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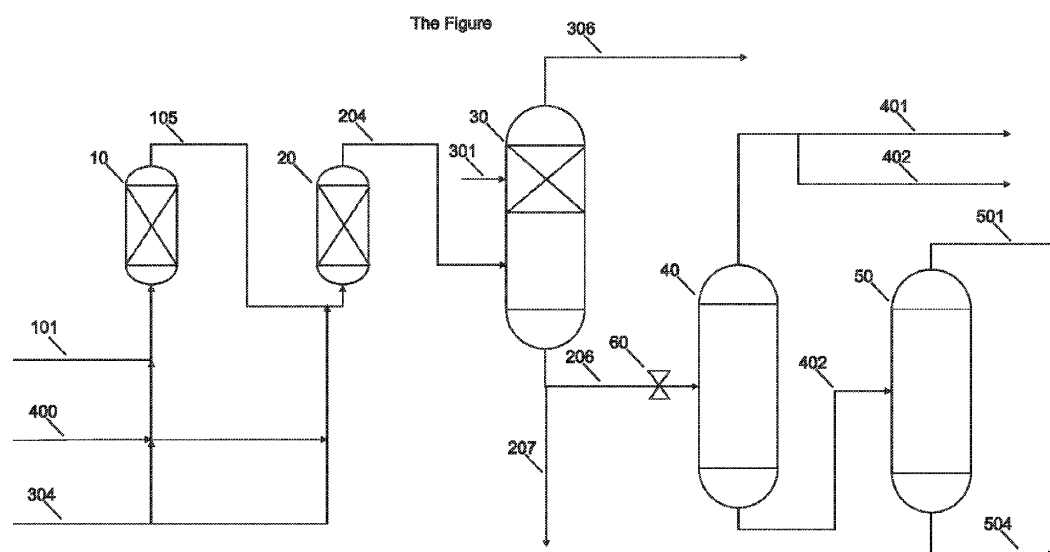
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(54) Title: SELECTIVE DIMERIZATION AND ETHERIFICATION OF ISOBUTYLENE VIA CATALYTIC DISTILLATION



(57) Abstract: A process for the selective dimerization and etherification of isoolefins, including feeding a mixed C4 stream and an oxygenate stream to a first fixed bed reactor containing a first catalyst, producing a first reactor effluent comprising dimers of the isoolefin, unreacted C4s, and unreacted oxygenates. Feeding the first reactor effluent directly to a second fixed bed reactor containing a second catalyst, producing a second reactor effluent containing dimers of the isoolefin, unreacted C4s, and unreacted oxygenates. Feeding the second reactor effluent to a catalytic distillation reactor system containing a third catalyst. Concurrently in the catalyst distillation reactor system reacting unreacted C4s in the presence of the third catalyst to form additional dimers of the isoolefin and/or ethers, and separating the dimers of the isoolefins from unreacted oxygenates and unreacted C4s.

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