

GAS INJECTION DEVICE OF SEMICONDUCTOR THERMAL PROCESSING EQUIPMENT AND SEMICONDUCTOR THERMAL PROCESSING EQUIPMENT

ABSTRACT

The present disclosure provides a gas injection device of semiconductor thermal processing equipment and the semiconductor thermal processing equipment. The device includes an inlet pipe. A first pipe segment includes a first pipe wall and a second pipe wall embedded in the first pipe wall. A buffer space is formed between an inner wall of the first pipe wall and an outer wall of the second pipe wall. A plurality of first air holes are evenly distributed along a vertical direction on the first pipe wall, and the first air holes are communicated with the buffer space and the process chamber. A plurality of second air holes are arranged on the second pipe wall, and the second air holes are communicated with the internal space of the second pipe wall and the buffer space. A change rule of the inner diameter of the second pipe wall in the vertical direction and/or an arrangement rule of the plurality of second air holes satisfy that the gas outlet volumes at different positions in the vertical direction for the process gas flowing into the buffer space through the plurality of second air holes are the same. The technical solution of the present disclosure can ensure that different wafers obtain a uniform gas volume to ensure the thickness uniformity of the films formed on the wafers and the process results are consistent.

FIG. 2