CLAIMS

[Claim 1]

A semiconductor cleaning chemical liquid essentially comprising isopropyl alcohol,

wherein a content of a tert-butyl alcohol is at most 1,000 ppb by mass,

wherein a content of ethyl alcohol is at most 1,000 ppb by mass, and

wherein a content of a six-carbon alcohol is at most 1 ppb by mass.

[Claim 2]

A method for producing a semiconductor cleaning chemical liquid consisting essentially of isopropyl alcohol, the method comprising:

reacting a raw material water and a raw material gas containing propylene and having an isobutene content of at most 1 ppm by volume and an ethylene content of at most 1 ppm by volume, by feeding to a continuous reactor,

wherein, a gas phase and a liquid phase exist upon the reacting, and the continuous reactor discharges gas components from the gas phase,

wherein a mass ratio of the raw material gas relative to the raw material water fed to the continuous reactor is 0.01 or more and 0.20 or less,

wherein a residence time of the raw material water inside the continuous reactor, which is a ratio of volume (L) of the liquid phase relative to a feed rate (L/min) of the raw material water fed to the continuous reactor, is 10 minutes or more and 25 minutes or less,

wherein a residence time of the gas component inside the continuous reactor, which is a ratio of volume (L) of the gas phase relative to a discharge rate (L/min) of the gas component discharged from the continuous reactor, is 10 minutes or more and 150 minutes or less, and

wherein a volume ratio of a discharge amount of the gas component discharged from the continuous reactor relative to a feed amount of the raw material gas fed to the continuous reactor is 0.03 or more and 0.30 or less.

[Claim 3]

The method for producing a semiconductor cleaning chemical liquid according to claim 2, further comprising:

recovering a crude isopropyl alcohol aqueous solution from the liquid phase; and

distilling the crude isopropyl alcohol aqueous solution in a high-boiling distillation column.

[Claim 4]

The method for producing a semiconductor cleaning chemical liquid according to claim 2 or 3, wherein the raw material gas has a propylene content of 99% by volume or more.

[Claim 5]

The method for producing a semiconductor cleaning chemical liquid according to claim 2 or 3,

wherein the continuous reactor has an internal temperature of 200°C or more and 300°C or less and

wherein the continuous reactor has an internal pressure of 150 atm or more and 280 atm or less.