

DESCRIPTION

TITLE OF THE INVENTION

METHOD FOR MANUFACTURING THICKENER COMPOSITION

Technical Field

[0001]

The present invention relates to a method for producing a thickener composition which enables reduction in lumping even when used in a high-temperature liquid. More specifically, the present invention relates to a method for producing a thickener composition comprising steps (a) and (b): (a) spraying an aqueous solution containing guar gum or tara gum as a binder solution onto a powder raw material containing a thickening polysaccharide as a major component to obtain a granulated product; and (b) obtaining a mixture of the granulated product obtained in step (a) and a dissolution aid.

Background Art

[0002]

People having difficulty in chewing and swallowing foods and beverages due to aging and the like have a risk of causing aspiration, by which foods and beverages are accidentally flown into the trachea, especially when ingesting low-viscous foods and beverages. In order to prevent this aspiration, a viscosity modifier, which imparts a viscosity suitable for swallowing to low-viscous foods and beverages, is used. In the viscosity modifier, a thickening polysaccharide such as xanthan gum is used as

a thickening component. However, when powder of a thickening polysaccharide itself comes in contact with water, the contact surface rapidly begins to swell, and adjacent particles aggregate together to form so-called "lumps", which are aggregates incorporating portions which are not in contact with water therein. The thickening polysaccharide which has formed lumps has reduced solubility and cannot impart a sufficient viscosity to foods and beverages.

[0003]

To reduce such lumping, a thickening polysaccharide is granulated together with powder other than the thickening polysaccharide. This aims at preventing a thickening polysaccharide particle from adhering to adjacent thickening polysaccharide particles due to swelling to thereby reduce lumping. During this granulation, a substance used to bind particles to each other is called a binder. Various binders are used in order to improve reduction in aggregation for preparation of a thickener composition to be used as a viscosity modifier and the like.

[0004]

Patent Document 1 discloses a technique for granulating a thickening polysaccharide by spraying a dextrin aqueous solution as a binder solution. Patent Document 2 discloses a technique for granulating a thickening polysaccharide by using a processed starch aqueous solution as a binder solution. Patent Document 3 discloses a technique for granulating a water-soluble polymer by using an aqueous solution containing an organic

acid and an organic acid salt as a binder. Alternatively, Patent Document 4 discloses a technique for granulating a thickening polysaccharide such as xanthan gum by using an aqueous solution containing gluconic acid and a gluconate as a binder.

[0005]

These thickener compositions produced by these conventional techniques exhibit a certain dispersibility when used in a low-temperature liquid such as water and juice. However, when used in a high-temperature liquid such as tea and soup, such compositions could not yet reduce lumping and could not impart quickly a viscosity suitable to foods and beverages for people having difficulty in chewing and swallowing.

Prior Art Documents

Patent Documents

[0006]

Patent Document 1: Japanese unexamined Patent Application Publication No. 2011-229440

Patent Document 2: Japanese unexamined Patent Application Publication No. 2004-147567

Patent Document 3: Japanese unexamined Patent Application Publication No. 2009-001532

Patent Document 4: Japanese unexamined Patent Application Publication No. 2008-161092

Summary of the Invention

Problem to be solved by the Invention

[0007]

It is an object of the present invention to obtain a method for producing a thickener composition which enables reduction in lumping and maintains a high dispersibility even when used in a high-temperature liquid.

Means to Solve the Problem

[0008]

The present inventors have made extensive investigations to solve the problem described above and, as a result, have found that a thickener composition exhibiting a high dispersibility even to a high-temperature liquid can be produced by conducting granulation by spraying an aqueous solution containing guar gum or tara gum as a binder solution onto a thickening polysaccharide, and adding a dissolution aid to the granulated product, having completed the present invention.

[0009]

That is, the present disclosure is disclosed as below:

(1) A method for producing a thickener composition comprising the following steps (a) and (b):

(a) spraying an aqueous solution containing guar gum or tara gum as a binder solution onto a powder raw material containing a thickening polysaccharide as a major component to obtain a granulated product; and

(b) obtaining a mixture of the granulated product obtained in step (a) and a dissolution aid selected from dextrin, starch and hydrogenated starch hydrolysate.

