

CLAIMS

1. A wafer cleaning apparatus in which a wafer held on a rotatable table disposed in a chamber is rotated and cleaned with a chemical solution, wherein

the chamber includes an inlet section where a gas is supplied into the chamber and an outlet section where the gas is exhausted, and

the wafer cleaning apparatus comprises:

a cup unit disposed to surround the table holding the wafer, and configured to move vertically and to catch the chemical solution scattered away from the rotating wafer after cleaning; and

a shield plate disposed outside the cup unit, extending inwardly from an inner wall of the chamber, and shaped to have a central hole,

wherein the hole of the shield plate has an inner diameter equal to or larger than an inner diameter of the cup unit and equal to or smaller than an outer diameter thereof, and

the shield plate is installed at a position lower than a height position of the wafer held by the table.

2. The wafer cleaning apparatus according to claim 1, wherein the shield plate completely blocks a space provided between the shield plate and the cup unit when the cup unit is raised.

3. The wafer cleaning apparatus according to claim 1 or 2, wherein

the shield plate satisfies a condition that a sum of an exhaust sectional area 2 and an exhaust sectional area 3 is equal to or larger than an exhaust sectional area 1, where the exhaust sectional area 1 is an area of a space

which is formed between the table and the cup unit when the cup unit is raised,

the exhaust sectional area 2 is an area of a space which is formed between the table and the cup unit when the cup unit is lowered, and

the exhaust sectional area 3 is an area of a space which is formed between the shield plate and the cup unit when the cup unit is lowered.

4. The wafer cleaning apparatus according to any one of claims 1 to 3, wherein the cup unit has a space between the table and an upper end of the cup unit when the cup unit is lowered.

5. The wafer cleaning apparatus according to any one of claims 1 to 4, wherein an upper portion of the cup unit is inwardly inclined or R-shaped.

6. A wafer cleaning method with the wafer cleaning apparatus according to any one of claims 1 to 5, the method comprising

cleaning a wafer with a gas flow inside the chamber being regulated by the shield plate.