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Patent Document 1: JP-A-2001-233937

Patent Document 2: JP-A-10-279669

Patent Document 3: WO/2007/132771

SUMMARY

In a first aspect of the present disclosure, there is provided a silica powder characterized in that it has a Freundlich adsorption constant K of pyridine of from 1.3 to 5.0, the total of contents (as calculated as oxides) of SiO_2, Al_2O_3 and B_2O_3 is at least 99.5 mass%, and the total of contents of Al_2O_3 and B_2O_3 is from 0.1 to 20 mass%.

In a second aspect of the present disclosure, there is provided an inorganic powder characterized in that it contains the silica powder as defined herein.

In a third aspect of the present disclosure, there is provided a process for producing the silica powder as defined herein, characterized in that at least two burners are disposed in a furnace body with an angle of from 2 to 10° to the central axis of the furnace body, and from one burner, a raw material silica powder is sprayed and from at least one burner, an aluminum source material and/or a boron source material is sprayed, into a flame.

In a fourth aspect of the present disclosure, there is provided a resin composition characterized in that it

contains the silica powder as defined herein.

In a fifth aspect of the present disclosure, there is provided a sealing material for semiconductors, employing the resin composition as defined herein.

DISCLOSURE OF THE INVENTION

OBJECT TO BE ACCOMPLISHED BY THE INVENTION

It is an object of the present invention to provide a silica powder useful for preparing e.g. a sealing material for semiconductors having the flexural strength improved and having solder cracking resistance further improved.

MEANS TO ACCOMPLISH THE OBJECT

The present inventors have conducted an extensive study to accomplish the above object and have found a silica powder which accomplishes the object. The present invention is based on such a discovery and provides the following.

(1) A silica powder characterized in that it has a Freundlich adsorption constant K of pyridine of from 1.3 to 5.0.

(2) The silica powder according to the above (1), wherein the total of contents (as calculated as oxides) of SiO_2, Al_2O_3 and B_2O_3 is at least 99.5 mass%, and the total of contents of Al_2O_3 and B_2O_3 is from 0.1 to 20 mass%.

CLAIMS:

1. A silica powder characterized in that it has a Freundlich adsorption constant K of pyridine of from 1.3 to 5.0~~.~~

~~2. The silica powder according to Claim 1, wherein~~ the total of contents (as calculated as oxides) of SiO_2, Al_2O_3 and B_2O_3 is at least 99.5 mass%, and the total of contents of Al_2O_3 and B_2O_3 is from 0.1 to 20 mass%.

2~~3~~. The silica powder according to Claim 1 ~~or 2~~, which has a specific surface area of from 0.5 to 5 m^2/g and an average particle size of from 1 to 60 μm.

3~~4~~. An inorganic powder characterized in that it contains the silica powder as defined in ~~any one of~~ Claim~~s~~ 1 or 2~~to 3~~.

4~~5~~. The inorganic powder according to Claim 3~~4~~, wherein the inorganic powder is a silica powder and/or an alumina powder.

5~~6~~. A process for producing the silica powder as defined in ~~any one of~~ Claim~~s~~ 1 or 2 ~~to 3~~, characterized in that at least two burners are disposed in a furnace body with an angle of from 2 to 10° to the central axis of the furnace body, and from one burner, a raw material silica powder is sprayed and from at least one burner, an aluminum source material and/or a boron source material is sprayed, into a flame.

6~~7~~. The process for producing the silica powder according to Claim 5~~6~~, wherein the aluminum source

material is an aluminum oxide powder, and the raw material silica powder has an Al_2O_3 content of at most 1 mass%.

7~~8~~. The process for producing the silica powder according to Claim 6~~7~~, wherein the aluminum oxide powder has an average particle size of from 0.01 to 10 μm.

8~~9~~. A resin composition characterized in that it contains the silica powder as defined in ~~any one of~~ Claim~~s~~ 1 or 2 ~~to 3 or the inorganic powder as defined in Claim 4 or 5~~.

9~~10~~. The resin composition according to Claim 8~~9~~, wherein the resin in the resin composition is an epoxy resin.

10~~11~~. A sealing material for semiconductors, employing the resin composition as defined in Claim 8~~9 or 10~~.