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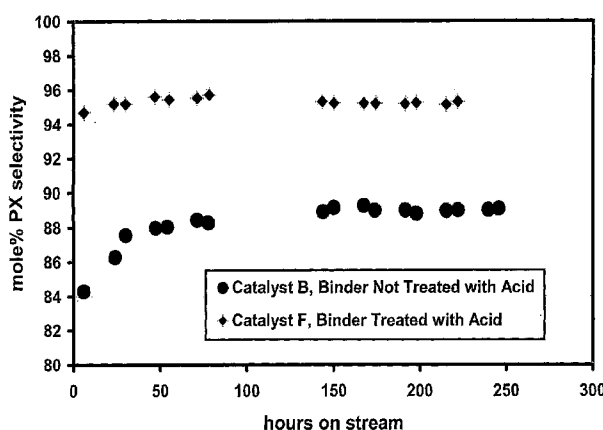
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[Continued on next page]

(54) Title: BOUND PHOSPHORUS-MODIFIED ZEOLITE CATALYST, METHOD OF PREPARING AND METHOD OF USING THEREOF



(57) Abstract: Disclosed is a bound phosphorus-modified zeolite catalyst. Zeolite is treated with a phosphorus compound to form the phosphorus-treated zeolite. Binder material is treated with a mineral acid prior to being bound with the phosphorus-modified zeolite. The binder material includes inorganic oxide materials, such as alumina, clay, aluminum phosphate and silica- alumina, in particular, a binder of alumina or clay or their combinations. The mineral acid includes hydrochloric acid, nitric acid, phosphoric acid or sulfuric acid. The phosphorus- treated zeolite is combined with the acid-treated inorganic oxide binder material to form a zeolite-binder mixture. Water is added to form an extrudable paste which maybe shaped and is heated to a temperature of about 4000C or higher to form a bound phosphorus-modified zeolite catalyst. For aromatic alkylation, the bound phosphorus-modified zeolite catalyst is contacted with an aromatic alkylation feed of an aromatic compound and an alkylating agent under reaction conditions suitable for aromatic alkylation.

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