WHAT IS CLAIMED IS:

1. A polishing pad comprising a polishing layer,

wherein the polishing layer comprises a cured product of a preliminary composition containing a urethane-based prepolymer, and

the preliminary composition contains a reaction product of an isocyanate compound and a polyol compound, and

the isocyanate compound comprises an aromatic diisocyanate compound and an alicyclic diisocyanate compound, and

the total amount of the polyol compound may be about 100 parts by weight to about 250 parts by weight based on 100 parts by weight of the total amount of the isocyanate compound among the total components for producing the urethane-based prepolymer, and

wherein a nuclear magnetic resonance (NMR) ^{13}C spectrum of a processed composition prepared by adding 1 g of the polishing layer to a 0.3 M aqueous solution of potassium hydroxide (KOH) and allowing the mixture to react in a closed container at a temperature of 150°C for 48 hours includes a first peak appearing at 15 ppm to 18 ppm, a second peak appearing at 9 ppm to 11 ppm, and a third peak appearing at 138 ppm to 143 ppm, and

an area ratio of the third peak to the second peak is 5:1 to 10:1.

2. The polishing pad of claim 1, wherein

an area ratio of the first peak to the second peak is 10:1 to 10:5, and

an area ratio of the first peak to the third peak is 10:5 to 10:10.

3. The polishing pad of claim 1, wherein

~~the polishing layer comprises a cured product of a preliminary composition containing~~

~~a urethane-based prepolymer,~~

a nuclear magnetic resonance (NMR) ^{13}C spectrum of the preliminary composition shows a fourth peak and a fifth peak in descending order of peak position (ppm) at 16 ppm to 20 ppm,

an area ratio of the fourth peak to the fifth peak is 1:1 to 10:1.

~~the preliminary composition contains a reaction product of an isocyanate compound and a polyol compound,~~

~~the isocyanate compound comprises an aromatic diisocyanate compound,~~

the polyol compound comprises a low-molecular-weight polyol having a weight-average molecular weight (Mw) of about 100 g/mol to less than about 300 g/mol and a high-molecular-weight polyol having a weight-average molecular weight (Mw) of about 300 g/mol to about 1,800 g/mol,

the aromatic isocyanate compound comprises 2,4-toluene diisocyanate (2,4-TDI),

the preliminary composition contains a urethane-based prepolymer comprising at least one of a first unit structure derived from 2,4-TDI subjected to urethane reaction at one end, and a second unit structure derived from 2,4-TDI subjected to urethane reaction at both ends, and

the preliminary composition has an isocyanate group content of 5 wt% to 11 wt%.

4. The polishing pad of claim 1, wherein the polishing layer has a value of 0.1 to 0.6 as calculated according to Equation 1 below:

[Equation 1]

$$\frac{Mp-Mn}{Mw-Mn}$$

wherein Mw, Mn and Mp are the molecular weights of the processed composition, measured by gel permeation chromatography (GPC),

Mw is the weight-average molecular weight of the depolymerized composition,

Mn is the number-average molecular weight of the depolymerized composition, and

Mp is the peak molecular weight of the depolymerized composition.

5. The polishing pad of claim 1, wherein the processed composition has a number-average molecular weight (Mn) of 1,800 g/mol to 2,800 g/mol, a weight-average molecular weight (Mw) of 2,000 g/mol to 3,000 g/mol, a peak molecular weight(Mp) of 2,000 g/mol to 3,000 g/mol, and a polydispersity index (PDI, Mw/Mn) of 1 to 1.2.

6. A method for producing a polishing pad, the method comprising steps of:

i) preparing a preliminary composition containing a reaction product of an isocyanate compound and a polyol compound;

ii) preparing a composition for producing a polishing layer containing the preliminary composition, a foaming agent and a curing agent; and

iii) producing a polishing layer by curing the composition for producing a polishing layer,

wherein a nuclear magnetic resonance (NMR) ^{13}C spectrum of a processed composition prepared by adding 1 g of the polishing layer to a 0.3 M aqueous solution of potassium hydroxide (KOH) and allowing the mixture to react in a closed container at a temperature of 150°C for 48 hours includes a first peak appearing at 15 ppm to 18 ppm, a second peak appearing at 9 ppm to 11 ppm, and a third peak appearing at 138 ppm to 143 ppm, and

an area ratio of the third peak to the second peak is 5:1 to 10:1, and

the isocyanate compound comprises an aromatic diisocyanate compound and an alicyclic diisocyanate compound, and

the total amount of the polyol compound may be about 100 parts by weight to about 250 parts by weight based on 100 parts by weight of the total amount of the isocyanate compound among the total components for the preliminary composition.

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7. The method of claim 6, wherein

an area ratio of the first peak to the second peak is 10:1 to 10:5,

an area ratio of the first peak to the third peak is 10:5 to 10:10,

a nuclear magnetic resonance (NMR) ^{13}C spectrum of the preliminary composition shows a fourth peak and a fifth peak in descending order of peak position (ppm) at 16 ppm to 20 ppm, and

an area ratio of the fourth peak to the fifth peak is 1:1 to 10:1.

8. The method of claim 6, wherein the polishing layer has a value of 0.1 to 0.6 as calculated according to Equation 1 below:

[Equation 1]

$$\frac{Mp-Mn}{Mw-Mn}$$

wherein Mw, Mn and Mp are the molecular weights of the processed composition, measured by gel permeation chromatography (GPC)

Mw is the weight-average molecular weight of the depolymerized composition,

Mn is the number-average molecular weight of the depolymerized composition, and

Mp is the peak molecular weight of the depolymerized composition.

9. A method for fabricating a semiconductor device, the method comprising steps of:

providing a polishing pad comprising a polishing layer; and

placing a polishing target surface of a polishing target so as to be in contact with a polishing surface of the polishing layer and then polishing the polishing target while rotating relative to each other,

wherein the polishing target comprises a semiconductor substrate,

a nuclear magnetic resonance (NMR) ^{13}C spectrum of a processed composition prepared by adding 1 g of the polishing layer to a 0.3 M aqueous solution of potassium hydroxide (KOH) and allowing the mixture to react in a closed container at a temperature of 150°C for 48 hours includes a first peak appearing at 15 ppm to 18 ppm, a second peak appearing at 9 ppm to 11 ppm, and a third peak appearing at 138 ppm to 143 ppm, and

an area ratio of the third peak to the second peak is 5:1 to 10:1, and

the polishing layer comprises a cured product of a preliminary composition containing a urethane-based prepolymer, and

the preliminary composition contains a reaction product of an isocyanate compound and a polyol compound, and

the isocyanate compound comprises an aromatic diisocyanate compound and an alicyclic diisocyanate compound, and

the total amount of the polyol compound may be about 100 parts by weight to about 250 parts by weight based on 100 parts by weight of the total amount of the isocyanate compound among the total components for producing the urethane-based prepolymer.

10. The method of claim 9, wherein the polishing layer has a value of 0.1 to 0.6 as calculated according to Equation 1 below:

[Equation 1]

$$\frac{Mp-Mn}{Mw-Mn}$$

wherein Mw, Mn and Mp are the molecular weights of the processed composition, measured by gel permeation chromatography (GPC),

Mw is a weight-average molecular weight of the depolymerized composition,

Mn is a number-average molecular weight of the depolymerized composition, and

Mp is a peak molecular weight of the depolymerized composition.