solvent, an ester-based solvent, an alcohol-based solvent, an amide-based solvent, and an ether-based solvent is used. Of these, at least one kind selected from a hydrocarbon-based solvent, a ketone-based solvent, an ester-based solvent, an alcohol-based solvent, and an amide-based solvent is preferable; at least one kind selected from an alcohol-based solvent and an ester-based solvent is more preferable; and an alcohol-based solvent is especially preferable.

The alcohol-based solvent which is used in the rinse solution is preferably a monohydric alcohol having 6 to 8 carbon atoms, and the monohydric alcohol may be linear, branched, or cyclic. Specifically, examples thereof include 1-hexanol, 1-heptanol, 1-octanol, 2-hexanol, 2-heptanol, 2-octanol, 3-hexanol, 3-heptanol, 3-octanol, 4-octanol, and benzyl alcohol. Of these, 1-hexanol, 2-heptanol, or 2-hexanol is preferable, and 1-hexanol or 2-hexanol is more preferable.

These organic solvents may be used alone, or as a mixture of two or more kinds thereof. In addition, such an organic solvent may be mixed with an organic solvent other than the foregoing organic solvents or water and used. However, taking into consideration the development properties, an amount of water blended in the rinse solution is preferably not more than 30 mass %, more preferably not more than 10 mass %, still more preferably not more than 5 mass %, and especially preferably not more than 3 mass % relative to the whole amount of the rinse solution.

The rinse solution can be blended with a known additive, if desired. Examples of the additive include a surfactant. Examples of the surfactant include the same surfactants as those described above. Above all, a nonionic surfactant is preferable, and a fluorine-based surfactant or a silicon-based surfactant is more preferable.

In the case of blending the surfactant, the blending amount thereof is usually 0.001 mass % to 5 mass %, preferably 0.005 mass % to 2 mass %, and more preferably 0.01 mass % to 0.5 mass % relative to the whole amount of the rinse solution.

The rinse treatment (washing treatment) using a rinse solution can be carried out through a known rinse method. Examples of the method include a method of continuously dispensing a rinse solution onto a support rotating at a fixed rate (rotary coating method); a method of immersing a support in a rinse solution for a certain period of time (dip method); and a method of spraying a rinse solution onto the surface of a support (spray method).

EXAMPLES

The invention is hereunder described in more detail by reference to the following Examples, but it should not be construed that the invention is limited to these Examples.

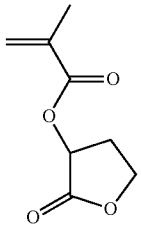
In Examples, a compound represented by a chemical formula (1) is designated as "compound (1)", and the same applies for compounds represented by other chemical formulae.

Example of Manufacturing of High-molecular Weight Compound

In Examples, to obtain a high-molecular weight compound used as a base material component, compounds as monomers represented by the following chemical formulae were used in combination in a predetermined molar ratio and copolymerized through a known radical polymerization method.

[Chemical formula 52]

(21)



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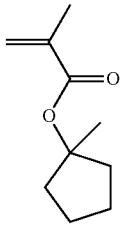

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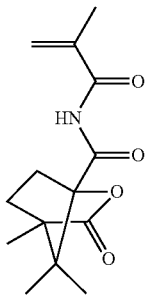

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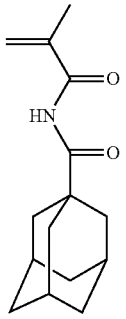

(03)