CLAIMS

1. A polyisocyanate composition comprising, on the basis of a total mass of the polyisocyanate composition:

97 ~~weight~~mass% or more of a polyisocyanate; and

2.0 mass ppm or more and 1.0×10^4 mass ppm or less of a compound having at least one unsaturated bond in which the compound is a different compound from the polyisocyanate, or 5.0 mass ppm or more and 2.0×10^4 mass ppm or less of at least one inactive compound selected from the group consisting of the following Compound A, Compound B, Compound C, Compound D, Compound E, Compound F and Compound G~~a hydrocarbon compound, an ether compound, a sulfide compound, a halogenated hydrocarbon compound, a Si-containing hydrocarbon compound, a Si-containing ether compound, and a Si-containing sulfide compound.~~

Compound A: Aliphatic hydrocarbon compounds having a linear-chain, branched-chain, or cyclic structure;

Compound B: Aromatic hydrocarbon compounds which may be substituted with an aliphatic hydrocarbon group;

Compound C: Compounds having an ether bond or a sulfide bond, and an aliphatic hydrocarbon group, to which the same or a different aliphatic hydrocarbon compound is bonded through the ether bond or the sulfide bond;

Compound D: Compounds having an ether bond or a sulfide bond, and an aromatic hydrocarbon group, to which the same or a different aromatic hydrocarbon compound is bonded through the ether bond or the sulfide bond;

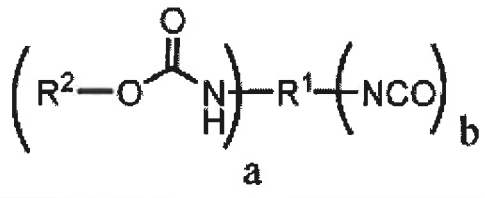
Compound E: Compounds having an ether bond or a sulfide bond, an aliphatic hydrocarbon group, and an aromatic hydrocarbon group;

Compound F: Halides in which at least one hydrogen atom constituting an aliphatic hydrocarbon compound or at least one hydrogen atom constituting an aromatic hydrocarbon compound is substituted with a halogen atom;

Compound G: Compounds in which a part or all of carbon atoms of the above-described compound A to compound E is substituted with silicon atoms;

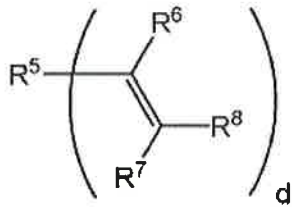
the unsaturated bond is a carbon-carbon double bond or a carbon-oxygen double bond, and the carbon-carbon double bond is not a carbon-carbon double bond that constitutes an aromatic ring;

the compound having at least one unsaturated bond is at least one compound selected from the group consisting of a compound represented by formula (1), (21) or (22):



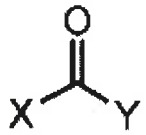
(1)

wherein R^1 and R^2 each independently represents an organic group, a represents an integer of 1 to 5, b represents an integer of 0 to 4, and the sum of a and b is 2 to 5;



(21)

wherein R^5, R^6, R^7, and R^8 each independently represents a hydrogen atom, a halogen atom, or an organic group having 1 to 10 carbon atoms, R^5 to R^8 are not simultaneously hydrogen atoms, and d represents an integer of 1 to 3;



(22)

wherein X represents an amino group which may be substituted with an organic group having 1 to 20 carbon atoms, and Y represents an amino group which may be substituted with an organic group having 1 to 20 carbon atoms or an organic group having 0 to 20 carbon atoms.

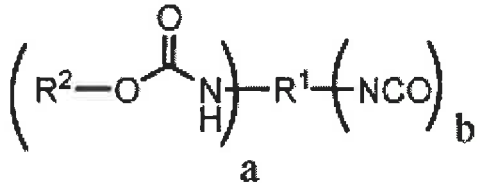
~~2. The composition according to claim 1, comprising the polyisocyanate, and the compound having at least one unsaturated bond, wherein~~

~~the unsaturated bond is a carbon-carbon double bond or a carbon-oxygen double bond, and the carbon-carbon double bond is not a carbon-carbon double bond that constitutes an aromatic ring.~~

~~3~~2. The composition according to claim ~~2~~1, wherein the compound having at least one unsaturated bond comprises a carbonic acid derivative represented by the formula (22).

