for an egg patty may be made from tapioca, corn, or potato. A modified starch is cross-linked to form a structure which is effective to bind moisture in the egg to permit freezing and to provide a cook, freeze, thaw and reheat cycle as described above. In a very important aspect of the present invention, the modified food starch is cornstarch. Modified cornstarch has a strong crosslinked structure which can tolerate abusive processing conditions. Cornstarch will not begin to swell until it reaches a temperature of 140° F. or higher. Eggs in the blend of the invention will begin to cook at temperatures approaching 160° F. to 185° F.

[0019] Carrageenan gum also may be included in the egg blend. Carrageenan gum plays a dual role as a freeze/thaw stabilizer as well as a thickening agent. The gum increases the viscosity of the partially cooked egg blend which enables the cooking egg to be folded into thirds more easily when the product is slightly viscous. Carrageenan gum also aids in keeping the modified food starch of the egg patty formula suspended in solution. Typically, without the use of a thickening agent, the modified food starch will settle to the bottom of the mix in the silo or holding tank. Carrageenan gum is used in amounts effective to achieve these objectives which amounts generally are from 0.03 to 0.085 weight percent, with a preferred amount of 0.075 weight percent based upon the weight of the uncooked egg blend. Examples of other gums which may be used in combination with the other ingredients in the egg blend include carrageenan, guar, xanthan, locust bean, gum arabic, or combinations thereof.

[0020] The egg blend may include water in an amount effective for providing the desired fluffy and tender appearance of fresh eggs. The water further allows the egg to rise to a desired height by creating steam within the egg blend during the cooking process. In this aspect of the invention, the egg patty may include from 1 to 5 weight percent water, based on the weight of the egg blend before cooking.

[0021] In another aspect, the egg blend to make the egg patty includes an edible oil. The edible oil is effective for providing the egg patty with desired tenderness and organoleptic properties that resemble a patty made from fresh eggs that has not been frozen and reheated. The edible oil acts to provide the egg patty with a glossy sheen surface with a slightly irregular and dimpled texture, thereby aiding to the overall tenderness of the egg patty. Edible oils that may be used in the present invention include edible vegetable oils and may include oils selected from the group consisting of soybean oil, partially hydrogenated soybean oil, corn oil, canola oil, olive oil, sunflower oil, peanut oil, coconut oil, rapeseed oil, palm oil, palm kernel oil, cottonseed oil, and mixtures thereof. In this aspect of the invention, the egg blend includes from 1 to 3 weight percent edible oil, based on the weight of the blend before cooking.

[0022] In an very important aspect of the invention, the edible oil is soybean oil. Soybean oil adds tenderness to the egg patty ensuring the eggs are not dry and crumbing but slightly moist and tender. The soybean oil also gives the appearance of a glossy and irregular egg patty that is similar to fresh eggs.

[0023] The egg blend to make the egg patty further includes an amount of pH controller effective for providing and maintaining the egg patty with a bright yellow color. Compositions useful for controlling pH in the present invention include pH controllers selected from the group consisting of citric acid, sodium pyrophosphate, tetrasodium pyrophosphate, disodium phosphate, trisodiumphosphate, monosodium phosphate and mixtures thereof. In this aspect of the invention, the egg blend includes from 0.05 to 0.3 weight percent pH controller, based on the weight of the egg patty blend before cooking. In a very important aspect of the invention, the pH controller is citric acid.

[0024] Additionally, the egg blend to make the egg patty may include phosphates. Phosphates are used to preserve the rich yellow whole egg color like fresh eggs. Phosphates that may be used in the present invention include tetrasodium pyrophosphate disodium phosphate, trisodiumphosphate, sodium acid pyrophosphate and monosodium phosphates. In this aspect of the invention, the egg patty includes 0.14 to 0.21 weight percent of the phosphates, based on the weight of the blend before cooking.