(2) The method for producing a thickener composition according to the above (1), wherein, in step (a), the

content of guar gum or tara gum in the aqueous solution containing guar gum or tara gum is 0.01 to 0.5 parts by mass per 100 parts by mass of the powder raw material.

(3) The method for producing a thickener composition according to the above (1) or (2), wherein, in step (a), a powder raw material or a binder solution contains a metal salt is used.

(4) The method for producing a thickener composition according to any one of the above (1) to (3), wherein a granulated product in step (a) is screened by a sieve with sieve opening of 1000 μm or more and a sieve with sieve opening of 300 μm or less.

(5) The method for producing a thickener composition according to any one of the above (1) to (4), further comprising the following step (c):

(c) spraying an aqueous solution containing guar gum or tara gum, or water as a binder solution onto a secondary powder raw material containing the mixture obtained in step (b) as a major component to obtain a secondary granulated product.

(6) The method for producing a thickener composition according to the above (5), wherein, in step (c), the content of guar gum or tara gum in the aqueous solution containing guar gum or tara gum is 0.01 to 0.5 parts by mass per 100 parts by mass of the secondary powder raw material.

(7) The method for producing a thickener composition according to the above (5) or (6), wherein the granulated product obtained in step (c) is screened by a sieve with

sieve opening of 1000 μm or more and a sieve with sieve opening of 300 μm or less.

(8) The method for producing a thickener composition according to any one of the above (1) to (7), wherein the thickening polysaccharide is xanthan gum.

(9) The method for producing a thickener composition according to any one of the above (1) to (8), wherein the dissolution aid is dextrin.

(10) The method for producing a thickener composition according to any one of the above (1) to (9), wherein the thickener composition is applied to a high-temperature liquid of 60°C or more.

(11) Food and beverage comprising a thickener composition produced by the production method according to any one of the above (1) to (10).

Effect of the Invention

[0010]

According to the present invention, it is possible to produce a thickener composition which enables reduction in lumping and maintains a high dispersibility not only when used in a low-temperature liquid but also when used in a high-temperature liquid. Since reducing lumping and having a high dispersibility, the thickener composition produced by the present invention can be used as a viscosity modifier for foods and beverages, which imparts a viscosity suitable to foods and beverages, especially to foods and beverages for people having difficulty in chewing and swallowing.

Mode of Carrying Out the Invention

[0011]

As the method for producing a thickener composition of the present invention, any method for producing a thickener composition is not particularly limited as long as the method comprises the steps (a) and (b):

(a) spraying an aqueous solution containing guar gum or tara gum as a binder solution onto a powder raw material containing a thickening polysaccharide as a major component to obtain a granulated product; and

(b) obtaining a mixture of the granulated product obtained in step (a) and a dissolution aid. However, it is preferred that the method further comprise the step of (c) spraying an aqueous solution containing guar gum or tara gum, or water as a binder solution onto a secondary powder raw material containing the mixture obtained in step (b) as a major component to obtain a secondary granulated product. Incorporation of step (c) can further reduce powder segregation which may occur during storage of the thickener composition produced.

[0012]

In the present invention, the thickening polysaccharide means a water-soluble polysaccharide which exhibits a high viscosity. Examples of the thickening polysaccharide include xanthan gum, carrageenan, gum arabic, locust bean gum, curdlan, tamarind gum, guar gum, tara gum, pullulan, pectin, gellan gum, alginic acid, and psyllium seed gum, and xanthan gum is suitable. Each thickening polysaccharide can be also used irrespective of its salt type.

[0013]

The powder raw material containing a thickening polysaccharide as the major component is only required to contain the above thickening polysaccharide as the major component, and may contain one thickening polysaccharide or two or more thickening polysaccharides. When containing two or more thickening polysaccharides, the powder raw material preferably contains xanthan gum.

