CLAIMS

1. A gas barrier resin composition comprising at least one type of saponified ethylene-vinyl ester copolymer, wherein

of ethylene and a vinyl ester, which are raw materials of the at least one type of saponified ethylene-vinyl ester copolymer, at least a part is derived from biomass, and

the remaining part is derived from a fossil fuel.

2. The gas barrier resin composition according to claim 1, wherein

the at least one type of saponified ethylene-vinyl ester copolymer comprises:

a saponified ethylene-vinyl ester copolymer (A) in which of ethylene and a vinyl ester, which are raw materials thereof, at least a part is derived from biomass; and

a saponified ethylene-vinyl ester copolymer (B) which is derived from a fossil fuel.

3. The gas barrier resin composition according to claim 2, wherein a mass ratio (A/B) of the saponified ethylene-vinyl ester copolymer (A) to the saponified ethylene-vinyl ester copolymer (B) is 1/99 or more and 99/1 or less.

4. The gas barrier resin composition according to claim 1, wherein the at least one type of saponified ethylene-vinyl ester copolymer comprises an ethylene-vinyl alcohol copolymer (A') in which of ethylene and a vinyl ester, which are raw materials thereof, at least a part is derived from biomass, and

the remaining part is derived from a fossil fuel.

5. The gas barrier resin composition according to any one of claims 1 to 4, wherein a biobased content of the at least one type of saponified ethylene-vinyl ester copolymer is 1% or more and 99% or less.

6. The gas barrier resin composition according to any one of claims 1 to 5, having a biobased content of 1% or more and 99% or less.

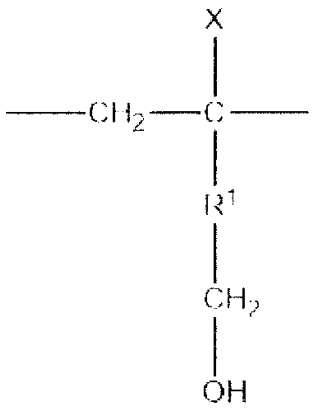
7. The gas barrier resin composition according to any one of claims 1 to 6, comprising a sulfur compound at a concentration of more than 0 ppm and 100 ppm or less in terms of sulfur atoms.

8. The gas barrier resin composition according to claim 7, wherein the sulfur compound is dimethylsulfide or dimethylsulfoxide.

9. The gas barrier resin composition according to any one of claims 1 to 8, wherein of the raw materials, at least a part of the ethylene is derived from biomass.

10. The gas barrier resin composition according to any one of claims 1 to 9, wherein of the raw materials, at least a part of the vinyl ester is derived from biomass.

11. The gas barrier resin composition according to any one of claims 1 to 10, wherein the at least one type of saponified ethylene-vinyl ester copolymer comprises a modifying group represented by the following general formula (I):



(I)

wherein, in the general formula (1), X represents a hydrogen atom, a methyl group, or a group represented by R^2-OH; and R^1 and R^2 each independently represent a single bond, an alkylene group having 1 to 9 carbon atoms, or an alkyleneoxy group having 1 to 9 carbon atoms, wherein the alkylene group and the alkyleneoxy group may comprise a hydroxyl group, an alkoxy group, or a halogen atom.

12. The gas barrier resin composition according to any one of claims 1 to 11, comprising carboxylic acid at a concentration of 30 ppm or more and 1,000 ppm or less in terms of carboxylic acid radical equivalent.

13. The gas barrier resin composition according to any one of claims 1 to 12, comprising a metal ion at a concentration of 1 ppm or more and 1,000 ppm or less.

14. The gas barrier resin composition according to any one of claims 1 to 13, comprising a phosphate compound at a concentration of 1 ppm or more and 200 ppm or less in terms of phosphorus atoms.

15. The gas barrier resin composition according to any one of claims 1 to 14, comprising a boron compound at a concentration of 5 ppm or more and 5,000 ppm or less in terms of boron atoms.

16. The gas barrier resin composition according to any one of claims 1 to 15, wherein the at least one type of saponified ethylene-vinyl ester copolymer comprises:

a saponified ethylene-vinyl ester copolymer (X); and

a saponified ethylene-vinyl ester copolymer (Y) having a melting point which is lower than a melting point of the saponified ethylene-vinyl ester copolymer (X).

