by melt-forming processes such as extrusion and injection molding. In the melt forming of the EVOH, the melt forming temperature is high, typically 200°C or higher. Therefore, the EVOH is susceptible to thermal degradation, so that the resulting formed product is liable to have a poorer quality with fisheyes and gel-like objects (spots).

[0004] An exemplary method for suppressing the thermal degradation of the EVOH at a higher temperature is proposed, in which the total content of a carboxylic acid unit and a lactone ring unit at polymer terminals of the EVOH is controlled to not higher than 0.12 mol % based on the total content of an ethylene unit, a vinyl alcohol unit, and a vinyl ester unit of the EVOH (see, for example, PTL 1).

RELATED ART DOCUMENT

PATENT DOCUMENT

[0005] PTL 1: WO2004/092234 A1

SUMMARY

[0006] The art disclosed in PTL 1 provides a certain thermal degradation-suppressing effect, but the effect is not satisfactorily proved because films sampled after a lapse of 50 hours were evaluated for occurrence of gel-like objects therein by visual inspection. With recent technological advancement, the EVOH requires further improvement. For

EVOH; and at least one component (thermally stabilizing substance) selected from the group consisting of:

(A) not greater than 500 ppm of a cinnamic acid component based on the weight of the resin composition;

(B) not greater than 300 ppm of a lubricant based on the weight of the resin composition;

(C) not greater than 400 ppm of a boron compound on a boron basis based on the weight of the resin composition; and

(D) not greater than 800 ppm of a conjugated polyene compound based on the weight of the resin composition,

wherein the EVOH comprises monomer units including at least an ethylene unit and a vinyl alcohol unit, and a carboxylic acid group and a lactone ring present in terminal structures thereof, and the ratio (Y/Z) of a lactone ring content (Y) to the sum (Z) of a carboxylic acid content (X) and the lactone ring content (Y) is not less than 55 mol %.

[0010] According to a second aspect of the present disclosure, there is provided a multilayer structure that includes a plurality of layers, at least one of which comprises the EVOH resin composition.

[0011] In the EVOH resin composition of the present disclosure, the EVOH has a lactone ring content ratio (Y/Z) of not less than 55 mol % with respect to the sum (Z) of the carboxylic acid content (X) and the lactone ring content (Y) in the EVOH terminal structures. In addition, the resin composition contains a limited proportion of the specific thermally stabilizing substance. With this arrangement, the EVOH is excellent in high-temperature thermal stability, so

CLAIMS:

1. An ethylene-vinyl alcohol copolymer resin composition comprising:

an ethylene-vinyl alcohol copolymer; and

at least one component selected from the group consisting of:

(A) not greater than 500 ppm of a cinnamic acid component based on a weight of the resin composition;

(B) not greater than 300 ppm of a lubricant based on the weight of the resin composition;

(C) not greater than 400 ppm of a boron compound on a boron basis based on the weight of the resin composition; and

(D) not greater than 800 ppm of a conjugated polyene compound based on the weight of the resin composition,

wherein the ethylene-vinyl alcohol copolymer comprises monomer units including at least an ethylene unit and a vinyl alcohol unit, and a carboxylic acid group and a lactone ring present in terminal structures thereof, and a ratio (Y/Z) of a lactone ring content (Y) to a sum (Z) of a carboxylic acid content (X) and the lactone ring content (Y) is not less than 55 mol %.

2. The ethylene-vinyl alcohol copolymer resin composition according to claim 1, wherein the sum (Z) of the

carboxylic acid content (X) and the lactone ring content (Y) is 0.01 to 0.3 mol % based on a total amount of the monomer units of the EVOH.

3. The ethylene-vinyl alcohol copolymer resin composition according to claim 1 or 2, wherein the lactone ring content (Y) is 0.01 to 0.3 mol % based on the total amount of the monomer units of the ethylene-vinyl alcohol copolymer.

4. The ethylene-vinyl alcohol copolymer resin composition according to any one of claims 1 to 3, wherein the carboxylic acid content (X) is 0.01 to 0.3 mol % based on the total amount of the monomer units of the ethylene-vinyl alcohol copolymer.

5. A multilayer structure comprising a plurality of layers at least one of which comprises the ethylene-vinyl alcohol copolymer resin composition according to any one of claims 1 to 4.