

ABSTRACT**CATALYTIC VAPOR-PHASE OXIDATION METHOD AND SHELL-AND-TUBE SHELL-AND-TUBE REACTOR**

A catalytic vapor-phase oxidation method capable of suppressing the occurrence of hot spot, and a shell-and-tube reactor preferably used in the method are disclosed herein.

In the catalytic vapor-phase oxidation method wherein, using a shell-and-tube reactor incorporating a plurality of reaction tubes therein, a heating medium that absorbs reaction heat is circulated with surrounding the reaction tubes while the reaction tubes are filled with a catalyst and a raw material gas is supplied, thereby to proceed the reaction, the raw material gas is allowed to flow downward from the top of the reaction tubes and the heating medium is also allowed to flow downward from the upper part of the shell in the reactor.

In the shell-and-tube reactor having a plurality of reaction tubes incorporated therein, a circulation path for the heating medium formed outside the reaction tubes, a heating medium introducing section provided on the upper part of the shell in the reactor, and a heating medium discharge section provided on the lower part of the shell in the reactor, a back pressure applying means for the heating medium is further provided in the heating medium discharge section.

[Fig. 2]