tion of the salt in acid solution. On the other hand, at 100° C., the temperature at which a soup is prepared from the soup mix, release of sodium bicarbonate is almost instantaneous.

The soup mixes, embodying my invention as described above, keep well under all expected conditions of storage and shipment. Even under artificially servere tests they retain well their color and quality. Thus, storing at an elevated temperature a commercial soup mix of the type described above and a similar soup mix to which had been added 1% citric acid and coated sodium bicarbonate equivalent to 1.08% $NaHCO_3$, after 16 hours storage at 55° C., showed general discoloration and dark brown "islands" in the unstabilized soup mix, whereas the soup mix containing cirtric acid suffered only very slight generalized browning not noticeable upon casual inspection. Upon preparing a soup from the stabilized soup mix, it was found to be of good taste, comparable in every respect to the soup from freshly prepared soup mix.

Under similar rigorous conditions of test, using glutamic acid as the acid preserving agent and disodium glutamate as the neutralizing agent, in amounts such that together they are equivalent to the monosodium glutamate of the standard mix described above (equivalent to 5% monosodium glutamate), the mix was found to withstand successfully the high temperature storage. In another case, the monosodium glutamate was reduced by 5.0 and equivalent amounts of disodium glutamate and glutamic acid were added, 2.5% of each were used. In each instance, the disodium salt was previously coated with ethyl cellulose in the manner described in connection with sodium bicarbonate. Both these modified mixes and a sample of the standard mix were stored in a humid atmosphere 18 hours at 55° C., followed by 24 hours at 37° C. The control mix showed general discoloration of considerable extent and dark brown "islands". Both stabilized mixes suffered only negligible discoloration.

It has also been found advantageous to coat the alkaline ingredient, e. g., individual granules of disodium glutamate, with a highly hydrogenated edible fat which remains solid under all conditions of practical storage. If the mix contains fat-soluble reactants, e. g. spices, which are incompatible with the base, it is desirable to add another coating of a water soluble material such as sugar or gelatin over the fat, and to assure protection of this layer against the darkening reaction it may contain citric or glutamic or other suitable acid. Soup mixes of the type described above are effectively protected against development of dark pigment when the glutamate content of the mix is one-half in the form of glutamic acid distributed, without any coating, in the mix and one-half in the form of disodium glutamate isolated by a coating of hydrogenated fat, or the latter with an additional coating of sugar or gelatin. The addition of some of the free glutamic acid in the final coating insures absolute segregation of the enclosed alkaline material from the other materials in the mix. It is important to point out that by my invention I am able to achieve the desired results by physical form and only minor chemical modification of the normal constituents of the mix and without adding any essentially foreign ingredients in the mix, and without affecting the relationship of one ingredient to another in the re-constituted soup. It is important also that, in all these examples, the material embodying my

invention liberate the isolated ingredient only very slowly in water at room temperatures or under refrigeration, whereas at 100° C. this liberation of the base occurs instantaneously. When the monosodium glutamate is used as the base to be segregated, a simple coating with the hydrogenated fat suffices, since the pH of this salt is such that it does not affect other fat-soluble reactants, such as spices.

Many other types of concentrated foods than the soup mixes chosen above as examples are subject to darkening or decomposition and can be protected against such deterioration by my invention. Dehydrated vegetables have been observed to show the sugar amino acid reaction. As an example of this, dehydrated tomatoes which have been observed by chemical and physical studies to show this sugar amino acid reaction, have been effectively protected against browning by addition of citric acid in an uncoated form and a base, for example, sodium bicarbonate in the form of coated pellicles.

In some cases, it may be desirable for the preservation of unstable nutrients to maintain a substantial part of the dehydrated composition at a particular pH which is more alkaline than that in which the food is customarily consumed. It is then necessary to add an acid material to such ingredients just before consumption. This acid ingredient may be isolated according to my present invention, e. g., as pellicles coated by any of the procedures described above, and thus isolated, may be mixed with other ingredients in the same packages during storage, so that it is readily available for decreasing the pH to one compatible with good taste when the mix is reconstituted for consumption.

Although in the foregoing specification I have given various examples of my invention and have suggested certain modifications and alternatives, these are not intended to be exhaustive nor limiting of my invention, but on the contrary are selected and presented with a view to illustrating and explaining the invention, the principles thereof and the best manner of applying it in practical use in order that others skilled in the art may be enabled to practice the invention and apply it under various circumstances and in various ways, and with modifications, each as may be best suited to the conditions of a particular use.

I claim:

1. A food concentrate composition comprising a carbohydrate and an amino acid material which can react therewith to form dark pigment, with sufficient acid to maintain said composition at a pH less than 4.5, and an alkaline edible substance in proportion sufficient to react with said acid to give a palatable product of a pH substantially above 4.5, and an edible coating which segregates said alkaline substance from the other components under storage conditions and which disintegrates in boiling water, whereby such formation of dark pigment is inhibited without destroying the palatable quality of the edible product thus prepared from said composition.

2. A packaged food concentrate composition comprising a carbohydrate and an amino acid material which can react therewith to form dark pigment, with sufficient acid to maintain said carbohydrate amino acid material at a pH less than 4.5, and an alkaline edible substance in proportion sufficient to react with said acid to give a palatable product of a pH substantially