calcium. However, Patent Literature 2 is an invention of suppressing generation of the sludge, and does not disclose a cleaning liquid of dissolving a sludge that is produced once.

[0014]

Accordingly, a cleaning liquid capable of effectively decomposing and cleaning the sludge produced during polishing of an alkali-free glass with hydrogen fluoride has not been known.

Solution to Problem

[0015]

The present invention is made in view of the problems. The present invention provides a cleaning liquid capable of decomposing a sludge generated during polishing of an alkali-free glass and a method of cleaning a polishing device.

[0016]

More specifically, the cleaning liquid according to the present invention is a cleaning liquid for dissolving a sludge containing aluminum and fluorine produced in a glass polishing device for polishing an alkali-free glass containing Ba and Sr and is characterized by containing $Al^{3}+$ ions, and as a source of the Al3+ ions, containing an aluminum chloride aqueous solution.

[0017]

The cleaning method according to the present invention is a method of cleaning a glass polishing device for polishing an alkali-free glass containing Ba and Sr, the method being characterized by including:

a liquid removing step of drawing a polishing liquid from the glass polishing device;

an injection step of injecting a cleaning liquid containing an Al^{3+} ion supplying agent into the glass polishing device;

a cleaning step of cleaning the glass polishing device with the cleaning liquid; and

a liquid discharging step of drawing the cleaning liquid from the glass polishing device.

wherein the cleaning liquid contains an aluminum chloride aqueous solution as a source of the Al3+ ion.

Advantageous Effects of Invention

[0018]

The cleaning liquid of the present invention is capable of effectively dissolving the sludge generated in the glass polishing device (in particular, a polishing device for polishing an alkali-free glass). Therefore, the sludge that is deposited and fixed in a pipe and a liquid tank of the polishing device can be removed. As a result, the polishing device can be normally

CLAIMS

1. A cleaning liquid for dissolving a sludge containing aluminum and fluorine produced in a glass polishing device, the cleaning liquid comprising an Al^{3+} ion.

2. The cleaning liquid according to claim 1, wherein a glass polished by the glass polishing device is an alkali-free glass.

3. The cleaning liquid according to claim 1 or 2, comprising any one or both of an aluminum chloride aqueous solution and an aluminum nitrate aqueous solution.

4. A method for cleaning a glass polishing device, the method comprising:

a liquid removing step drawing a glass polishing liquid from the glass polishing device;

an injection step injecting a cleaning liquid containing an Al^{3+} ion supplying agent into the glass polishing device;

a cleaning step cleaning the glass polishing device with the cleaning liquid; and

a liquid discharging step drawing the cleaning liquid from the glass polishing device.

5. The method for cleaning a glass polishing device according to claim 4 further comprising a water cleaning step cleaning the glass polishing device with cleaning water between the liquid removing step and the injection step.

6. The method for cleaning a glass polishing device according to claim 4 or 5 further comprising a rinsing step rinsing the glass polishing device with water, after the liquid discharging step.

7. The method for cleaning a glass polishing device according to claim 4 or 5, wherein a glass polished by the glass polishing device is an alkali-free glass.

8. The method for cleaning a glass polishing device according to claim 4 or 5, wherein the cleaning liquid contains any one or both of an aluminum chloride aqueous solution and an aluminum nitrate aqueous solution.

9. The method for cleaning a glass polishing device according to claim 4, further comprising:

a water cleaning step cleaning the glass polishing device with cleaning water between the liquid removing step and the injection step; and

a rinsing step rinsing the glass polishing device with water after the liquid discharging step.

10. The method for cleaning a glass polishing device according to claim 9, wherein a glass polished by the glass polishing device is an alkali-free glass.

11. The method for cleaning a glass polishing device according to claim 9, wherein the cleaning liquid contains any one or both of an aluminum chloride aqueous solution and an aluminum nitrate aqueous solution.

CLAIMS

1. A cleaning liquid for dissolving a sludge containing aluminum and fluorine produced in a glass polishing device for polishing an alkali-free glass containing Ba and Sr, the cleaning liquid containing an $Al^{3}+$ ion, and as a source of the $Al^{3}+$ ion, containing an aluminum chloride aqueous solution.

2. A method for cleaning a glass polishing device for polishing an alkali-free glass containing Ba and Sr, the method comprising:

a liquid removing step drawing a glass polishing liquid from the glass polishing device;

an injection step injecting a cleaning liquid containing an $Al^{3}+$ ion supplying agent into the glass polishing device;

a cleaning step cleaning the glass polishing device with the cleaning liquid; and

a liquid discharging step drawing the cleaning liquid from the glass polishing device,

wherein the cleaning liquid contains an aluminum chloride aqueous solution as a source of the $Al^{3}+$ ion.

3. The method for cleaning a glass polishing device according to claim 2 further comprising a water cleaning step cleaning the glass polishing device with cleaning water between the liquid removing step and the injection step.

4. The method for cleaning a glass polishing device according to claim 2 or 3 further comprising a rinsing step rinsing the glass polishing device with water, after the liquid discharging step.