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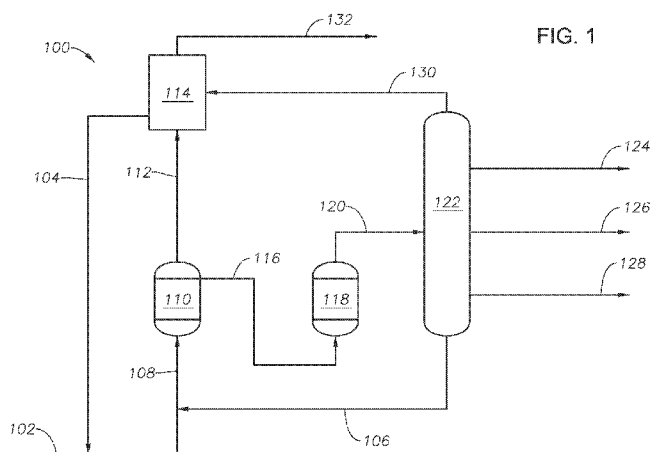
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(54) **Title:** COMBINED HEAVY REFORMATE DEALKYLATION-TRANSALKYLATION PROCESS FOR MAXIMIZING XYLENES PRODUCTION



(57) **Abstract:** A method of forming mixed xylenes from a heavy reformat using a dealkylation- transalkylation system includes the step of introducing both a heavy reformat containing methyl ethyl benzenes and tri-methyl benzenes and that is sufficiently free of toluene and a hydrogen-containing material into the dealkylation stage such that the heavy reformat and the hydrogen -containing material intermingle and contact the hydrodealkylation catalyst. The dealkylation-transalkylation system includes dealkylation, non-aromatic product gas separations and transalkylation stages. Toluene forms from the reaction of methyl ethyl benzenes and hydrogen in the presence of the hydrodealkylation catalyst. The method also includes the step of introducing a dealkylated heavy reformat into the transalkylation stage such that the dealkylated, heavy reformat contacts a transalkylation catalyst, forming a transalkylation stage product mixture includes mixed xylenes.