

ABSTRACT

Provided is a process for producing an aromatic hydrocarbon using a molybdenum-containing solid catalyst, more specifically a process for producing an aromatic hydrocarbon efficiently from a lower hydrocarbon gas essentially containing methane by activating the molybdenum-containing solid catalyst with maintaining a high yield for a long period of time.

The process comprises a pre-contacting step of allowing a molybdenum-containing solid catalyst to contact with a pre-contacting gas comprising at least one selected from a lower hydrocarbon and a hydrogen gas; and a reaction step of allowing the pre-contacted catalyst to contact with a raw material gas essentially containing methane, to generate an aromatic hydrocarbon, wherein the starting temperature in the pre-contacting step is lower than the reaction temperature, and the temperature during the pre-contacting step from the beginning to the end is not over the reaction temperature.