[0014]

The powder raw material containing a thickening polysaccharide as the major component may contain less than 50% by mass of, preferably less than 25% by mass of, and more preferably less than 10% by mass of a component other than the thickening polysaccharide. Examples of the component other than the thickening polysaccharide include gelling agents such as mannan, agar, and gelatin, starch derivatives such as dextrin and starch, and salts such as calcium salts, sodium salts, potassium salts, and magnesium salts.

[0015]

In the present invention, the aqueous solution containing guar gum or tara gum is not particularly limited as long as the aqueous solution contains at least one of guar gum or tara gum, and may be an aqueous solution containing guar gum and tara gum. The aqueous solution can be used as a binder solution. A binder solution means a liquid such as water, an aqueous solution or the like to be added to the raw material powder in order to slightly dissolve the surface of powder raw material particles or in order to bind powder raw material

particles to each other by a component contained in the binder solution, in obtaining a granulated product.

[0016]

The binder solution used in obtaining a granulated product in step (a) of the present invention is an aqueous solution containing guar gum or tara gum. The binder solution used in obtaining a secondary granulated product in step (c) of the present invention is an aqueous solution containing guar gum or tara gum, or water, and an aqueous solution containing guar gum or tara gum is suitable.

[0017]

To the powder raw material or binder solution in step (a) and the secondary powder raw material or binder solution in step (c) of the present invention, a metal salt may be blended. Of thickening polysaccharides, there are some of which solubility and property of developing viscosity change depending on a coexisting metal. Addition of a metal salt enables adjustment of the physical properties when the thickener composition obtained by the production method of the present invention is added to foods and beverages and the like. Examples of the metal salt include sodium salts such as sodium gluconate, sodium alginate, and sodium chloride, potassium salts such as potassium gluconate and potassium chloride, and calcium salts such as calcium lactate and calcium chloride.

[0018]

In the present invention, the dissolution aid may be a substance which aids dissolution of thickening

polysaccharides, that is, inhibits aggregation between thickening polysaccharides. Examples include dextrin, starch, and hydrogenated starch hydrolysate, and dextrin is suitable. Mixing a dissolution aid into the granulated product obtained in step (a) enables production of a thickener composition which exhibits a high dispersibility to a high-temperature liquid.

[0019]

In step (a) of the present invention, the content of guar gum or tara gum in the aqueous solution containing guar gum or tara gum is, for example, 0.01 to 0.5 parts by mass, preferably 0.1 to 0.3 parts by mass, per 100 parts by mass of the powder raw material.

[0020]

In step (b) of the present invention, the content of the dissolution aid in the mixture of the dissolution aid and the granulated product obtained in step (a) is, for example, 50 to 300 parts by mass, preferably 80 to 150 parts by mass, per 100 parts by mass of the granulated product obtained in step (a).

[0021]

Furthermore, in step (c) of the present invention, the content of guar gum or tara gum in the aqueous solution containing guar gum or tara gum is, for example, 0.01 to 0.5 parts by mass, preferably 0.05 to 0.2 parts by mass, per 100 parts by mass of the secondary powder raw material containing the mixture obtained in step (b) (primary thickener composition) as the major component.

[0022]

In the present invention, the method for obtaining a granulated product is not particularly limited, and for example, a granulator such as a fluidized bed granulator, a stirring granulator, an extrusion granulator, or a tumbling fluidized bed granulator can be used to obtain a granulated product.

[0023]

The granulated product obtained in step (a) and the secondary granulated product (secondary thickener composition) obtained in step (c) of the present invention are preferably screened by a sieve, and more preferably screened by a sieve with sieve opening of 1000 μm or more and a sieve with a sieve opening of 300 μm or less. Removal of fine powder raw material which has failed to be granulated, a brittle granulated product, and large lumps by such sieving enables further reduction in lumping on dissolution.

