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(54) Title: CATALYST AND PROCESS FOR AROMATIC HYDROCARBONS PRODUCTION FROM METHANE

(57) Abstract: A molybdenum-loaded crystalline aluminosilicate molecular sieve that exhibits the MFI crystal structure and has a silica-to-alumina ratio of about 50:1 is useful for aromatizing a hydrocarbon feed stream. The crystalline aluminosilicate preferably has an external surface acidity selectively passivated by means of an amorphous silica layer. A process for the aromatization of methane comprises a one- or multi-step process that contacts a feed stream comprising at least methane with a catalyst composition comprising the preferred molecular sieve, at hydrocarbon conversion conditions that include a temperature of 600-800 °C, a pressure of less than 5 atmospheres absolute and a Weight Hourly Space Velocity (WHSV) of 0.1-10 h⁻¹, with the external surface acidity of the crystalline aluminosilicate preferably selectively passivated by an amorphous silica layer. C₆-plus aromatic hydrocarbons are preferably recovered from the process by means of an intermediate separation step.



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