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ACTION

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(54) Title: PRODUCTION OF PHENOL USING REACTIVE DISTILLATION

(57) Abstract: A process for producing phenol and acetone from cumene hydroperoxide comprises: i) introducing a cumene hydroperoxide feed into a reactive distillation column comprising at its upper portion a distillation column and at its lower portion a catalyst bed, at a point above said catalyst bed; ii) mixing a diluting portion of acetone with said cumene hydroperoxide to provide a diluted cumene hydroperoxide; iii) directing said diluted cumene hydroperoxide through said catalyst bed under conditions sufficient to effect the exothermic decomposition of said cumene hydroperoxide to a product comprising a heavy fraction comprising phenol and a vaporized light fraction comprising acetone; iv) withdrawing said heavy fraction as bottoms from said column; v) flowing said vaporized light fraction upwards through the catalyst bed and at least a portion of the reactive distillation column; vi) condensing said light fraction to provide at least a portion of said diluting portion of acetone for subsequent mixing with said cumene hydroperoxide feed; vii) optionally withdrawing a portion of said light fraction as overhead from said column; and viii) repeating steps i) through vii). An apparatus for carrying out the process is also provided.