CLAIMS

1. A CMP polishing liquid comprising: abrasive grains; and a cationic polymer, wherein

the cationic polymer has a main chain containing a nitrogen atom and a carbon atom and a hydroxyl group bonded to the carbon atom and contains a reaction product of a raw material containing at least dimethylamine, ammonia, and epichlorohydrin, and

the CMP polishing liquid has a pH of less than 6.0.

2. The CMP polishing liquid according to claim 1, wherein the cationic polymer includes a plurality of kinds of structure units each having the main chain.

3. The CMP polishing liquid according to claim 1 or 2, wherein a weight average molecular weight of the cationic polymer is 10000 to 1000000.

4. The CMP polishing liquid according to any one of claims 1 to 3, wherein a content of the cationic polymer is 0.00001 to 1 part by mass with respect to 100 parts by mass of the CMP polishing liquid.

5. The CMP polishing liquid according to any one of claims 1 to 4, wherein the abrasive grains contain a cerium-based compound.

6. The CMP polishing liquid according to claim 5, wherein the cerium-based compound is cerium oxide.

7. The CMP polishing liquid according to any one of claims 1 to 6, wherein a content of the abrasive grains is 0.01 to 10 parts by mass with respect to 100 parts by mass of the CMP polishing liquid.

8. The CMP polishing liquid according to any one of claims 1 to 7, further comprising at least one cyclic compound selected from the group

consisting of an amino group-containing aromatic compound and a nitrogen-containing heterocyclic compound.

9. The CMP polishing liquid according to claim 8, wherein the cyclic compound contains the amino group-containing aromatic compound, and

the amino group-containing aromatic compound contains a compound having an amino group and at least one selected from the group consisting of a carboxy group and a carboxylate group, as a functional group bonded to an aromatic ring.

10. The CMP polishing liquid according to claim 8 or 9, wherein the cyclic compound contains the nitrogen-containing heterocyclic compound, and

the nitrogen-containing heterocyclic compound contains a compound having a pyridine ring.

11. The CMP polishing liquid according to claim 10, wherein the nitrogen-containing heterocyclic compound contains at least one selected from the group consisting of pyridinecarboxylic acid, 1-(2-pyridinyl)-1-ethanone, and pyridine-3-carboxamide.

12. The CMP polishing liquid according to any one of claims 8 to 11, wherein a content of the cyclic compound is 0.001 to 1 part by mass with respect to 100 parts by mass of the CMP polishing liquid.

13. The CMP polishing liquid according to any one of claims 1 to 12, wherein the pH is in the range of 2.0 to 5.0.

14. The CMP polishing liquid according to any one of claims 1 to 13, wherein the CMP polishing liquid is used for polishing an insulating material.

15. The CMP polishing liquid according to claim 14, wherein the insulating material contains silicon oxide.

16. A polishing method comprising a step of polishing a material to be polished by using the CMP polishing liquid according to any one of claims 1 to 15.