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(54) Title: PROCESSES FOR REGENERATING CATALYSTS AND FOR UPGRADING ALKANES AND/OR ALKYL AROMATIC HYDROCARBONS

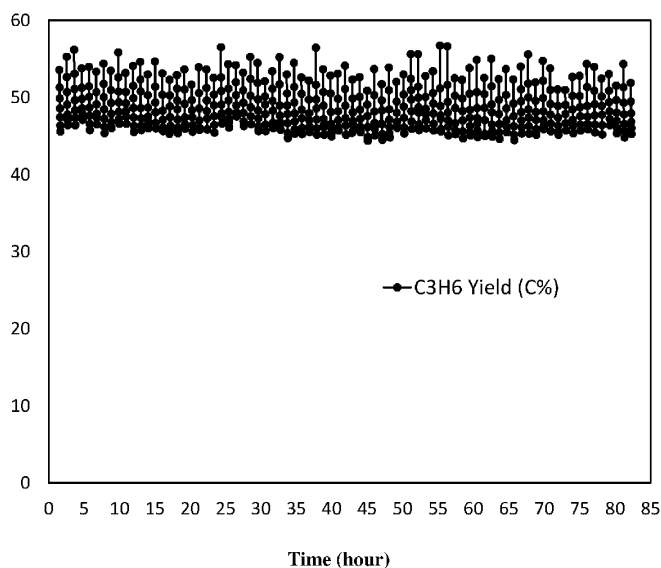


FIG. 1

(57) Abstract: Processes for regenerating an at least partially deactivated catalyst that can include a Group (10) element, an inorganic support, and a contaminant. The Group (10) element can have a concentration of from 0.06 wt% to 6 wt%, based on the weight of the inorganic support. The process can include (I) heating the deactivated catalyst using a heating gas mixture that includes H₂O at a concentration > 5 mol%, based on the total moles in the mixture to produce a precursor catalyst. The process can also include (II) providing an oxidative gas that includes ≤ 5 mol% of H₂O, based on the total moles in the oxidative gas, and (III) contacting the precursor catalyst at an oxidizing temperature with the oxidative gas for a duration of at least 30 seconds to produce an oxidized precursor catalyst. The process can also include (IV) obtaining a regenerated catalyst from the oxidized precursor catalyst.

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