Claims

[Claim 1]

A method for producing a polymer, comprising

step 1 of preparing a polymer solution containing one or more metals selected from the group consisting of aluminum, lithium and titanium, wherein an aluminum content in a polymer is 2000 ppm or less;

step 2 of obtaining a solution mixture by mixing the polymer solution and water in a volume ratio of 0.1 to 10 based on the polymer solution;

step A of separating and removing a water phase from the solution mixture after the step 2; and

step 3 of applying centrifugal acceleration to the solution mixture after the step A,

wherein

in the step 1, when an aluminum content in a polymer contained in the polymer solution is less than 30 ppm, a pH of a water phase of the solution mixture is controlled to be 10 or less in the step 2, and

in the step 1, when the aluminum content in the polymer contained in the polymer solution is 30 ppm or more and 200 ppm or less, the pH of the water phase of the solution mixture is controlled to be 5.5 or less, or 7 to 10 in the step 2.

[Claim 2]

The method for producing the polymer according to Claim 1, wherein the polymer solution in the step 1 contains titanium.

[Claim 3]

The method for producing the polymer according to Claim 1 or 2 wherein the polymer solution in the step 1 contains lithium and titanium.

[Claim 4]

The method for producing the polymer according to any one of Claims 1 to 3, wherein, in the step 2, the mixing of the polymer solution and the water is performed in a condition: $(P/V)\cdot T \geq 100$ wherein P represents a power (kw), V represents a volume (m^3) and T represents a mixing time (sec).

[Claim 5]

The method for producing the polymer according to any one of Claims 1 to 4, wherein, in the step 2, the mixing of the polymer solution and the water is performed in the condition: $30000 \geq (P/V)\cdot T \geq 1000$ wherein P represents a power (kw), V represents a volume (m^3) and T represents a mixing time (sec).

[Claim 6]

The method for producing the polymer according to any one of Claims 1 to 5, wherein, in the step 2, the pH of the water phase of the solution mixture is controlled to be 7 to 8.5.

[Claim 7]

The method for producing the polymer according to any one of Claims 1 to 6, wherein, in the step 2, an inorganic acid is further mixed.

[Claim 8]

The method for producing the polymer according to Claim 7, wherein the inorganic acid comprises at least one selected from the group consisting of hydrochloric acid, sulfuric acid, nitric acid and phosphoric acid.

[Claim 9]

The method for producing the polymer according to any one of Claims 1 to 8, wherein, in the step 2, a content of an alcohol in the solution mixture is 5% or less.

[Claim 10]

The method for producing the polymer according to any one of

Claims 1 to 9, wherein, in the step 3, centrifugal acceleration is applied in a condition of $0.01 \leq (G \cdot T2) \leq 5000$ where G represents a centrifugal acceleration rate and T2 represents a centrifugation time (hr).