[0024]

The thickener composition obtained by the method for producing a thickener composition of the present invention may be applied to a high-temperature liquid of 60°C or more, preferably of 70°C or more. Thickener compositions produced by conventional methods for producing a thickener composition exhibit a certain dispersibility to low-temperature liquids such as water and juice, but have the problem of lumping at a high temperature of 60°C or more. However, the thickener composition obtained by the production method of the present invention reduces lumping even when applied to a liquid of 60°C or more and exhibits a high dispersibility.

[0025]

The foods and beverages according to the present invention are not particularly limited as long as they contain a thickener composition produced by the method for producing a thickener composition of the present invention, and examples of the foods and beverages include tea, black tea, coffee, soup, miso soup, and hot milk. The content of the thickener composition blended can be set as appropriate depending on the type of foods and beverages, and is, for example, 0.2 to 5 parts by mass, preferably 1 to 4 parts by mass, per 100 parts by mass of the foods and beverages. The thickener composition obtained by the production method of the present invention, when added to these foods and beverages, exhibits a high dispersibility, reduces lumping, and can impart an intended viscosity.

[0026]

Preferable embodiments of the present invention will be described below, but these are not intended to restrict the scope of the present invention. The granulator, granulating conditions, raw material, and dispersibility test on high-temperature liquids in the following examples are as follows.

[0027]

(Granulator and Granulating Conditions)

The granulator used was a fluidized bed granulator FLO-5A produced by Freund Corporation. Granulation was conducted under conditions including an intake air temperature of 80°C, an intake air volume of 1 to 2.7 m³, a nozzle pressure of 0.2 MPa (170 L/min), and a spray

liquid speed of 30 to 52 g/min to thereby obtain a granulated product.

[0028]

(Raw Material)

In the raw material to be used as powder, salts having an average particle diameter of 120 μm or more were pulverized in a mortar or mill on a target of an average particle diameter of 100 μm , from the viewpoint of granulation workability, before use.

[0029]

(Dispersibility Test on High-Temperature Liquid)

100 g of tap water warmed at 90°C ($\pm 5^\circ\text{C}$) in a household electric kettle was weighed into a 300 mL capacity beaker, and 2.5 g of a thickener composition was weighed into a cup. Subsequently, when the temperature of the water decreased to 70°C ($\pm 5^\circ\text{C}$), the total content was added in one portion. After 3 seconds of still standing, stirring was carried out for 30 seconds with a stirring bar (about 25 rotations/10 seconds). Thereafter, the dissolution state was checked promptly and evaluated in according with the criteria shown in Table 1. A and B were evaluated to satisfy the required dispersibility level.

[0030]

[Table 1]

Evaluation	Number of lumps
A	0-10
B	11-20
C	21-30
D	31<

Example 1.

[0031]

(Production Example 1 of Thickener Composition)

Xanthan gum and sodium gluconate were used as powder raw material. Granulation was conducted by spraying an aqueous solution of guar gum or tara gum dissolved in water as a binder solution onto the powder raw material to obtain a granulated product. For Comparative Example, an aqueous solution of dextrin dissolved in water was used as a binder solution. The obtained granulated product was screened by sieves with sieve opening of 1400 μm and of 150 μm to collect a screened product having a particle diameter of 150 to 1400 μm .

[0032]

In a polyethylene bag, 6 g of the screened product of the collected granulated product and 6 g of dextrin were mixed to obtain Example Products 1 and 2 and Comparative Product 1. The raw material formulation in granulated products of each Example Product and Comparative Product is shown in Table 2. In Example Products 1 and 2, the content of guar gum or tara gum was 0.2 parts by mass per 100 parts by mass of the powder raw material for production of a granulated product.

[0033]

[Table 2]

(g)

Form of use	Raw materials	Example Product 1	Example Product 2	Comparative Product 1
Powder raw material	Xanthan gum	2315.2	2315.2	2235.4
	Sodium gluconate	79.7	79.7	77.0
Binder	Dextrin	0.0	0.0	87.6
	Guar gum	5.0	0.0	0.0
	Tara gum	0.0	5.0	0.0
	Water	700.0	700.0	700.0

[0034]

(Results)

The results of the dispersibility test of Example Products 1 and 2 and Comparative Product 1 to a high-temperature liquid are shown in Table 3. As shown in Table 3, Example Products 1 and 2, in which an aqueous solution containing guar gum or tara gum was used as the binder solution for granulation, exhibited a high dispersibility to the high-temperature liquid.