~~4~~3. The composition according to claim ~~3~~2, wherein the carbonic acid derivative is at least one carbonic acid ester selected from the group consisting of dimethyl carbonate, diethyl carbonate, dibutyl carbonate, dipentyl carbonate, and dihexyl carbonate, or an N-unsubstituted carbamic acid ester.

~~5~~4. The composition according to claim ~~3 or 4~~2 or 3, wherein the compound having at least one unsaturated bond further comprises a compound represented by formula (1):



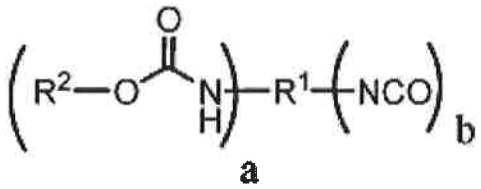
(1)

~~wherein R^1 and R^2 each independently represents an organic group, a represents an integer of 1 to 5, b represents an integer of 0 to 4, and the sum of a and b is 2 to 5~~.

~~6~~5. The composition according to claim ~~5~~4, further comprising at least one inactive compound selected from the group consisting of the Compound A, Compound B, Compound C, Compound D, Compound E, Compound F and Compound G~~hydrocarbon compound, the ether compound, the sulfide compound, the halogenated hydrocarbon compound, the Si-containing hydrocarbon compound, the Si-containing ether compound, and the Si-containing sulfide compound~~.

~~7~~6. The composition according to claim 1, comprising the polyisocyanate, and the compound having at least one unsaturated bond, wherein

the compound having at least one unsaturated bond comprises a compound represented by formula (1):



(1)

~~wherein R^1 and R^2 each independently represents an organic~~

~~group, a represents an integer of 1 to 5, b represents an integer of 0 to 4, and the sum of a and b is 2 to 5~~.

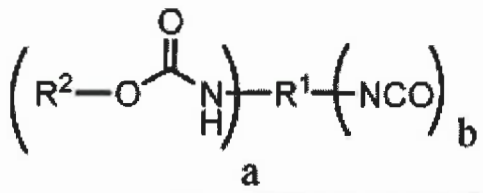
~~8~~7. The composition according to claim ~~7~~6, further comprising at least one inactive compound selected from the group consisting of the Compound A, Compound B, Compound C, Compound D, Compound E, Compound F and Compound G~~hydrocarbon compound, the ether compound, the sulfide compound, the halogenated hydrocarbon compound, the Si-containing hydrocarbon compound, the Si-containing ether compound, and the Si-containing sulfide compound~~.

~~9~~8. The composition according to claim 1, comprising the polyisocyanate, and at least one inactive compound selected from the group consisting of the Compound A, Compound B, Compound C, Compound D, Compound E, Compound F and Compound G~~hydrocarbon compound, the ether compound, the sulfide compound, the halogenated hydrocarbon compound, the Si-containing hydrocarbon compound, the Si-containing ether compound, and the Si-containing sulfide compound~~.

~~10~~9. The composition according to claim ~~9~~8, further comprising the compound having at least one unsaturated bond, wherein

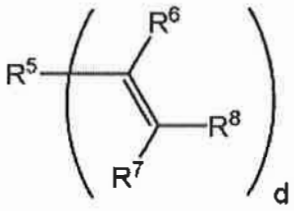
the unsaturated bond is a carbon-carbon double bond or a carbon-oxygen double bond, and the carbon-carbon double bond is not a carbon-carbon double bond that constitutes an aromatic ring

the compound having at least one unsaturated bond is at least one compound selected from the group consisting of a compound represented by formula (1), (21) or (22):



(1)

wherein R^1 and R^2 each independently represents an organic group, a represents an integer of 1 to 5, b represents an integer of 0 to 4, and the sum of a and b is 2 to 5;



(21)

wherein R^5, R^6, R^7, and R^8 each independently represents a hydrogen atom, a halogen atom, or an organic group having 1 to 10 carbon atoms, R^5 to R^8 are not simultaneously hydrogen atoms, and d represents an integer of 1 to 3;



(22)

wherein X represents an amino group which may be substituted with an organic group having 1 to 20 carbon atoms, and Y represents an amino group which may be substituted with an organic group having 1 to 20 carbon atoms or an organic group having 0 to 20 carbon atoms.

