

Abstract**Separation Device for Use in Fluidized bed Reactor, Reaction Regeneration Apparatus and Process for Preparing Olefins, and Process for Preparing Aromatic Hydrocarbons**

A separation device for use in a fluidized bed reactor comprises a preliminary gas-solid separator communicated with an outlet of the fluidized bed reactor; a vertically arranged damper, a solid outlet of the preliminary gas-solid separator being communicated with a lower region of the damper, and a gas outlet of the preliminary gas-solid separator being communicated with an upper region of the damper; and a fine gas-solid separator, an inlet of the fine gas-solid separator being communicated with the upper region of the damper, and a solid outlet of the fine gas-solid separator being communicated with the lower region of the damper. Product having catalysts entrained therein from the fluidized bed reactor is fed into the preliminary gas-solid separator, most solid catalysts being separated and fed into the lower region of the damper; the product entraining the rest catalysts is fed into the upper region of the damper, and into the fine gas-solid separator, the rest catalysts being separated and fed into the lower region of the damper; and final product is obtained from the outlet of the fine gas-solid separator

Fig. 1