

DETAILED DESCRIPTION OF THE INVENTION

In accordance with the present invention there is provided a process for the preparation of a non-dairy creamer powder composition having enhanced feathering resistance which comprises forming an emulsion and drying, normally spray-drying, from 20 to 40% by weight on a dry basis of fat, from 3 to 15% by weight of sodium caseinate, from 35 to 65% by weight carbohydrate, together, if desired, with an emulsifier, such as a monoglyceride, preferably in the range of from 0.5 to 3.0% by weight, and importantly including as a buffering agent a mixture of sodium carbonate and a phosphate, preferably dipotassium hydrogen phosphate, or a citrate, at a level from 1 to 4% by weight.

The invention also provides a non-dairy creamer powder formed by spray-drying an emulsion as described above.

The amount of the buffer mixture to be used depends upon the expected or recommended consumer dose level to attain a feathering resistance of 500 ppm or more. The proportion of carbonate/phosphate, and the percentage amount of the buffer mixture, should be such that neither a backtaste from the phosphate or carbonate, nor any tendency to browning from the sodium carbonate occurs.

Preferably, the buffering agent is a mixture of sodium carbonate and dipotassium hydrogen phosphate in a weight ratio of 1:9. Thus, a high-feathering resistance composition is provided by a mixture of 2.7% by weight dipotassium hydrogen phosphate and 0.3% by weight sodium carbonate as the buffering agent, which gives a feathering resistance against at least 500 ppm hardness and a coffee pH of 4.75 at the test amounts stated above. This composition will have no backtaste, nor any tendency to cause browning reactions since the phosphate and carbonate levels are both sufficiently low, up to the normal usage level of the creamer.

The following Table illustrates the results of tests carried out with spray-dried compositions containing dipotassium hydrogen phosphate or sodium carbonate alone compared with a mixture of these salts according to the invention. The feathering resistance is determined with the test level amounts of coffee and creamer. The taste was assessed at this same level, and at the normal usage.

K ₂ HPO ₄	Na ₂ CO ₃	Feathering resistance	Taste Characteristics
2.0%	—	Feather at 300 ppm	No backtastes
2.2	—	at 350 ppm	No backtaste
3.0%	—	at 500 ppm	Slight backtaste
2.7	0.3	at 550 ppm	No backtaste
—	1.0	at 400 ppm	Backtaste

The above Table indicates, that a mixture of salts according to the invention achieves high feathering resistance with sodium caseinate based creamers when the salts are incorporated in the emulsion before spray-drying.

Similar favourable results may be achieved with other mixtures with sodium carbonate, i.e., citrates and other phosphates.

The following Example illustrates the invention and the manner in which it may be performed.

EXAMPLE

A coffee creamer emulsion was prepared at the following dry weight percentages of ingredients:

5 60.0% Corn Syrup Solids; 32.0% high lauric vegetable fat; 3.5% sodium caseinate; 1.5% mono/diglyceride emulsifier (Cremodon 250/20); 2.7% dipotassium hydrogen phosphate and 0.3% sodium carbonate.

10 400 lbs. of this emulsion were prepared, by first dissolving the corn syrup solids and sodium caseinate in 200 lbs. warm water at 50° C., followed by dissolution of the buffer salts. A melted fat phase was prepared at the same time from the remaining fatty ingredients and kept at a temperature no higher than 50° C. The melted fat phase was then poured into the aqueous phase with agitation to cause emulsification, at a temperature no higher than 50° C. The resultant emulsion was then homogenized under a pressure of 4000 p.s.i.g. and passed to a spray drier of conventional design with centrifugal pressure nozzles, and dried to a powder of 2% moisture content. An inlet temperature of 400° F. and an outlet temperature of 200° F. was employed, to give somewhat less than 200 lbs. dried product.

25 The spray-dried coffee creamer, when added at the rate of 3.0 grams to a cup of instant coffee, made up from 2.0 grams instant coffee dissolved in 170 mls. of water at 80° C., of known hardness, that is 550 ppm. No feathering occurred, nor was there any backtaste attributable to the presence of the phosphate/carbonate agent, nor had any discoloration occurred in the powder as a result of browning reactions.

What is claimed is:

1. A process for the preparation of a non-dairy creamer powder composition having enhanced feathering resistance which comprises forming an emulsion comprising from 20 to 40% by weight on a dry basis of fat, from 3 to 15% by weight of sodium caseinate, from 35 to 65% by weight of carbohydrate and including as a buffering agent a mixture of effective amounts of sodium carbonate and a phosphate or a citrate at a level from 1 to 4% by weight and drying said emulsion.

2. A process according to claim 1, in which the emulsion also contains an emulsifier.

3. A process according to claim 2, in which the emulsifier is present in amount within the range of from 0.5 to 3.0% by weight.

4. A process according to claim 2, in which the emulsifier is a monoglyceride.

5. A process according to claim 1, in which the sodium carbonate and dipotassium hydrogen phosphate are present in a weight ratio of 1:9.

6. A process according to claim 1, in which the drying step is spray-drying.

55 7. A non-dairy creamer powder formed by spray-drying an emulsion comprising from 20 to 40% by weight on a dry basis of fat, from 3 to 15% by weight of sodium caseinate, from 35 to 65% by weight carbohydrate, from 0.5 to 3.0% by weight of a monoglyceride emulsifier and from 1 to 4% by weight of a buffering agent comprising a mixture of effective amounts of sodium carbonate and a phosphate or citrate.

8. A powder according to claim 7, in which the buffering agent is a mixture of 0.3% by weight of sodium carbonate and 2.7% by weight of dipotassium hydrogen phosphate.

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