[CLAIMS]

[Claim 1]

A kit for use in subjecting a treatment target to chemical mechanical polishing and further washing the treatment target subjected to chemical mechanical polishing, the kit comprising:

a polishing liquid; and

a washing liquid,

wherein the polishing liquid includes an abrasive grain, a nonionic surfactant, and a specific azole compound selected from the group consisting of benzotriazole and derivatives thereof and has a pH of 7.0 or more, and

the washing liquid includes an amine compound.

[Claim 2]

The kit according to claim 1, wherein the pH of the polishing liquid is 8.8 to 11.5.

[Claim 3]

The kit according to claim 1 or 2, wherein the abrasive grain is a colloidal silica having an average particle diameter of 5 to 100 nm.

[Claim 4]

The kit according to any one of claims 1 to 3, wherein a mass ratio of a content of the nonionic surfactant to a content of the specific azole compound is 0.01 to 100.00.

[Claim 5]

The kit according to any one of claims 1 to 4, wherein at least one of the polishing liquid or the washing liquid further includes an organic acid.

[Claim 6]

The kit according to claim 5, wherein the organic acid includes at least one organic acid selected from the group consisting of polycarboxylic acids and polyphosphonic acids.

[Claim 7]

The kit according to any one of claims 1 to 6, wherein the polishing liquid further includes an alcohol.

[Claim 8]

The kit according to claim 7, wherein a content of the alcohol is 0.1 to 1000 mass ppm relative to a total mass of the polishing liquid.

[Claim 9]

The kit according to claim 7, wherein the alcohol is selected from the group consisting of methanol, ethanol, 1-propanol, and isopropanol.

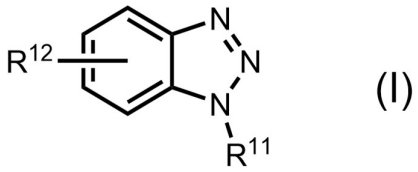
[Claim 10]

The kit according to any one of claims 1 to 9, wherein the specific azole compound included in the polishing liquid comprises at least two specific azole compounds.

[Claim 11]

The kit according to claim 10, wherein at least one of the specific azole compounds is a compound represented by formula (I) or a compound represented by formula (II),

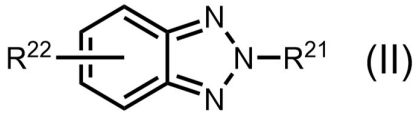
[Chem. 1]



(I)

in formula (I), R^{11} and R^{12} each independently represent a hydrogen atom, a hydroxy group, a carboxy group, or an optionally substituted hydrocarbon group, provided that the compound represented by formula (I) does not include any of benzotriazole, 5-methylbenzotriazole, 5-chlorobenzotriazole, and 5-butylbenzotriazole,

[Chem. 2]



(II)

in formula (II), R^{21} and R^{22} each independently represent a hydrogen atom, a hydroxy group, a carboxy group, or an optionally substituted hydrocarbon group, provided that the compound represented by formula (II) does not include any of benzotriazole, 5-methylbenzotriazole, 5-chlorobenzotriazole, and 5-butylbenzotriazole.

[Claim 12]

The kit according to any one of claims 1 to 11, wherein the nonionic surfactant is an alcohol alkoxylate.

[Claim 13]

The kit according to any one of claims 1 to 12, wherein the washing liquid has a pH of 9.0 to 14.0.

[Claim 14]

The kit according to any one of claims 1 to 13, wherein the washing liquid further includes an anticorrosive.

[Claim 15]

The kit according to claim 14, wherein the anticorrosive includes at least one compound selected from the group consisting of purine and purine derivatives.

[Claim 16]

The kit according to any one of claims 1 to 15, wherein a content of the amine compound is 0.06 to 8.0 mass% relative to a total mass of the washing liquid.

[Claim 17]

The kit according to any one of claims 1 to 16, wherein a ratio of a content of the nonionic surfactant relative to a total mass of the polishing liquid to a content of the amine compound relative to a total mass of the washing liquid is 0.05 to 8.00.

[Claim 18]

The kit according to any one of claims 1 to 17, wherein a ratio of a content of the specific azole compound relative to a total mass of the polishing liquid to a content of the amine compound relative to a total mass of the washing liquid is 0.005 to 0.90.

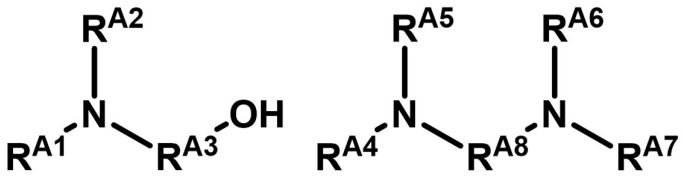
[Claim 19]

The kit according to any one of claims 1 to 18, wherein the amine compound is at least one amine compound selected from the group consisting of secondary amine compounds, tertiary amine compounds, and quaternary ammonium compounds.

[Claim 20]

The kit according to any one of claims 1 to 19, wherein the amine compound includes at least one selected from the group consisting of a compound represented by formula (A1) and a compound represented by formula (A2),

[Chem. 3]



(A1) (A2)

in formula (A1),

R^{A1} and R^{A2} each independently represent a hydrogen atom or an optionally substituted alkyl group having 1 to 3 carbon atoms, provided that at least one of R^{A1} or R^{A2} represents an optionally substituted alkyl group having 1 to 3 carbon atoms,

R^{A3} represents an optionally substituted alkylene group having 1 to 4 carbon atoms, and

two of R^{A1} to R^{A3} may be bonded to each other through a single bond or a divalent linking group to form a ring,

in formula (A2),

R^{A4} to R^{A7} each independently represent a hydrogen atom or an optionally substituted alkyl group having 1 to 3 carbon atoms, provided that at least one of R^{A4} to R^{A7} represents an optionally substituted alkyl group,

R^{A8} represents an alkylene group having 1 to 6 carbon atoms that optionally has a hydroxy group and optionally has a linking group represented by $-NR^{Ax}-$ or -O-, where R^{Ax} represents a hydrogen atom or an alkyl group having 1 to 3 carbon atoms, and

two of R^{A4} to R^{A7} may be bonded to each other through a single bond or a divalent linking group to form a ring.

[Claim 21]

The kit according to any one of claims 1 to 20, wherein the treatment target includes copper.

[Claim 22]

A method for manufacturing a semiconductor device using the kit according to any one of claims 1 to 21, the method comprising:

a step 1 of subjecting a treatment target to chemical mechanical polishing using the polishing liquid; and

a step 2, after the step 1, of washing the treatment target subjected to chemical mechanical polishing using the washing liquid.

[Claim 23]

The method according to claim 22, further comprising:

a step 1a, after step 1 and prior to step 2, of pad washing the treatment target subjected to chemical mechanical polishing using the washing liquid as a composition for pad washing.