~~11~~10. The composition according to claim ~~10~~9, wherein the compound having at least one unsaturated bond comprises a carbonic acid derivative represented by the formula (22).

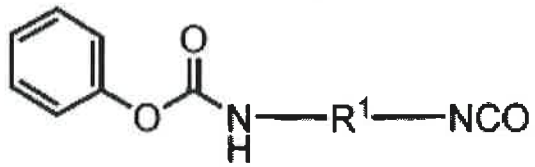
~~12~~11. The composition according to claim ~~11~~10, wherein the carbonic acid derivative is at least one carbonic acid ester selected from the group consisting of dimethyl carbonate, diethyl carbonate, dibutyl carbonate, dipentyl carbonate, and dihexyl carbonate, or an N-unsubstituted

carbamic acid ester.

~~13~~12. The composition according to claim ~~5 or 7~~4 or 6, wherein the compound represented by formula (1) is a compound represented by formula (1-3) or (1-4):



(1-3)



(1-4)

wherein R^1 each independently represents an organic group.

~~14~~13. The composition according to claim ~~13~~12, wherein the R^1 is a hexamethylene group.

~~15~~14. The composition according to claim ~~6, 8 or 9~~5, 7 or 8, wherein the inactive compound is at least one compound selected from the group consisting of benzyltoluene, dibenzyl ether, and hexadecane.

~~16~~15. The composition according to claim ~~2 or 10~~1 or 9, wherein the compound having at least one unsaturated bond is at least one compound selected from the group consisting of styrene, α-methylstyrene, pentene, and octene.

~~17~~16. A method for preventing coloration in distillation purification of a polyisocyanate, comprising:

a step of adding, on the basis of a total mass of the polyisocyanate, 2.0 mass ppm or more and 1.0×10^4 mass ppm or less of a compound having at least one unsaturated bond in which the compound is a different compound from the polyisocyanate, to the

polyisocyanate before the distillation purification.

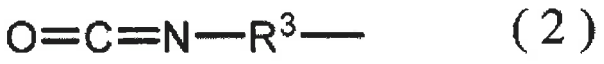
~~18. A polyisocyanate composition comprising the polyisocyanate distillation-purified by the method according to claim 17.~~

~~19~~17. A manufacturing method of an isocyanate polymer comprising reacting the polyisocyanate comprised in the composition according to any one of claims ~~1 to 16 and 18~~1 to 15, wherein

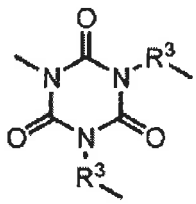
the polyisocyanate comprised in the composition is a diisocyanate,

the isocyanate polymer has a unit represented by formula (2) and at least one unit selected from the group consisting of units represented by formulas (3), (4), (5), (6), (7), (8) and (9), respectively, and

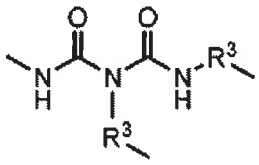
a nitrogen atom constituting the isocyanate polymer is bonded to a carbon atom:



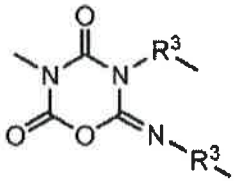
(2)



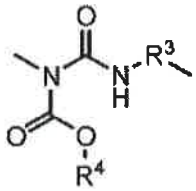
(3)



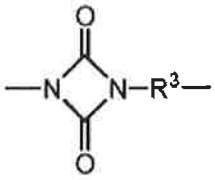
(4)



(5)



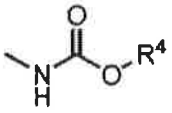
(6)



(7)



(8)



(9)

wherein R^3 each independently represents a divalent

hydrocarbon group, and R^4 each independently represents a monovalent organic group.

~~20~~18. A composition comprising the isocyanate polymer manufactured by the method according to claim ~~19~~17.