

ABSTRACT

REACTOR FOR GENERATION OF MOISTURE

An improved reactor for generating water from hydrogen and oxygen which allows production of moisture at a high reaction rate exceeding 99 percent with the temperature kept under some 400°C inside the reactor shell (1) and with the moisture production being more than 1,000 sccm. One form of the reactor (Fig. 1) according to the invention is made up with two bottomed cylinders, a first reactor structural component (2) and a second reactor structural component (3), united to define a sealed interior space (1a). The sealed interior space (1a) of the reactor shell (1) is partitioned by a diffusion filter (10) into a first chamber (1b) provided with an inlet reflector unit (9) and a second chamber (1c) provided with an outlet reflector-diffuser unit (11). On the inside surface of the second reactor structural component (1c) is formed a platinum coated catalyst layer (13). The inlet reflector unit (9) comprises a cylindrical casing (9a) mounted over a material gas feedport (2c) on the inside surface of the first reactor structural component (2), side openings (9c) formed in the casing (9a) and a reflector (9b) closing the open end of the casing (9a). The outlet reflector-diffuser unit (11) has a cylindrical casing (11a) fixed over a moisture gas outlet port (3c) on the inside surface of the second reactor structural component (3), side openings (11e) formed in the casing, a reflector (11b) closing the open end of the casing (11a), an outlet diffusion filter (11c) provided inside the casing (11a)

and a platinum coated catalyst layer (11d) formed on the outlet diffusion filter (11c).

(Fig. 1)