

ABSTRACT OF THE DISCLOSURE
DYNAMIC BLENDING GAS DELIVERY SYSTEM AND METHOD

A dynamic blending gas delivery system and method are disclosed. A blended gaseous mixture produced in accordance with the method is used in chemical vapor deposition tools or similar process tools. One embodiment is a multi-step method for processing a plurality of fluids to form a blended gaseous mixture and supplying the blended gaseous mixture to a distribution header from which the blended gaseous mixture is delivered to at least one tool. The first step is to supply a first fluid. The second step is to heat the first fluid to a temperature where at least some portion of the first fluid is a vapor. The third step is to superheat the vapor portion of the first fluid to a temperature sufficient to avoid condensation of the blended gaseous mixture delivered to the at least one tool. The fourth step is to supply a second fluid. The fifth step is to heat the second fluid to a temperature sufficient to avoid condensation of the superheated vapor portion of the first fluid when the superheated vapor portion comes in contact with the second fluid. The sixth step is to combine the heated second fluid and the superheated vapor portion of the first fluid to form a blended gaseous mixture having desired physical and chemical properties for chemical vapor deposition, epitaxial film growth, or a similar process. The final step is to deliver the blended gaseous mixture to the distribution header. In the preferred embodiment, the first fluid is trichlorosilane and the second fluid is hydrogen.

(Figure 1)