catalyst-introducing mechanism for mixing the raw saponification solution with the introduced saponification catalyst.

Because static mixers are used as the mixers in the present invention, there is no need for the power for operation of the mixers. Additionally, the static mixers do not generate mixing heat, thus preventing progress of the saponification reaction during mixing and stabilizing the quality of the product. Further because the catalyst is introduced into the center of the channel by the catalyst-introducing mechanism, the mixture can be mixed favorably in a short period of time.

The apparatus may contain static mixers having a pressure drop per element of less than 0.05 MPa.

In addition, the apparatus may have a unidirectionally moving belt and, in such a case, the saponification reaction may be allowed to proceed, as the mixture discharged from the static mixer is placed thereon.

Further, the catalyst-introducing mechanism may have an introducing pipe for flow of the catalyst-containing solution which is formed, as it crosses the center of the channel and extends through the channel in the direction perpendicular to the flow direction, and an introduction port having an opening facing the static mixer which is formed at the position of the introducing pipe equivalent to the center of the channel.

[009a] In one aspect, there is provided a method of producing a polyvinyl alcohol resin, comprising:

an introducing step of introducing a saponification catalyst to the center of a channel for flow of a raw saponification solution containing a polyvinyl ester and an organic solvent; and

a mixing step of mixing the raw saponification solution and the introduced saponification catalyst by static mixer,

wherein the mixture obtained in the mixing step is subjected to saponification reaction, as it is placed on a belt.

[009b] In another aspect, there is provided an apparatus for producing a polyvinyl alcohol resin, comprising:

a catalyst-introducing mechanism for introducing a saponification catalyst to the center of a channel for flow of a raw saponification solution containing a polyvinyl ester and an organic solvent;

one or more static mixers installed downstream of the catalyst-introducing mechanism for mixing the raw saponification solution with the introduced saponification catalyst; and

a belt movable unidirectionally,

wherein the mixture discharged from the static mixer is subjected to saponification reaction, as it is placed on the belt.

Advantageous Effect of Invention

[0010]

The present invention, wherein a saponification catalyst is introduced into the center of a channel for flow of a raw saponification

CLAIMS:

1. A method of producing a polyvinyl alcohol resin, comprising:

an introducing step of introducing a saponification catalyst to the center of a channel for flow of a raw saponification solution containing a polyvinyl ester and an organic solvent; and

a mixing step of mixing the raw saponification solution and the introduced saponification catalyst by static mixer.

2. The method of producing a polyvinyl alcohol resin according to Claim 1, wherein the mixture obtained in the mixing step is subjected to saponification reaction, as it is placed on a belt.

3. The method of producing a polyvinyl alcohol resin according to Claim 1 or 2, wherein the concentration of the polyvinyl ester in the raw saponification solution is 20 to 60 mass %, the viscosity is 0.01 to 30 Pa·s, and the saponification catalyst is introduced into the raw saponification solution to a catalyst concentration of 0.2 to 10 mass %.

4. An apparatus for producing a polyvinyl alcohol resin, comprising:

a catalyst-introducing mechanism for introducing a saponification catalyst to the center of a channel for flow of a raw saponification solution containing a polyvinyl ester and an organic solvent; and

one or more static mixers installed downstream of the

catalyst-introducing mechanism for mixing the raw saponification solution with the introduced saponification catalyst.

5. The apparatus for producing a polyvinyl alcohol resin according to Claim 4, wherein the static mixer shows a pressure drop per element of less than 0.05 MPa.

6. The apparatus for producing a polyvinyl alcohol resin according to Claim 4 or 5, further comprising a belt movable unidirectionally, wherein the mixture discharged from the static mixer is subjected to saponification reaction, as it is placed on the belt.

7. The apparatus for producing a polyvinyl alcohol resin according to any one of Claims 4 to 6, wherein the catalyst-introducing mechanism has an introducing pipe for flow of the catalyst-containing solution which is formed, as it crosses the center of the channel and extends through the channel in the direction perpendicular to the flow direction, and an introduction port having an opening facing the static mixer which is formed at the position of the introducing pipe equivalent to the center of the channel.

CLAIMS:

1. A method of producing a polyvinyl alcohol resin, comprising:

an introducing step of introducing a saponification catalyst to the center of a channel for flow of a raw saponification solution containing a polyvinyl ester and an organic solvent; and

a mixing step of mixing the raw saponification solution and the introduced saponification catalyst by static mixer,

wherein the mixture obtained in the mixing step is subjected to saponification reaction, as it is placed on a belt.

2. The method of producing a polyvinyl alcohol resin according to Claim 1, wherein the concentration of the polyvinyl ester in the raw saponification solution is 20 to 60 mass %, the viscosity is 0.01 to 30 Pa·s, and the saponification catalyst is introduced into the raw saponification solution to a catalyst concentration of 0.2 to 10 mass %.

3. An apparatus for producing a polyvinyl alcohol resin, comprising:

a catalyst-introducing mechanism for introducing a saponification catalyst to the center of a channel for flow of a raw saponification solution containing a polyvinyl ester and an organic solvent;

one or more static mixers installed downstream of the catalyst-introducing mechanism for mixing the raw saponification solution with the introduced saponification catalyst; and

a belt movable unidirectionally,

wherein the mixture discharged from the static mixer is subjected to saponification reaction, as it is placed on the belt.

4. The apparatus for producing a polyvinyl alcohol resin according to Claim 3, wherein the static mixer shows a pressure drop per element of less than 0.05 MPa.

5. The apparatus for producing a polyvinyl alcohol resin according to any one of Claims 3 or 4, wherein the catalyst-introducing mechanism has an introducing pipe for flow of the catalyst-containing solution which is formed, as it crosses the center of the channel and extends through the channel in the direction perpendicular to the flow direction, and an introduction port having an opening facing the static mixer which is formed at the position of the introducing pipe equivalent to the center of the channel.