[0035]

[Table 3]

	Evaluation result of dissolution test
Example Product 1	A
Example Product 2	A
Comparative Product 1	C

Example 2

[0036]

(Production Example 2 of Thickener Composition)

Granulation was conducted by spraying an aqueous solution of sodium gluconate and guar gum, or sodium gluconate and tara gum dissolved in water as a binder solution onto xanthan gum as powder raw material to obtain a primary granulated product. For Comparative Example, an aqueous solution of sodium gluconate or sodium gluconate and dextrin dissolved in water was used as a binder solution. The obtained primary granulated product was screened in the same manner as in Example 1 to collect a screened product.

[0037]

The screened product of the collected primary granulated product was mixed with dextrin to be used as a secondary granulation raw material. Granulation was conducted by spraying an aqueous solution of sodium gluconate and guar gum, or sodium gluconate and tara gum dissolved in water as a binder solution onto the secondary granulation raw material to obtain a secondary granulated product. For Comparative Example, an aqueous solution of sodium gluconate, or sodium gluconate and dextrin dissolved in water was used as a binder solution. The secondary granulated product was screened under the same conditions as described above, and a screened product was collected to obtain Example Products 3 and 4 and Comparative Products 2 and 3. The raw material formulation of each Example Product and Comparative Product is shown in Table 4. In Example Products 3 and 4, the content of guar gum or tara gum was 0.15 parts by mass per 100 parts by mass of the powder raw material for production of the primary granulated product, and the content of guar gum or tara gum was 0.07 parts by mass per 100 parts by mass of the secondary powder raw material for production of the secondary granulated product.

[0038]

[Table 4]

(g)

Production phase	Form of use	Raw materials	Example Product 3	Example Product 4	Comparative Product 2	Comparative Product 3
Primary granulation	Powder raw material	Xanthan gum	2367.6	2367.6	2367.6	2283.6
	Binder	Sodium gluconate	28.8	28.8	28.8	28.8
		Dextrin	0.0	0.0	0.0	87.6
		Guar gum	3.6	0.0	0.0	0.0
		Tara gum	0.0	3.6	0.0	0.0
		Water	500.0	500.0	700.0	700.0
Secondary granulation	Powder raw material	Sieved product of primary granulated product	1138.6	1138.6	1136.8	1180.5
		Dextrin	997.1	997.1	1000.4	935.7
	Binder	Sodium gluconate	22.8	22.8	22.8	22.3
		Dextrin	0.0	0.0	0.0	21.6
		Guar gum	1.5	0.0	0.0	0.0
		Tara gum	0.0	1.5	0.0	0.0
		Water	430.0	430.0	430.0	430.0

[0039]

(Results)

The results of the dispersibility test of Example Products 3 and 4, and Comparative Products 2 and 3 to a high-temperature liquid are shown in Table 5. As shown in Table 5, Example Products 3 and 4, in which an aqueous solution containing guar gum or tara gum was used as the binder solution, exhibited a high dispersibility to the high-temperature liquid.

[0040]

[Table 5]

	Evaluation result of dissolution test
Example Product 3	B
Example Product 4	B
Comparative Product 2	D
Comparative Product 3	D

Example 3

[0041]

(Production Example 3 of Thickener Composition)

Xanthan gum and sodium gluconate were used as powder raw material. Granulation was conducted by spraying an aqueous solution of guar gum or tara gum dissolved in water as a binder solution onto the powder raw material to obtain a primary granulated product. For Comparative Example, water or an aqueous solution of dextrin dissolved in water was used as a binder solution. The obtained primary granulated product was screened in the same manner as in Example 1 to collect a screened product.

