

What is claimed is:

1. An insulation layer etchant composition, comprising:

phosphoric acid;

5 a silane compound including at least one of a mono-functional silane compound, a di-functional silane compound and a compound in which a plurality of mono-functional silane groups or di-functional silane groups are combined via a linker group; and

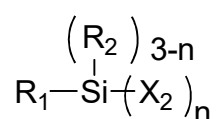
a remainder of water,

10 wherein a fluorine ion generating species is excluded from the insulation layer etchant composition.

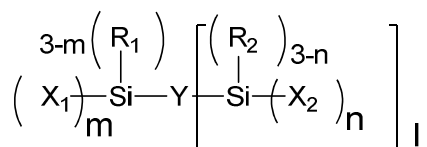
2. The insulation layer etchant composition according to claim 1, wherein the silane compound includes a compound represented by General Formula 1 or 2

15 below:

[General Formula 1]



[General Formula 2]



20 wherein, in the General Formulae 1 and 2, X_1 and X_2 are each independently halogen, $-OR_3$ group or a phosphate group,

R₃ is a C1 to C10 alkyl group, a C1 to C10 alkyl group including an ether bond or a C6 to C12 aryl group,

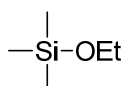
R₁ and R₂ are each independently hydrogen, a C1 to C12 alkyl group or a C6 to C12 aryl group,

5 Y is a divalent or trivalent organic group, and

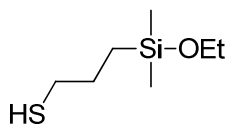
l, m and n are each an integer of 1 or 2.

3. The insulation layer etchant composition according to claim 2, wherein the silane compound includes at least one selected from a group consisting of
10 compounds represented by Chemical Formulae 1 to 9 below:

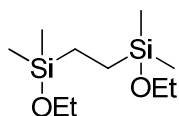
[Chemical Formula 1]



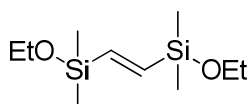
[Chemical Formula 2]



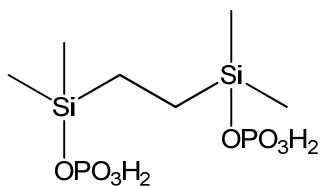
15 [Chemical Formula 3]



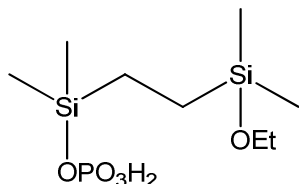
[Chemical Formula 4]



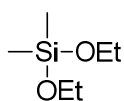
[Chemical Formula 5]



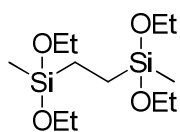
[Chemical Formula 6]



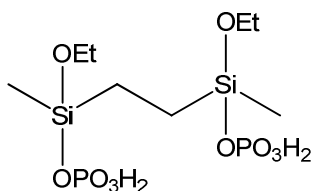
[Chemical Formula 7]



[Chemical Formula 8]



[Chemical Formula 9]



4. The insulation layer etchant composition according to claim 1, wherein the silane compound includes halogen, an alkoxy group or a phosphate group as a functional group, and the silane compound does not include a tri-functional silane compound or a tetra-functional silane compound.

5. The insulation layer etchant composition according to claim 1, wherein a compound including a siloxane bond (-Si-O-Si-) is excluded from the composition.

5 6. The insulation layer etchant composition according to claim 1, wherein an amount of the silane compound is in a range from 0.0001 wt% to 1 wt% based on a total weight of the composition.

7. A method of forming patterns, comprising:
10 forming an oxide layer and a nitride layer on a substrate; and
selectively etching the nitride layer using the insulation layer etchant composition according to any one of claims 1 to 6.

8. The method according to claim 7, wherein the oxide layer includes a
15 silicon oxide layer and the nitride layer includes a silicon nitride layer.