

ABSTRACT

The water outlet of a subsystem that includes an ultraviolet oxidation device and the water inlet of each substrate treatment device are connected to each other via a main pipe. Hydrogen peroxide removal device (2) is installed between the ultraviolet oxidation device of the subsystem and a non-regenerative ion-exchange device. In addition, carbon dioxide supply device (4) is installed at the middle of pipe (3) that branches from the water outlet of the subsystem to reach substrate treatment device (1). According to an aspect, hydrogen peroxide removal device (2) is filled with a platinum-group metal catalyst. Thus, ultrapure water passed through the ultraviolet oxidation device is used as a base to produce carbonated water in which the concentration of hydrogen peroxide dissolved therein is limited to 2 $\mu\text{g/L}$ or less and to which carbon dioxide is added to adjust resistivity to be within the range of 0.03 to 5.0 $\text{M}\Omega\text{-cm}$, and the carbonated water is used to clean a substrate installed in substrate treatment device (1) and having at least copper or a copper compound exposed on its surface.