[0042]

The screened product of the collected primary granulated product was mixed with dextrin to be used as a secondary granulation raw material. Granulation was conducted by spraying an aqueous solution of guar gum or tara gum dissolved in water or water as a binder solution onto the secondary granulation raw material to obtain a secondary granulated product. For Comparative Example, water or an aqueous solution of dextrin dissolved in water was used as a binder solution. The secondary granulated product was screened under the same conditions as described above, and a screened product was collected to

obtain Example Products 5 to 8, and Comparative Products 4 and 5. The raw material formulation of each Example Product and Comparative Product is shown in Table 6. In Example Product 5 to 8, the content of guar gum or tara gum was 0.21 parts by mass per 100 parts by mass of the powder raw material for production of the primary granulated product, and in Example Products 5 and 6, the content of guar gum or tara gum was 0.07 parts by mass per 100 parts by mass of the secondary powder raw material for production of the secondary granulated product.

[0043]

[Table 6]

(g)

Production phase	Form of use	Raw materials	Example Product 5	Example Product 6	Example Product 7	Example Product 8	Comparative Product 4	Comparative Product 5
Primary granulation	Powder raw material	Xanthan gum	2315.2	2315.2	2315.2	2315.2	2320.0	2235.4
		Sodium gluconate	79.7	79.7	79.7	79.7	79.9	77.0
	Binder	Dextrin	0.0	0.0	0.0	0.0	0.0	87.6
		Guar gum	5.0	0.0	5.0	0.0	0.0	0.0
		Tara gum	0.0	5.0	0.0	5.0	0.0	0.0
		Water	700.0	700.0	700.0	700.0	700.0	700.0
Secondary granulation	Powder raw material	Sieved product of primary granulated product	1097.1	1097.1	1097.1	1097.1	1094.9	1136.4
		Dextrin	1061.2	1061.2	1062.8	1062.8	1065.2	1000.4
	Binder	Dextrin	0.0	0.0	0.0	0.0	0.0	23.3
		Guar gum	1.6	0.0	0.0	0.0	0.0	0.0
		Tara gum	0.0	1.6	0.0	0.0	0.0	0.0
		Water	430.0	430.0	430.0	430.0	430.0	430.0

[0044]

(Results)

The results of the dispersibility test of Example Products 5 to 8, and Comparative Products 4 and 5 to a high-temperature liquid are shown in Table 7. As shown in

Table 7, Example Products 5 to 8, in which an aqueous solution containing guar gum or tara gum was used as the binder solution for primary granulation, exhibited a high dispersibility to the high-temperature liquid. It was also revealed that the binder solution in the secondary granulation may be water.

[0045]

[Table 7]

	Evaluation result of dissolution test
Example Product 5	A
Example Product 6	A
Example Product 7	B
Example Product 8	A
Comparative Product 4	D
Comparative Product 5	D

Example 4

[0046]

(Production Example 4 of Thickener Composition)

Xanthan gum, agar, locust bean gum, guar gum, and KCl were used as powder raw material. Granulation was conducted by spraying an aqueous solution of guar gum or tara gum dissolved in water as a binder solution onto the powder raw material to obtain a primary granulated product. For Comparative Example, water was used as a binder solution. The obtained primary granulated product was screened in the same manner as in Example 1 to collect a screened product.

[0047]

The screened product of the collected primary granulated product was mixed with dextrin to be used as a secondary granulation raw material. Granulation was

conducted by spraying an aqueous solution of guar gum or tara gum dissolved in water as a binder solution onto the secondary granulation raw material to obtain a secondary granulated product. For Comparative Example, water was used as a binder solution. The secondary granulated product was screened under the same conditions as described above, and a screened product was collected to obtain Example Products 9 and 10, and Comparative Product 6. The raw material formulation of each Example Product and Comparative Product is shown in Table 8. In Example Products 9 and 10, the content of guar gum or tara gum was 0.15 parts by mass per 100 parts by mass of the powder raw material for production of the primary granulated product, and the content of guar gum or tara gum was 0.07 parts by mass per 100 parts by mass of the secondary powder raw material for production of the secondary granulated product.

