AQUEOUS INK COMPOSITION FOR WRITING INSTRUMENTS

Technical Field

[0001]

The present specification relates to an aqueous ink composition for writing instruments using colored resin particles encapsulating a pigment.

Background Art

[0002]

An aqueous ink containing an aqueous dispersion of pigment-encapsulated polymer particles having a predetermined average particle diameter and containing (A) a hydrophilic polymer, (B) a hydrophobic polymer, and (C) a pigment (e.g., see Patent Document 1) and an ink composition for a writing instrument formed by using a microcapsule pigment encapsulating a dye or pigment in a microcapsule wall (e.g., see Patent Document 2) have been known.

[0003]

The microcapsule pigments and the like encapsulating pigments described in Patent Documents 1 and 2 described above contain in a microcapsule wall a general dye or a general pigment for which adjustment of particle diameter and particle distribution is easy. However, this aqueous ink composition for a writing instrument containing colored resin particles comprising the microcapsule pigment tends to be repelled on a paper face attached with hand grease or the like, and density in a drawn line may be uneven.

Citation List

Patent Document

[0004]

Patent Document 1: JP 2004-277507 A (Claims, Examples, etc.)

Patent Document 2: JP 2010-150331 A (Claims, Paragraph [0006], Examples, etc.)

Summary of Invention

Technical Problem

[0005]

In light of the problems in the related art described above, the present disclosure is to solve these problems, and an object is to provide an aqueous ink composition for writing instruments containing colored resin particles encapsulating a pigment, which is not repelled when the aqueous ink composition for writing instruments is used to write on a paper face attached with hand grease or the like, and achieves a uniform density in a drawn line and excellent writing capability.

Solution to Problem

[0006]

As a result of intensive studies in light of the above-mentioned problems, the present inventors have found that an aqueous ink composition for writing instruments for the object described above can be obtained by using at least colored resin particles encapsulating a pigment and using the same pigment, and thus has completed the present disclosure.

[0007]

Thus, the aqueous ink composition for writing instruments of the present disclosure contains at least a pigment (a) and colored resin particles (A) encapsulating the pigment (a).

A content ratio of the pigment (a) to the colored resin particles (A) [(a)/(A)] is preferably 0.02 to 0.5 by mass.

A resin component of the colored resin particles (A) is preferably urethane-based.

The pigment (a) is preferably carbon black.

Advantageous Effects of Invention

[0008]

According to the present disclosure, an aqueous ink composition for writing instruments containing colored resin particles encapsulating a pigment is provided which is not repelled when the aqueous ink composition for writing instruments is used to write on a paper face attached with hand grease or the like, and achieves a uniform density in a drawn line and excellent writing capability.

is not soluble with the aqueous ink composition accommodated in the ink container and has a smaller specific gravity than the aqueous ink composition, for example, polybutene, silicone oil, and mineral oil. For example, the ballpoint pen can be produced by filling the aqueous ink composition for writing instruments in an aqueous ballpoint pen body including a ballpoint pen tip having a ball with a diameter of 0.18 to 2.0 mm.

Note that the structures of the ballpoint pen and the marking pen are not particularly limited, and the ballpoint pen and the marking pen may be, for example, a direct liquid type pen provided with a collector structure (ink holding mechanism) using a shaft cylinder itself as an ink container in which the shaft cylinder is filled with the aqueous ink composition for writing instruments having the formulation described above.

[0035]

In addition, a pH level (at 25°C) of the aqueous ink composition for writing instruments of the present disclosure is adjusted to preferably 5 to 10, further preferably 6 to 9.5, by means of a pH adjuster or the like from the perspective of usability, safety, stability of the ink itself, and matching with the ink container.

[0036]

The aqueous ink composition for writing instruments of the present disclosure composed as described above can be provided by using a combination of at least the pigment (a) and the colored resin particles (A) containing the pigment (a) inside, and the resulting ink is not repelled when writing is performed on a paper face attached with hand grease or the like, and achieves a uniform density in a drawn line and excellent writing capability.

Examples

[0037]

Next, the present disclosure will be described in more detail using Production Examples, Examples, and Comparative Examples, but the present

[0047]

As is clear from the results in Table 1 and Table 2 above, it was confirmed that the aqueous ink compositions for writing instruments (marking pens, ballpoint pens) of Examples 1 to 7 within the scope of the present disclosure were aqueous ink compositions for writing instruments which are not repelled when the ink is used to write on a paper face attached with hand grease or the like and achieve uniform density in a drawn line and excellent writing capability compared to those of Comparative Examples 1 to 4 outside of the scope of the present disclosure.

Industrial Applicability

[0048]

The aqueous ink composition for writing instruments suitable for, for example, an aqueous ballpoint pen and a marking pen is obtained.