Description

Title of Invention: ABSORBER AND ABSORBENT ARTICLE USING THE SAME

Technical Field

[0001] The present invention relates to a technology for improving deodorization performance of absorbers and absorbent articles such as disposable diapers and sanitary napkins.

Background Art

[0002] Absorbent articles such as diapers, sanitary napkins, and incontinence pads are used for absorbing and retaining body fluids such as urine and menstrual blood excreted from a human body. However, there is a demand for such absorbent articles to have a measure against unpleasant odors released while in use or when disposing of them after use.

[0003] For example, Patent Literature 1 discloses an absorbent product including a liquid-permeable top sheet, a back sheet, and an absorbent core interposed between the top sheet and the back sheet; wherein the absorbent product includes a deodorization system having a metallic silicate (excluding transition metals) or silica having a molecular weight of 136 or higher together with an absorbent gelling material. Patent Literature 2 discloses an absorbent article having at least one type of deodorizer selected from organic amines, organic amine salts, or substances that react with excrement, thereby generating organic amines. Patent Literature 3 discloses an absorbent article for pets including a liquid-permeable top sheet, a liquid-impermeable back sheet, and an absorber interposed therebetween; wherein the absorber includes (A) a fibrous absorber, (B) tea leaves and/or a tea-leaf extract, and (C) a surfactant having an antibacterial property.

Citation List

Patent Literature

[0004] PTL 1: Japanese Patent Publication No. H11-512944
PTL 2: Japanese Patent Publication No. 2002-102280
PTL 3: Japanese Patent Publication No. 2009-232685

~~Summary of Invention~~

~~Technical Problem~~

[0005] As antibacterial agents, cationic surfactants are known. An absorber that has absorbed excrement such as urine will have a strong odor due to bacterial growth. Using an antibacterial cationic surfactant for an absorber should suppress bacterial

growth and provide a deodorization effect. However, when an antibacterial cationic surfactant was used in an absorber, a problem occurred that the desired deodorization effect was not recognizable. The present invention has been made in view of the above circumstances, and an object of the present invention is to provide an absorber and an absorbent article having excellent deodorization effect.

~~Solution to Problem~~

[0006] The present inventors have achieved the present invention based on the findings that a sodium salt of a crosslinked polymer mainly composed of acrylic acid used as a water-absorbent resin affects the antibacterial cationic surfactant and lowers its deodorization function. More specifically, the antibacterial cationic surfactant applied to a water-absorbent resin exchanges its cationic component with the sodium salt of the crosslinked polymer, is trapped by the water-absorbent resin, and becomes less effective against bacteria. As a result, the deodorization effect is lowered.

[0007] The present invention~~, that has solved the above problem,~~ provides an absorber comprising a crosslinked polymer mainly composed of acrylic acid and having carboxyl groups thereof being at least partially neutralized as a water-absorbent resin powder, and an antibacterial cationic surfactant, wherein the antibacterial cationic surfactant is a compound neutralized with an acid having an acid dissociation constant pKa in water at 25 degrees centigrade in a range from 3.0 to 5.5. The gist of the present invention resides in using a compound neutralized with an acid having an acid dissociation constant pKa in water at 25 degrees centigrade in a range from 3.0 to 5.5 as the antibacterial cationic surfactant. The acid dissociation constant in water at 25 degrees centigrade of acrylic acid, which is a main component of the crosslinked polymer, is 4.26. The antibacterial cationic surfactant neutralized with an acid having an acid dissociation constant close to that of acrylic acid, is unlikely to exchange cation with the water-absorbent resin powder. As a result, the antibacterial cationic surfactant used in the present invention is unlikely to be trapped by the water-absorbent resin and affects bacteria to exhibit its intrinsic deodorization effect.

[0008] The antibacterial cationic surfactant is preferably applied to at least a part of the water-absorbent resin powder. The deodorization effect can be enhanced by causing the antibacterial cationic surfactant to exist in or in the vicinity of the water-absorbent resin powder. The water-absorbent resin powder is preferably obtained by neutralizing at least a part of the carboxyl groups of the crosslinked polymer with a sodium ion. The absorber preferably comprises the antibacterial cationic surfactant in a content from 0.0005 mass% to 0.050 mass%.

[0009] The antibacterial cationic surfactant is more preferably a compound neutralized with an acid having an acid dissociation constant pKa in water at 25 degrees centigrade in a