absorption performance expected for an absorbent material having a large amount of a water-absorbent resin. Further, they tend to cause a problem in that, for example, a to-be-absorbed liquid may not be captured, resulting in liquid leakage.

PRIOR ART DOCUMENT

Patent Documents

Patent Document 1: Japanese Unexamined Patent Application (Translation of PCT Application), Publication No. H09-510889

Patent Document 2: Japanese Unexamined Patent Application, Publication No. H08-57311

SUMMARY

In one aspect, there is provided a water-absorbent resin which is a crosslinked polymer of a water-soluble ethylenically unsaturated monomer, an internal-crosslinking agent, and a post-crosslinking agent, wherein the water-absorbent resin has an absorbent material effective index K of 250 or more as determined in a liquid flow test defined below using the water-absorbent resin, the absorbent material effective index K being defined by the formula (I):

Absorbent material effective index K = the amount of liquid flow (g) x the artificial-urine absorption ratio (g/g) ... (I)

[Liquid flow test]

the liquid flow test being performed as follows: a nonwoven with a dimension of 16 cm x 12 cm and a basis weight of 22 g/m^2 is placed on an acrylic plate with a dimension of 16 cm x 12 cm, and 4.8 g of the water-absorbent resin is uniformly dispersed over the portion of 12 cm x 8 cm of the nonwoven, and then another nonwoven is placed thereover so as

to form a sandwiched configuration to give a measurement sample. Next, an acrylic plate, with a dimension of 48 cm x 28 cm (mass: 840 g), having a cylinder-like inlet part with an inner diameter of 3 cm at a center is placed thereover so that the center of the cylinder coincides with the center of the measurement sample, and then 120 g of artificial urine at a liquid temperature of 25°C is introduced in one portion through the cylinder-like inlet part, and the amount of artificial urine flowed out of the acrylic plate is measured, thereby obtaining the amount of liquid flow (g).

In another aspect, there is provided an absorptive article using an absorbent material comprising the water-absorbent resin described herein.

DISCLOSURE OF THE INVENTION

Problems to be Solved by the Invention

The present invention is made in view of aforementioned circumstances. An objective of the present invention is to provide a water-absorbent resin allowing for a high diffusibility of a to-be-absorbed liquid to reduce the amount of re-wet while maintaining a high water absorption capacity when used for an absorbent material. Another objective is to provide an absorbent article using an absorbent material comprising the aforementioned water-absorbent resin.

Means for Solving the Problems

The present inventors have conducted extensive studies in order to solve the above problems. As a result, the present inventors have found that a better absorption performance can be obtained in evaluation of an absorbent article when a

CLAIMS

1. A water-absorbent resin which is a crosslinked polymer of a water-soluble ethylenically unsaturated monomer, an internal-crosslinking agent, and a post-crosslinking agent, wherein

the water-absorbent resin has an absorbent material effective index K of 250 or more as determined in a liquid flow test defined below using the water-absorbent resin, the absorbent material effective index K being defined by the formula (I):

Absorbent material effective index K = the amount of liquid flow (g) x the artificial-urine absorption ratio (g/g) ... (I)

[Liquid flow test]

the liquid flow test being performed as follows: a nonwoven with a dimension of 16 cm x 12 cm and a basis weight of 22 g/m^2 is placed on an acrylic plate with a dimension of 16 cm x 12 cm, and 4.8 g of the water-absorbent resin is uniformly dispersed over the portion of 12 cm x 8 cm of the nonwoven, and then another nonwoven is placed thereover so as to form a sandwiched configuration to give a measurement sample. Next, an acrylic plate, with a dimension of 48 cm x 28 cm (mass: 840 g), having a cylinder-like inlet part with an inner diameter of 3 cm at a center is placed thereover so that the center of the cylinder coincides with the center of the measurement sample, and then 120 g of artificial-urine at a liquid temperature of 25°C is introduced in one portion through the cylinder-like inlet part, and the amount of artificial-urine flowed out of the acrylic plate is measured,

thereby obtaining the amount of liquid flow (g).

2. The water-absorbent resin according to claim 1, wherein the artificial-urine absorption ratio is 30.0 g/g or more and 60.0 g/g or less.

3. The water-absorbent resin according to claim 1 or 2, wherein the amount of liquid flow is 5.0 g or more and 50.0 g/g or less.

4. An absorbent article using an absorbent material comprising the water-absorbent resin according to any one of claims 1 to 3.