[0048]

[Table 8]

(g)

Production phase	Form of use	Raw materials	Example Product 9	Example Product 10	Comparative Product 6
Primary granulation	Powder raw material	Xanthan gum	958.6	958.6	960.0
		Agar	623.1	623.1	624.0
		Locust bean gum	455.3	455.3	456.0
		Guar gum	239.6	239.6	240.0
		KCl	119.8	119.8	120.0
	Binder	Guar gum	3.6	0.0	0.0
		Tara gum	0.0	3.6	0.0
		Water	900.0	900.0	980.0
Secondary granulation	Powder raw material	Sieved product of primary granulated product	1081.6	1081.6	1080.0
		Dextrin	1076.9	1076.9	1080.0
	Binder	Guar gum	1.5	0.0	0.0
		Tara gum	0.0	1.5	0.0
		Water	450.0	450.0	450.0

[0049]

(Results)

The results of the dispersibility test of Example Products 9 and 10, and Comparative Product 6 to a high-temperature liquid are shown in Table 9. As shown in Table 9, Example Products 9 and 10, in which an aqueous solution containing guar gum or tara gum was used as the binder solution for primary granulation, exhibited a high dispersibility to the high-temperature liquid. Additionally, it has been revealed that locust bean gum and guar gum can also be used as a thickening polysaccharide.

[0050]

[Table 9]

	Evaluation result of dissolution test
Example Product 9	B
Example Product 10	B
Comparative Product 6	D

Industrial Applicability

[0051]

According to the production method of the present invention, it is possible to produce a thickener composition which enables reduction in lumping and maintains a high dispersibility even when used in a high-temperature liquid. The thickener composition can be advantageously used in the field of foods and beverages, particularly in the field of foods and beverages for people having difficulty in chewing and swallowing.

CLAIMS

1. A method for producing a thickener composition comprising the following steps (a) and (b):

(a) spraying an aqueous solution containing guar gum or tara gum as a binder solution onto a powder raw material containing a thickening polysaccharide as a major component to obtain a granulated product; and

(b) obtaining a mixture of the granulated product obtained in step (a) and a dissolution aid selected from dextrin, starch and hydrogenated starch hydrolysate.

2. The method for producing a thickener composition according to claim 1, wherein, in step (a), the content of guar gum or tara gum in the aqueous solution containing guar gum or tara gum is 0.01 to 0.5 parts by mass per 100 parts by mass of the powder raw material.

3. The method for producing a thickener composition according to claim 1 or 2, wherein, in step (a), a powder raw material or a binder solution containing sodium salts, potassium salts, or calcium salts is used.

4. The method for producing a thickener composition according to any one of claims 1 to 3, wherein the granulated product in step (a) is screened by using a sieve with a sieve opening of 1000 μm or more and a sieve with a sieve opening of 300 μm or less.

5. The method for producing a thickener composition according to any one of claims 1 to 4, further comprising the following step (c):

(c) spraying an aqueous solution containing guar gum or tara gum, or water as a binder solution onto a secondary powder raw material containing the mixture obtained in step (b) as a major component to obtain a secondary granulated product.

6. The method for producing a thickener composition according to claim 5, wherein, in step (c), the content of guar gum or tara gum in the aqueous solution containing guar gum or tara gum is 0.01 to 0.5 parts by mass per 100 parts by mass of the secondary powder raw material.

7. The method for producing a thickener composition according to claim 5 or 6, wherein the granulated product obtained in step (c) is screened by a sieve with a sieve opening of 1000 μm or more and a sieve with sieve opening of 300 μm or less.

8. The method for producing a thickener composition according to any one of claims 1 to 7, wherein the thickening polysaccharide is xanthan gum.

9. The method for producing a thickener composition according to any one of claims 1 to 8, wherein the dissolution aid is dextrin.

10. The method for producing a thickener composition according to any one of claims 1 to 9, wherein the thickener composition is applied to a high-temperature liquid of 60°C or more.