Patent Literature 1: JP H09-067441 A

SUMMARY OF INVENTION

- Technical Problem

[0005]

The present invention aims to provide a vinyl alcohol-vinyl acetate copolymer having excellent solubility and a method for producing a vinyl alcohol-vinyl acetate copolymer.

- Solution to problem

[0006]

In one aspect, the present disclosure refers to method for producing a vinyl alcohol-vinyl acetate copolymer comprising a unit of vinyl alcohol and a unit of vinyl acetate, the vinyl alcohol-vinyl acetate copolymer having a randomness value R of 0.5 or higher, the randomness value R being obtained using the following equation (1):

$$R = \frac{1}{L_A} + \frac{1}{L_O} \quad (1)$$

where L_O represents a mean chain length of the unit of vinyl alcohol and L_A represents a mean chain length of the unit of vinyl acetate, the method comprising the step of transesterification of polyvinyl acetate or a raw material vinyl alcohol-vinyl acetate copolymer using a dianionic zincate complex represented by the following formula (2):

$$t\text{-}Bu_nR_{4-n}ZnM_m \quad (2)$$

where n represents an integer of 1 to 4, m represents 1 or 2, Rs may be the same as or different from one another when n represents 1 or 2 and each represent a C1-C8 alkyl, alkenyl, aryl, or arylalkyl group, when M represents

lithium, m represents 2 and when M represents magnesium, m represents 1.

The present disclosurerelates to a vinyl alcohol-vinyl acetate copolymer including a unit of vinyl alcohol and a unit of vinyl acetate, the vinyl alcohol-vinyl acetate copolymer having a randomness value R of 0.5 or higher, the randomness value R being obtained using the following equation (1) where L_O represents a mean chain length of the unit of vinyl alcohol and L_A represents a mean chain length of the unit of vinyl acetate.

The present invention is specifically described in the following.

[0007]

$$R = \frac{1}{L_A} + \frac{1}{L_O} \qquad (1)$$

[0008]

The present inventors found out that the monomer chain structure in a vinyl alcohol-vinyl acetate copolymer is associated with the improvement of the properties of the copolymer.

As a result of further intensive studies, the present inventors found out that a vinyl alcohol-vinyl acetate copolymer having high solubility can be obtained by setting the randomness value obtained from the mean chain length of

CLAIMS

Claim 1. A method for producing a vinyl alcohol–vinyl acetate copolymer comprising a unit of vinyl alcohol and a unit of vinyl acetate, the vinyl alcohol–vinyl acetate copolymer having a randomness value R of 0.5 or higher, the randomness value R being obtained using the following equation (1):

$$R = \frac{1}{L_A} + \frac{1}{L_O} \qquad (1)$$

where L_O represents a mean chain length of the unit of vinyl alcohol and L_A represents a mean chain length of the unit of vinyl acetate, the method comprising the step of transesterification of polyvinyl acetate or a raw material vinyl alcohol–vinyl acetate copolymer using a dianionic zincate complex represented by the following formula (2):

$$t\text{-}Bu_nR_{4-n}ZnM_m \qquad (2)$$

where n represents an integer of 1 to 4, m represents 1 or 2, Rs may be the same as or different from one another when n represents 1 or 2 and each represent a C1–C8 alkyl, alkenyl, aryl, or arylalkyl group, when M represents lithium, m represents 2 and when M represents magnesium, m represents 1.

Claim 2. The method for producing the vinyl alcohol–vinyl acetate copolymer according to claim 1,

wherein the dianionic zincate complex is dilithium tetra-t-butylzincate.

Claim 3. The method for producing the vinyl alcohol–

vinyl acetate copolymer according to claim 1 or 2,

wherein the transesterification is performed in a homogeneous system.

Claim 4. The method for producing the vinyl alcohol-vinyl acetate copolymer according to claim 1 or 2,

wherein the transesterification is performed in a heterogeneous system.

Claim 5. The method for producing the vinyl alcohol-vinyl acetate copolymer according to claim 1 or 2,

wherein the vinyl alcohol-vinyl acetate copolymer has a mean chain length L_O of the unit of vinyl alcohol of 1 or longer.

Claim 6. The method for producing the vinyl alcohol-vinyl acetate copolymer according to claim 1 or 2,

wherein the vinyl alcohol-vinyl acetate copolymer has a mean chain length L_A of the unit of vinyl acetate of 1 or longer.

Claim 7. The method for producing the vinyl alcohol-vinyl acetate copolymer according to claim 1 or 2,

wherein the vinyl alcohol-vinyl acetate copolymer comprises the unit of vinyl alcohol in an amount of 0.2 to 99.8 mol%.