

DEVICE AND METHOD FOR PREPARING AROMATIC HYDROCARBONS FROM NAPHTHA

Abstract

5 The application discloses a device and method for preparing aromatic hydrocarbons from naphtha, and the device comprises a fluidized bed reactor and a riser reactor; the fluidized bed reactor is used for introducing a naphtha raw material to make contact with a catalyst from the riser reactor and react to generate a BTX-containing product gas stream and a spent catalyst, the product gas stream is subjected to gas-solid separation, the product gas stream after separation is sent to a
10 downstream working section, and unconverted naphtha after separation returns to the fluidized bed reactor as a raw material; and a part of low-carbon alkanes after separation return to the riser reactor as raw materials and are further converted into aromatic hydrocarbons and other components. According to the application, by connecting a high-temperature riser reactor and a relatively low-temperature fluidized bed reactor in series, a yield of low-carbon alkane is reduced and a yield
15 of aromatic hydrocarbons is increased; and linear-chain and branched-chain aliphatic hydrocarbons can be efficiently converted into the aromatic hydrocarbons in a highly selective mode, and a content of p-xylene in a xylene mixture is greater than 50wt%.