Prior Art Documents

Patent Documents

[0008]

Patent Document 1: Japanese unexamined Patent Application Publication No. 2013-203671

Patent Document 2: Japanese unexamined Patent Application Publication (Translation of PCT Application) No. 2003-508432

Patent Document 3: Japanese unexamined Patent Application Publication (Translation of PCT Application) No. 2007-524527

Patent Document 4: Chinese Patent No. 101711875

Summary

Object to be Solved by the Invention

[0009]

An object of the present invention is to provide a soft capsule formulation in which the soft capsule shell thereof does not easily soften and the surface of the soft capsule shell is resistant to adherence and which has excellent gloss and transparency even if glycerin is used as a plasticizer.

Means to Solve the Object

[0010]

A capsule shell formed from a composition for a soft capsule shell comprising a base containing either gelatin or a mixture of a starch and a carrageenan as a main component and a plasticizer containing sorbitol, maltitol and glycerin as main components wherein each component in

the base and the plasticizer is blended with each other in a specified proportion makes it possible to provide a soft capsule formulation which has excellent plasticity and flexibility, neither adheres to each other nor sticks to a storage container, and has excellent gloss and transparency. In addition, the soft capsule formulation according to the present invention can keep its softness even when it contains as a capsule fill a composition which easily hardens over time under extreme conditions.

In one aspect, there is provided a composition for a soft capsule shell comprising: a base containing a mixture of starch and carrageenan as a main component; and a plasticizer containing sorbitol, maltitol and glycerin as main components, wherein the plasticizer contains 1 to 15 parts by mass of sorbitol, 1 to 30 parts by mass of maltitol and 30 to 60 parts by mass of glycerin, per 100 parts by mass of the mixture of starch and carrageenan.

In another aspect, there is provided a capsule shell consisting of the composition for a capsule shell as described herein.

In yet another aspect, there is provided a soft capsule formulation wherein a capsule fill is filled in the capsule shell as described herein.

In another aspect, there is provided a method for manufacturing a soft capsule formulation comprising: forming a capsule shell by forming a film from a composition for a soft capsule shell comprising a base containing a mixture of starch and carrageenan as a main component and a plasticizer containing sorbitol, maltitol and glycerin as main components, and filling the capsule

shell with a capsule fill, wherein the plasticizer contains 1 to 15 parts by mass of sorbitol, 1 to 30 parts by mass of maltitol and 30 to 60 parts by mass of glycerin, per 100 parts by mass of the mixture of starch and carrageenan.

[0011]

More specifically, the present invention relates to:

(1) a composition for a soft capsule shell comprising: a base containing either gelatin or a mixture of starch and carrageenan as a main component; and a plasticizer containing sorbitol, maltitol and glycerin as main components, wherein

when the base is a base containing gelatin as a main component, the plasticizer contains 1 to 15 parts by mass of sorbitol, 1 to 30 parts by mass of maltitol and 40 to 60 parts by mass of glycerin, per to 100 parts by mass of the gelatin; and

when the base is a base containing a mixture of starch and carrageenan as a main component, the plasticizer contains 1 to 15 parts by mass of sorbitol, 1 to 30 parts by mass of maltitol and 30 to 60 parts by mass of glycerin, per to 100 parts by mass of the mixture of starch and carrageenan;

(2) the composition for a soft capsule shell according to (1), wherein the starch is one or more

CLAIMS

1. A composition for a soft capsule shell comprising: a base containing a mixture of starch and carrageenan as a main component; and a plasticizer containing sorbitol, maltitol and glycerin as main components, wherein the plasticizer contains 1 to 15 parts by mass of sorbitol, 1 to 30 parts by mass of maltitol and 30 to 60 parts by mass of glycerin, per 100 parts by mass of the mixture of starch and carrageenan.

2. The composition for a soft capsule shell according to claim 1, wherein the starch is one or more starches selected from oxidized starch, starch dispersion, moist heat treated starch and acid treated starch.

3. The composition for a capsule shell according to claim 1 or 2, wherein the carrageenan is κ-carrageenan and/or ι-carrageenan.

4. A capsule shell consisting of the composition for a capsule shell according to any one of claims 1 to 3.

5. A soft capsule formulation wherein a capsule fill is filled in the capsule shell according to claim 4.

6. A method for manufacturing a soft capsule formulation comprising: forming a capsule shell by forming a film from a composition for a soft capsule shell comprising a base containing a mixture of starch and carrageenan as a main

component and a plasticizer containing sorbitol, maltitol and glycerin as main components, and filling the capsule shell with a capsule fill, wherein the plasticizer contains 1 to 15 parts by mass of sorbitol, 1 to 30 parts by mass of maltitol and 30 to 60 parts by mass of glycerin, per 100 parts by mass of the mixture of starch and carrageenan.

7. The method for manufacturing a soft capsule formulation according to claim 6, wherein the starch is one or more starches selected from oxidized starch, starch dispersion, moist heat treated starch and acid treated starch.

8. The method for manufacturing a soft capsule formulation according to claim 6 or 7, wherein the carrageenan is κ-carrageenan and/or ι-carrageenan.