

POLISHING COMPOSITION

TECHNICAL FIELD

[0001] The present invention relates to a polishing composition.

BACKGROUND ART

[0002] During polishing of a silicon wafer by chemical mechanical polishing (CMP), a polishing process with multiple steps, such as three or four steps, is performed to achieve high-precision planarization. The slurry used for the last polishing step usually contains a water-soluble polymer such as hydroxyethyl cellulose (HEC) or polyvinyl alcohol (PVA).

[0003] For example, JP 2012-216723 A discloses a polishing composition containing at least one water-soluble polymer selected from vinyl alcohol-based resins having a 1,2-diol structural unit, and alkali.

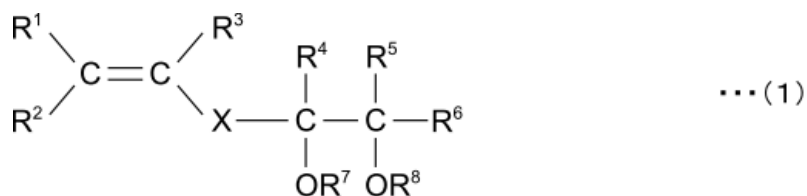
DISCLOSURE OF THE INVENTION

[0004] Recently, demands have been made for suppressing surface defects with respect to stricter standards and reducing "haze" on the surface.

[0005] The present invention was made to solve these problems. An object of the present invention is to provide a polishing composition that can reduce surface defects and haze.

[0006] According to an embodiment of the present invention, a polishing composition includes: abrasives; at least one water-soluble polymer selected from vinyl alcohol-based resins having a 1,2-diol structural unit expressed by Formula (1) provided below; a polyalcohol; and an alkali compound, wherein the polyalcohol includes polyoxyethylene methyl glucoside and polyoxypropylene methyl glucoside.

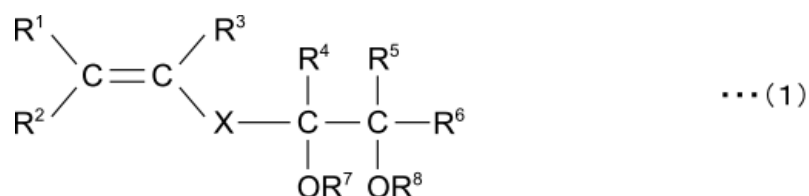
[0007] [Formula 1]



(In the formula, each of "R¹", "R²" and "R³" independently indicates a hydrogen atom or an organic group; "X" indicates a single bond or a joining chain; each of "R⁴", "R⁵" and "R⁶" independently indicates a hydrogen atom or an organic group; and each of "R⁷" and "R⁸" independently indicates a hydrogen atom.)

CLAIMS

1. A polishing composition comprising:
 abrasives;
 at least one water-soluble polymer selected from vinyl alcohol-based resins having a 1,2-diol structural unit expressed by Formula (1) provided below;
 a polyalcohol; and
 an alkali compound,
 [Formula 1]



In the formula, each of "R¹", "R²" and "R³" independently indicates a hydrogen atom or an organic group; "X" indicates a single bond or a joining chain; each of "R⁴", "R⁵" and "R⁶" independently indicates a hydrogen atom or an organic group; and each of "R⁷" and "R⁸" independently indicates a hydrogen atom, and wherein the polyalcohol includes polyoxyethylene methyl glucoside and polyoxypropylene methyl glucoside.

2. The polishing composition according to claim 1, further comprising: a non-ionic surfactant.
3. The polishing composition according to claim 1, wherein the polyalcohol includes two or more types.
4. The polishing composition according to claim 1, wherein the polyalcohol is an alkylene oxide derivative of methylglucoside.
5. The polishing composition according to claim 3, wherein the polyalcohol is an alkylene oxide derivative of methylglucoside.

6. The polishing composition according to claim 2, wherein the non-ionic surfactant is a diamine compound including an alkylenediamine structure with two nitrogen atoms expressed by General Formula (3) provided below and having at least one block polyether bonded to the two nitrogen atoms of the alkylenediamine structure, where the block polyether is made of an oxyethylene group and an oxypropylene group bonded together,
[Formula 3]



where n indicates an integer equal to or larger than 1.