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(71) Applicant (for all designated States except US): **EXXON-MOBIL CHEMICAL PATENTS INC.** [US/US]; 5200 Bayway Drive, Baytown, TX 77520 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ELIA, Christine, N.** [US/US]; 437 Garretson Road, Bridgewater, NJ 08807 (US). **LO, Frederick, Y.** [US/US]; P.O. Box 343, Middlesex, NJ 08842 (US). **ELKS, Jeffrey, T.** [US/US]; 1902 Quail Court, Easton, PA 18040 (US). **LACY, Darryl, D.** [US/US]; 3400 Bridlepath Road, Easton, PA 18045 (US). **KALYANARAMAN, Mohan** [US/US]; 732 Iris Lane, Media, PA 19063 (US).

(74) Agents: **FENG, Xiaobing** et al.; Exxonmobil Chemical Company, Law Technology, P.O. Box 2149, Baytown, TX 77522-2149 (US).

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(57) Abstract: This disclosure relates to a catalyst composition (a) a crystalline MCM-22 molecular sieve; and (b) a binder comprising at least 1 wt. % of a titanium compound. In one aspect of this disclosure, the titanium compound comprises at least one of titanium oxide, titanium hydroxide, titanium sulfate, titanium phosphate, or any combination thereof. In another aspect of this disclosure, the catalyst composition further comprises a crystalline MCM-22 family molecular sieve comprising at least one of MCM-22, MCM-36, MCM-49, MCM-56, ITQ-I, ITQ-2, ITQ-30, PSH-3, ERB-I, SSZ-25, or any combination thereof. In other embodiments, this disclosure relates to a process for preparing the catalyst composition of this disclosure, the process comprises (a) providing the crystalline MCM-22 family molecular sieve and the binder comprising at least 1 wt.% of a titanium compound to form a mixture; and (b) forming the mixture into the catalyst composition. In a preferred embodiment, the forming step comprises extruding. In yet other embodiments, this disclosure discloses a process for alkylating an aromatic hydrocarbon with an alkylating agent to produce an alkylated aromatic product by contacting the aromatic hydrocarbon and alkylating agent with the catalyst composition.

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