17. The gas barrier resin composition according to any one of claims 1 to 16, further comprising an inorganic particle (C), wherein

a content of the inorganic particle (C) is 50 ppm or more and 5,000 ppm or less.

18. The gas barrier resin composition according to any one of claims 1 to 17, further comprising an antioxidant (D), wherein

a content of the antioxidant (D) is 0.01% by mass or more and 5% by mass or less.

19. The gas barrier resin composition according to any one of claims 1 to 12 and 14 to 18, further comprising:

a polyamide (E); and

at least one type of a metal atom (F) selected from the group consisting of atoms of magnesium, calcium, and zinc, wherein

a mass ratio of the polyamide (E) to the at least one type of saponified ethylene-vinyl ester copolymer is 5/95 or more and 40/60 or less, and

a content of the metal atom (F) is 1 ppm or more and 500 ppm or less.

20. The gas barrier resin composition according to any one of claims 1 to 19, further comprising a thermoplastic elastomer (G), wherein

a mass ratio of the thermoplastic elastomer (G) to the at least one type of saponified ethylene-vinyl ester copolymer is 5/95 or more and 35/65 or less.

21. A method for producing a gas barrier resin composition, wherein

the method comprises a step of dry-blending pellets of a saponified ethylene-vinyl ester copolymer (A) with pellets of a saponified ethylene-vinyl ester copolymer (B) and carrying out melt kneading,

of ethylene and a vinyl ester, which are raw materials of the saponified ethylene-vinyl ester copolymer (A), at least a part is derived from biomass, and

the saponified ethylene-vinyl ester copolymer (B) is derived from a fossil fuel.

22. A method for producing the gas barrier resin composition according to claim 19, comprising a step of mixing: pellets of the at least one type of saponified ethylene-vinyl ester copolymer; pellets of the polyamide (E); and a compound comprising at least one type of the metal atom (F) selected from the group consisting of atoms of magnesium, calcium, and zinc, and carrying out melt kneading.

23. A method for producing a gas barrier resin composition, wherein

the method comprises a step of dry-blending pellets of a saponified ethylene-vinyl ester copolymer (A), pellets of a saponified ethylene-vinyl ester copolymer (B), and pellets of a thermoplastic elastomer (G), and carrying out melt kneading,

of ethylene and a vinyl ester, which are raw materials of the saponified ethylene-vinyl ester copolymer (A), at least a part is derived from biomass, and

the saponified ethylene-vinyl ester copolymer (B) is derived from a fossil fuel.

24. A molded product comprising a gas barrier layer formed from the gas barrier resin composition according to any one of claims 1 to 20.

25. A film or sheet comprising the molded product according to claim 24.

26. An industrial film or industrial sheet comprising the molded product according to claim 24.

27. A thermoformed container comprising the molded product according to claim 24.

28. A blow-molded container comprising the molded product according to claim 24.

29. A fuel container comprising the blow-molded container according to claim 28.

30. A bottle-shaped container comprising the blow-molded container according to claim 28.

31. A tube comprising the molded product according to claim 24.

32. A pipe comprising the molded product according to claim 24.

33. A paper container comprising the molded product according to claim 24.

34. A monolayer film formed from the gas barrier resin composition according to any one of claims 1 to 20.

35. A multilayer film comprising at least one layer formed from the gas barrier resin composition according to any one of claims 1 to 20.

36. A vapor deposition film comprising:

the monolayer film according to claim 34, or the multilayer film according to claim 35 comprising, as an outermost layer, at least one of the layer formed from the gas barrier resin composition; and

at least one inorganic vapor deposition layer, being provided on an exposed surface of the monolayer film or the layer formed from the gas barrier resin composition of the multilayer film.

37. A multilayer structure comprising:

the vapor deposition film according to claim 36; and

an other layer provided on the inorganic vapor deposition layer of the vapor deposition film.

38. A heat-sealing film comprising:

the monolayer film according to claim 34;

the multilayer film according to claim 35;

the vapor deposition film according to claim 36; or

the multilayer structure according to claim 37.

39. A packaging material comprising at least one layer constituted from the gas barrier resin composition according to any one of claims 1 to 20.

40. A plant cultivation medium comprising a molded product formed from a resin composition, wherein

the resin composition is the gas barrier resin composition according to any one of claims 1 to 20.