

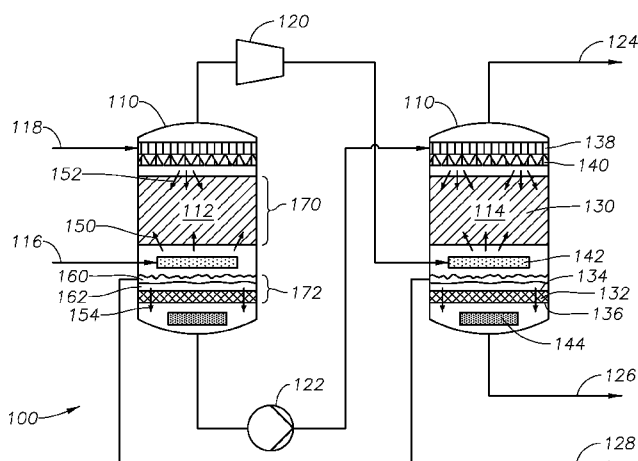
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[SA/SA]; 1 Eastern Avenue, Dhahran, 31311 (SA).(71) Applicant (for AG only): ARAMCO SERVICES COM-
PANY [US/US]; 9009 West Loop South, Houston, Texas
77210-4535 (US).(72) Inventors: HARALE, Aadesh; P. O. Box 1356, Saudi
Aramco, Dhahran, 31311 (SA). XU, Wei; P. O. Box
13495, Saudi Aramco, Dhahran, 31311 (SA). ABBA,
Ibrahim; P. O. Box 14043, Saudi Aramco, Dhahran,
31311 (SA).(74) Agents: CHIN, Brad, Y. et al.; Bracewell & Giuliani LLP,
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(54) Title: HYDROPHILIC MEMBRANE INTEGRATED OLEFIN HYDRATION PROCESS



(57) Abstract: A membrane-integrated hydration reactor that is operable to produce an associated alcohol product from an olefin using water includes a solid acid olefin hydration catalyst in a production zone and a hydrophilic membrane operable to selectively permit pervaporation of water one-way and not permit pervaporation of the associated alcohol or permeation of the olefin at olefin hydration process conditions in a separations zone. The production zone is operable to form a production zone product mixture made of the associated alcohol and any unreacted water. The associated separations zone is operable to form and produce both the associated alcohol product and a pervaporated water product from the production zone product mixture. A method of olefin hydration for forming an associated alcohol product from an olefin using water uses the membrane-integrated, hydration reactor at olefin hydration process conditions.