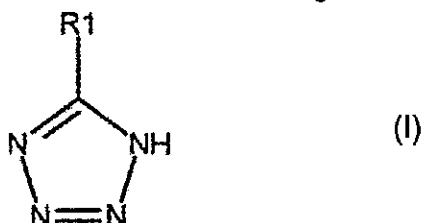


Claims

1. Use of a chemical mechanical polishing (CMP) composition (Q) for chemical mechanical polishing of a substrate (S) comprising (i) cobalt and/or (ii) a cobalt alloy, wherein the CMP composition (Q) comprises

- (A) Inorganic particles
- (B) a substituted tetrazole derivative of the general formula (I)



wherein R¹ is H, hydroxy, alkyl, aryl, alkylaryl, amino, carboxyl, alkylcarboxyl, thio or alkylthio.

- (C) at least one amino acid
- (D) at least one oxidizer,
- (E) an aqueous medium and

wherein the total amount of the substituted tetrazole derivative (B) of general formula (I) is in the range of from 0.003 wt.-% to 0.1 wt.-% based on the total weight of the respective CMP composition, and

wherein the CMP composition (Q) has a pH of from 7 to 10.

2. Use of a CMP composition (Q) according to claim 1, wherein the inorganic particles (A) are colloidal inorganic particles.
3. Use of a CMP composition (Q) according to anyone of claims 1 to 2, wherein the colloidal inorganic particles are silica particles.
4. Use of a CMP composition (Q) according to anyone of the claims 1 to 3, wherein the substituted tetrazole derivative (B) is of the general formula (I) and wherein R¹ is aryl, arylalkyl, amino, carboxyl, alkylcarboxyl or alkylthio.
5. Use of a CMP composition (Q) according to anyone of the claims 1 to 4, wherein the substituted tetrazole derivative (B) is of the general formula (I) and wherein R¹ is phenyl, 4-methylphenyl, amino, acetic acid or ethylthio.
6. Use of a CMP composition (Q) according to anyone of the claims 1 to 5, wherein the at least one amino acids (C) is glycine, alanine, leucine, valine, cysteine, serine and proline or a salt thereof.

7. Use of a CMP composition (Q) according to anyone of the claims 1 to 6, wherein the total amount of the at least one amino acid (C) is in the range of from 0.1 wt.-% to 2.25 wt.-% based on the total weight of the respective CMP composition.
8. Use of a CMP composition (Q) according to anyone of claims 1 to 7, wherein the oxidizer comprises a peroxide.
9. Use of a CMP composition (Q) according to anyone of claims 1 to 8, wherein the oxidizer is hydrogen peroxide.
10. A chemical mechanical polishing (CMP) composition (Q) comprising:
 - (A) colloidal silica particles in a total amount of from 0.01 wt.-% to 3 wt.-% based on the total weight of the respective CMP composition
 - (B) at least one substituted tetrazole derivative (B) selected from the group consisting of 5-(4-methylphenyl)-1H-tetrazole and 5-(ethylthio)-1H-tetrazole in a total amount of from 0,003 wt.-% to 0,15 wt.-% based on the total weight of the respective CMP composition
 - (C) at least one amino acids (C) selected from the group consisting of glycine, alanine, leucine, valine, cysteine, serine and proline or a salt thereof, in a total amount of from 0.2 wt.-% to 0.9 wt.-% based on the total weight of the respective CMP composition
 - (D) hydrogen peroxide in a total amount of from 0.2 wt.-% to 2 wt.-% based on the total weight of the respective CMP composition.
 - (E) an aqueous medium,
 wherein the CMP composition (Q) has a pH of from 7.2 to 9.4.
11. A process for the manufacture of a semiconductor device comprising the chemical mechanical polishing of a substrate (S) used in the semiconductor industry wherein the substrate (S) comprises
 - (i) cobalt and/or
 - (ii) a cobalt alloy
 in the presence of a CMP composition (Q) as defined in anyone of the claims 1 to 10.
12. The process according to claim 11, wherein the static etch rate (SER) of cobalt is below 100 Å/min.
13. The process according to anyone of the claims 11 to 12, wherein the cobalt material removal rate (MRR) is adjusted to a range of from 300 to 6000 Å/min.