CLAIMS

1. A sputtering apparatus having:

a vacuum chamber in which a magnesium oxide target is disposed;

a stage for holding thereon a substrate to be processed, the stage being disposed inside the vacuum chamber so as to face the magnesium oxide target;

driving means for driving to rotate the stage;

a sputtering power source for applying HF power to the magnesium oxide target; and

gas introduction means for introducing a rare gas into the vacuum chamber,

characterized in:

that a distance between the substrate and a sputtering surface of the magnesium oxide target is set to a range of 40 mm – 150 mm; and

that the magnesium oxide target is constituted by at least two target materials having a smaller area than the area of the substrate, said at least two target materials being disposed on an identical plane that is parallel with the substrate held on the stage while being disposed at respectively different offset amounts from the center of the substrate.

2. The sputtering apparatus according to claim 1, wherein the magnesium oxide target is constituted by two target materials, characterized in that an offset amount of one of the target materials is set to 2.06 – 2.50 times the offset amount of the other of the target materials.

3. The sputtering apparatus according to claim 1, wherein the magnesium oxide target is constituted by two target materials, characterized in that an offset amount of one of the target materials is set to 2.13 – 2.25 times the offset amount of the other of the target materials.